



**MARSHALLTOWN
MORE THAN EVER**

**CITY OF MARSHALLTOWN CITY COUNCIL AGENDA
CITY HALL COUNCIL CHAMBERS
10 WEST STATE STREET
SEPTEMBER 14, 2026, 5:30 PM**

A. CALL TO ORDER

B. PLEDGE OF ALLEGIANCE

C. ROLL CALL

Cahill, Fonseca, Mitchell, Nichols, Schneider, Thompson, Yepez-Gomez

D. PUBLIC COMMENT

Members of the public may make comments on any item that is not on the agenda during this time. The speaker shall approach the microphone and state their name and address. Comments shall be limited to three (3) minutes unless a longer comment is authorized by the Mayor. The speaker shall direct comments to the Mayor and the Council as a whole.

The Mayor and Council may provide a response to a public comment, but shall not engage in discussion or debate on items raised by members of the public. No action may be taken on items raised in public comments to comply with open meeting laws.

E. MAYOR, COUNCIL AND ADMINISTRATOR COMMENTS

F. CONSENT AGENDA

1. Approve Minutes 09/14/26 Meeting and Bill List \$4,002,902.24
2. Approve Alcohol License Renewals - Old Timers Tavern at 401 South Center Street; Opa!!! Grill at 4 West Boone Street; Aldi Inc #42 at 2405 South Center Street
3. Approve Alcohol License Amendments - Ownership update for Caseys Marketing Company
4. Receipt of August 2026 Building and Trade Permit Report
5. Approve July 2026 Monthly Financial Statements
6. Resolution Approving the Fiscal Year 2026 Street Finance Report

7. Resolution Approving the Fiscal Year 2026 Annual Financial Report
8. Resolution Approving an Agreement with Mechdyne Corporation for the City Council Chambers Audiovisual System and South-Wall Small Meeting Area
9. Resolution Approving Interlocal Grant Agreement for the Iowa/Byrne-Justice Assistance Grant Program (JAG) \$17,605.00 Split 50% with Marshall County, and Approval of Memorandum of Understanding to Share Grant Funds with Marshall County
10. Resolution Approving the 2026 Update of the FTA Title VI Program for Marshalltown Municipal Transit (MMT)
11. Resolution Ordering Construction of the Flow Equalization Improvements for Industrial Pretreated Wastewater, Project #WPC25002, Setting Public Hearing on Proposed Plans, Specifications, Form of Contract, and Opinion of Probable Cost, and Directing Publication of Notice to Bidders
12. Resolution Approving Change Order #8 for the Water Plaza at Mega-10 Park Project #PRK22004
13. Resolution Approving Owner's Certificate of Completion and Accepting the Water Plaza at Mega-10 Park Project #PRK22004
14. Resolution Approving Owner's Certificate of Completion and Accepting the Linn Creek Trailhead and Bridge Project #TRL24001-2

G. REPORTS

1. Marshalltown Central Business District Annual Report

H. RESOLUTIONS

1. Public Hearing and Resolution on Urban Renewal Plan Amendment for the Marshalltown Urban Renewal Area No. 4
2. Resolution Authorizing Internal Advance for Funding of Urban Renewal Project
3. Resolution Approving Contract Change Order #4 for the Center St Viaduct Rehabilitation Project, being Iowa DOT DHM-4797(629)-8K-64 and City Project #STR21002, a Decrease of \$254,381

I. ORDINANCES

1. Public Hearing and Ordinance 15127 to Amend the Official Zoning Map for 707 E Linn Street and 205 S 8th Avenue - Second Reading
2. Ordinance 15128 Amending the Code of Ordinances of the City of

Marshalltown, Iowa, by Repealing and Replacing Section 50.027(B)
Collection Vehicles - Second Reading

J. DISCUSSION

1. Marshall Gun Club Lease
2. Street Improvement Program - Pavement Management Presentation & Recommendations from Street Steering Committee

K. CLOSED SESSION

1. Closed session pursuant to Section 21.5, Subsection (1) Paragraph (i) OF THE CODE OF IOWA to evaluate the professional competency of an individual whose appointment, hiring, performance or discharge is being considered when necessary to prevent needless and irreparable injury to that individual's reputation and that individual requests a closed session. The City of Marshalltown has an attorney-client relationship with Lynch Dallas P.C., by Council Resolution 2022-161, approved 06/13/22. There may be council action by motion following the closed session if directed by the city's attorney.

L. ADJOURNMENT

MISSION STATEMENT

The City of Marshalltown collaborates to provide a welcoming, safe, vibrant, and growing community.

Please visit the City's website for the complete agenda packet and to subscribe to agenda notices and department news at www.marshalltown-ia.gov.

**CITY OF MARSHALLTOWN
CITY COUNCIL PROCEEDINGS
AUGUST 24, 2026**

Mayor Ladehoff called the meeting to order at 5:30 pm, August 24, 2026, at the City Hall Council Chambers, 10 W State Street, and led the Pledge of Allegiance. Roll call-Present: Cahill, Fonseca, Mitchell, Nichols, Schneider, Thompson, Yepez-Gomez. Public comments for items not on the agenda were provided. Mayor, Council, and Administrator comments were provided. Chief Jones presented years of service to Officer Adan Ortiz Diaz for 5 years and Officer David Powell for 30 years. Chief Cross presented years of service to Maria Ramirez for 5 years along with a Meritorious Service Award.

CONSENT AGENDA

Motion by Marco Yepez-Gomez, second by Gary Thompson, to change the order of business to move I. Ordinances, J. Discussion, and K. Closed Session to after the Consent Agenda. Motion carried 6-0 (Fonseca absent). Motion by Jeff Schneider, seconded by Sue Cahill, to approve the consent agenda less item 9: Approve Minutes 08/10/26 Meeting and Bill List \$3,258,583.43; Approve Alcohol License Renewals for American Legion at 1301 South 6th Street, Goldan Land Asian Food at 11 East State Street, Kwik Star #394 at 2500 South Center Street; Approve Civil Service List - Police Sergeant Promotional List; Approve June 2026 Monthly Financial Statements; Resolution Transferring Funds for Fiscal Year 2026 Through June 30, 2026; Resolution Declaring Certain Property Surplus Property and Authorizing Disposal Thereof from the Police Department; Resolution Setting a Public Hearing on a Proposed Rezoning of 707 E Linn Street and 205 S 8th Avenue; Resolution Allowing Open Containers on Designated Public Ways for Oktoberfest on September 24-27, 2026; Resolution Approving Change Order 10 in the Decreased Amount of \$8,065.00 for the Linn Creek Trailhead and Bridge Project #TRL24001 and #TRL24002; Resolution Approving Owner's Certificate of Completion and Accepting the CDBG-DR Tree Planting Project #PRK24002. Motion carried 6-0 (Fonseca absent).

Motion by Sue Cahill, seconded by Marco Yepez-Gomez, to approve Resolution to Approve the Code Building Upgrade Grant Application for St. Mary Catholic Church at 11 West Linn Street, Marshalltown, Iowa. Councilor Thompson requested that the city conduct a review of the grant requirements to clearly define the criteria for a commercial property. Public comment was provided. Motion carried 6-0 (Fonseca absent).

ORDINANCES

Motion by Gary Thompson, seconded by Marco Yepez-Gomez, to adopt the second reading of Ordinance 15123 on the Amendment to Chapter 156 of the Code of Ordinances of the City of Marshalltown, Iowa, Establishing a Temporary Data Center Moratorium. Public comment was provided. Motion carried 5-1, Jeff Schneider dissenting (Fonseca absent). Motion by Marco Yepez-Gomez, seconded by Greg Nichols, to waive the third reading. Motion carried 6-0 (Fonseca absent).

Motion by Greg Nichols, seconded by Mark Mitchell, to adopt the second reading of Ordinance 15124 Amending the Code of Ordinances of the City of Marshalltown, Iowa, by Repealing

Section 73.050 Weapons. Motion carried 5-1, Sue Cahill dissenting (Fonseca absent). Motion by Gary Thompson, seconded by Mark Mitchell, to waive third reading. Motion carried 6-0 (Fonseca absent).

Motion by Jeff Schneider, seconded by Greg Nichols, to adopt the second reading of Ordinance 15125 Amending the Code of Ordinances of the City of Marshalltown, Iowa, 70.009 Vehicle Condition, Equipment and Load, by Adjusting the Percentage of Window Tint Allowed. Motion carried 6-0 (Fonseca absent). Motion by Gary Thompson, seconded by Jeff Schneider, to waive the third reading (Fonseca absent). Motion carried 6-0.

Motion by Jeff Schneider, seconded by Mark Mitchell, to adopt the second reading of Ordinance 15126 Amending the Code of Ordinances of the City of Marshalltown, Iowa, 130.018 Fireworks, to Add the Permitted Time Frames for Usage. Motion carried 6-0 (Fonseca absent). Motion by Gary Thompson, seconded by Jeff Schneider, to waive the third reading. Motion carried 6-0 (Fonseca absent).

Motion by Jeff Schneider, seconded by Mark Mitchell, to adopt the first reading of Ordinance 15127 to Amend the Official Zoning Map for 707 E Linn Street and 205 S 8th Avenue. Clayton Ender, Assistant Housing and Community Development Director, advised Marshalltown Company has requested rezoning of these parcels from Medium Density Residential to General Industrial with conditions for off-street parking facilities. Motion carried 6-0 (Fonseca absent).

Motion by Gary Thompson, seconded by Mark Mitchell, to adopt the first reading of Ordinance 15128 Amending the Code of Ordinances of the City of Marshalltown, Iowa, by Repealing and Replacing Section 50.027(B) Collection Vehicles. Carol Webb, City Administrator, advised this amendment would allow haulers to utilize pickup trucks on routes as long as they have one packer-style truck that is primarily used. Motion carried 5-1, Jeff Schneider dissenting (Fonseca absent).

DISCUSSION

Cole O'Donnell, Finance Director, provided an overview of the changes to the capital improvement plan and fiscal year budget process. The CIP and project-budgeting process will be restructured so that projects are identified and reviewed earlier, financial resources are easier to understand and track, and the Council and public have greater visibility into capital spending decisions.

Clayton Ender, Assistant Director of Housing and Community Development, presented an annexation request for 2342 Odessa Drive. The Marshalltown Water Works advised the new owner would need to annex into the city limits or have the Council deny the request in order to continue with water service. Staff recommended the Council deny the annexation. The owner, Doug Bealls, requested the council deny the request. Motion by Jeff Schneider, seconded by Mark Mitchell, to approve the annexation of 2342 Odessa Drive. Motion failed 0-7, Cahill, Fonseca (rejoined the meeting at 7:00 pm), Mitchell, Nichols, Schneider, Thompson, Yopez-Gomez dissenting.

Amir Atefi, Swarm Systems, Inc., provided a presentation that outlined the company's proposal

to purchase approximately 30 acres of city-owned land in the Edgewood Industrial Park for a potential private-enterprise data center. Swarm Systems asked the City to approve a land purchase agreement so the company can conduct its due diligence while the City develops its data-center zoning regulations. The full presentation is available in the agenda packet in the public portal <https://marshalltownia.portal.civicclerk.com/>. Public comment was provided.

CLOSED SESSION

Motion by Jeff Schneider, second by Greg Nichols, to go into closed session pursuant to Section 21.5, subsection 1, paragraph c, of the Code of Iowa, to discuss strategy with counsel in matters where litigation is imminent where its disclosure would be likely to prejudice or disadvantage the city in that litigation. The City of Marshalltown has an attorney-client relationship with Lynch Dallas P.C., by Council Resolution 2022-161, approved 06/13/22. There may be council action by motion following the closed session if directed by the city's attorney. Steve Leidinger, City Attorney, was present and advised he is aware of the facts and circumstances around this closed session and that, in his opinion, the council has the legal right to enter into closed session. Motion failed 4-2, Mitchell and Thompson dissenting and Yepez-Gomez abstaining.

Motion by Jeff Schneider, second by Greg Nichols, to go into closed session pursuant to Section 21.5 subsection (1) paragraph (j) OF THE CODE OF IOWA to discuss the purchase or sale of particular real estate only where premature disclosure could be reasonably expected to increase the price the governmental body would have to pay for that property or reduce the price the governmental body would receive for that property. The City of Marshalltown has an attorney-client relationship with Lynch Dallas P.C., by Council Resolution 2022-161, approved 06/13/22. There may be council action by motion following the closed session if directed by the city's attorney. Steve Leidinger, City Attorney, was present and advised that he is aware of the facts and circumstances around this closed session and that, in his opinion, the council has the legal right to enter into closed session. Motion failed 4-3, Mitchell, Thompson, and Yepez-Gomez dissenting.

Motion by Greg Nichols, second by Jeff Schneider, to discuss in open session the sale of real estate with possible action to follow. Motion failed 2-5, Cahill, Fonseca, Mitchell, Thompson, Yepez-Gomez dissenting.

MOTIONS

Motion by Jeff Schneider, seconded by Gary Thompson, to appoint Marty Wymore to the Plan and Zoning Commission, term ending 03/31/2028 (replacing Matt Brodin). Motion carried 7-0.

Motion by Mark Mitchell, seconded by Gary Thompson, to appoint Robert Thomas to the Water Works Board of Trustees, term ending 05/01/2028 (replacing Benjamin Fletcher). Motion carried 7-0.

Motion by Gary Thompson, seconded by Jeff Schneider, to approve a 5-day Class C Retail Alcohol License for Midnight Ballroom LLC for a rodeo on 10/17 at the Central Iowa Fairgrounds. Motion carried 7-0.

Motion by Gary Thompson, seconded by Jeff Schneider, to approve a 5-day Special Class C

Retail Alcohol License for Lucky Wife Wine Slushies for Oktoberfest 9/24/26-9/27/26. Motion carried 7-0.

Motion by Gary Thompson, seconded by Jeff Schneider, to approve a 5-day Special Class C Retail Alcohol License for Thirsty Pigs LLC for Oktoberfest 9/24/26-9/27/26. Motion carried 7-0.

RESOLUTIONS

Motion by Jeff Schneider, seconded by Sue Cahill, to approve Resolution Approving an Amended Agreement Between the City of Marshalltown and the Marshall County Arts+Culture Alliance, Inc. for a Permanent Art Installation on City Property at 101 West Main Street. Kelsie Stafford, Parks and Recreation Director, presented concept renderings for the layout and landscaping. Public comment was provided. Motion carried 7-0.

Motion by Jeff Schneider, seconded by Mark Mitchell, to approve Resolution Approving a Chapter 28E Agreement with the Marshalltown Community School District for Shot Put and Discus Facilities at West End Park. Kelsie Stafford, Parks and Recreation Director, advised the MCSD existing track area does not have sufficient space to accommodate shot put and discus events. The agreement would allow the MCSD to construct and seasonally use throwing facilities in a defined portion of West End Park. Motion carried 7-0.

Mayor Ladehoff opened the public hearing at 9:02 pm for the Marshalltown 2045 Comprehensive Plan. Clayton Ender, Assistant Housing and Community Development Director, advised the process included a stakeholder advisory committee, more than 10 community listening events, input from major employers, a community round table event and open house, and a public feedback website. The plan covers land use and design, mobility, housing and neighborhoods, parks, trails, and the environment, economic development and sub-areas, facilities, and infrastructure, along with how the plan should be implemented. The Plan and Zoning Commission recommended approval. No written comments were received. Public comment was provided. The public hearing was closed at 9:08 pm. Motion by Greg Nichols, seconded by Mark Mitchell, to approve Resolution on the Adoption of the Marshalltown 2045 Comprehensive Plan. Motion carried 4-3, Mark Mitchell, Gary Thompson, Marco Yopez-Gomez dissenting.

ADJOURNMENT

The meeting adjourned at 9:11 pm.

Respectfully Submitted,


Alicia Hunter, City Clerk

CITY OF MARSHALLTOWN, IOWA

Mike Ladehoff, Mayor

ATTEST:

Alicia Hunter, City Clerk

BILL LIST 09/14/26

Advertising

FirstIntBank/1 560.09

Consulting & Professional Fees

BERENS-TATE/1 3,750.00
Bernie.Lowe/2 54.16
Calhoun-Burns/1 7,199.63
FirstIntBank/4 440.00
Howard.R.Green/2 7,785.75
Iowa.One.Call/3 563.30
Lynch.Dallas.PC/6 4,648.00
McClure.Engrg/1 19,100.84
Sports Faciliti/1 14,750.00
YSS Grants Bill/3 42,814.81

Contracts

AAA.Septic/2 265.00
ARL/1 7,799.00
Ascendance Truc/1 112,801.00
BDH/28 7,896.84
Boulder.Contract/1 311,222.50
City.Laundering/2 352.23
Clement Home/1 4,500.00
Cloudiance Inc./1 2,690.00
Cntrl.St.Roof/1 318.77
Construct/1 340,742.77
Dans Overhead D/1 22,162.95
EO Johnson Co/3 223.56
FirstIntBank/8 1,816.01
Hardons/1 166.42
Johnson Feed/11 28,396.09
Manatts Inc/1 305,508.05
Marsh.Co.Landfi/1 84.00
MarshalltownCBD/1 15,000.00
MCSD/2 1,537.91
MEDIC/1 2,500.00
Mid-Iowa Enterp/1 24,117.27
Midw.Auto.Fire/2 548.00
Midwest.Safety./1 100.00
Mobotrex.Inc./1 700.00
Mtn.Wtrwrks/2 42.00
Prairie Waste/10 950.56
Rainbow Carwash/5 186.14
Region 6/1 11,937.00
Safe Building/1 6,300.00
SAFETY.KLEEN/2 2,459.57
Schendel.Pest.C/3 69.38
Schumacher.Elev/2 520.59
Snyder & Assoc/3 33,640.00
Sterling.Fire/11 1,780.00
Tyler.Technolog/1 4,980.95
Veenstra & Kimm/2 37,060.12
Wendler Inc/1 239,056.99
Xerox Corp/6 1,389.17
Zaragoza, Maria/1 2,025.00

Equipment/Minor

Ziegler/1 2,583.06

Library Books

FirstIntBank/59 3,545.77

Medical

Bernie.Lowe/2 1,313.35
Covenant Workpl/1 432.25
FirstIntBank/3 7,580.58
Health.Partners/3 200,812.91
Medimpact Healt/1 376.55
UP Health - DSM/2 126.00

Netted/Collected

FirstIntBank/8 -77.30

Payroll.Net

Payroll/2 822,889.68

Rebates

FirstIntBank/1 -0.06
Menards/1 -3.49

Refund/Reimbursed

August,Jennifer/1 66.57
FirstIntBank/5 28.31
Garcia, Ramon/1 32.24
Glick, Brandy/1 91.91
Health.Partners/3 -13,666.63
Marshall Cemete/1 410.19
Peterson,Dustin/1 185.00
US Treasury/1 424,690.78
Wantiez, Darci/1 35.29
Wilson, Herbert/1 361.30

Rents/Leases

/0 1,796.00
201 E Main MT/14 5,235.00
6 Pack Propert/1 354.00
A.White/1 703.00
Ackley.Housing/5 1,130.00
Adey LLC/1 665.00
Arrowhead Homes/1 321.00
BJ&J.LLC/1 269.00
BLOOD,A/1 443.00
Borota,K/1 412.00
Brinkmeyer, Rob/1 305.00
Brodin,C/1 57.00
Brown, Larry/1 332.00
Brummel, Michae/1 105.00
BTG Rental LLC/1 237.00
Buckaroo.LLC/2 931.00
Central.IA.Hsng/1 514.00
CIRSI/5 381.00
Clock Tower Sen/9 2,961.00
CMHC.INVEST/1 192.00
Columbus Metro/1 1,518.00
Crestview Apts/20 7,792.00
D.D.Rentals/5 2,152.00
Daters, Toni Ra/1 401.00
Douglas Ter Apt/2 984.00
Ealy, Carol/1 523.00
EPC LLC/2 708.00

BILL LIST 09/14/26

Etter, Connie/1	598.00	Worsfold Farm/1	362.00
Eubanks,C/1	338.00	Service/Repairs	
Friendly.Valley/3	260.00	/0	56.27
Glenda.Drive.LL/3	1,078.00	AAA.Septic/1	100.00
Gorrell, Joseph/1	650.00	AG.LIME.TRUCKG/3	3,225.00
Gray,D/1	268.00	Arnold.Motor/4	29.18
Hala,J/5	1,417.00	Basepoint Build/1	1,354.20
Hatch,R/2	1,383.00	BDH/3	1,924.40
HAVELKA,B/1	696.00	Bly,Josh/3	5,050.00
HESSENIUS,R/1	616.00	Central.IA.Hsng/1	55.04
Hilltop.Village/2	470.00	Cline, Troy/9	2,975.00
Ho Phi Nguyen/1	550.00	Columbus Metro/1	49.72
HOWARD,J/1	164.00	Electric.Supply/4	589.65
Inman, Jeffrey/1	142.00	EO Johnson Co/1	6.14
JB.I.COOP.Assn/4	1,387.00	First Data Corp/4	499.81
JDL.Rental.Coop/1	483.00	FirstIntBank/46	5,966.84
Jimenez, Luis/1	358.00	Gentry,S/2	36,025.00
Kading Prop LLC/4	2,590.00	Greazel, Lance/1	40.00
Kramer, Marcia/1	404.00	Grewell Lawn/1	1,985.00
Lawthers.Prop.M/1	166.00	Heart.of.Iowa/15	3,994.82
Linton, Tyler/2	629.00	Hegos, Deri/1	53.00
LUENSE,B/6	2,493.00	Hogeland.Auto.P/3	880.00
Lusoma LLC/2	626.00	IA DIAL/1	40.00
MD Kruse Enter/1	44.00	IMON/1	134.99
MOJO Rentals/1	344.00	Jetco Inc/1	370.00
Moore, Michelle/1	295.00	Karl of Mtown/1	895.00
Mtown Lofts LLC/14	4,932.00	Language Line/1	410.82
Mtown/Westown/19	5,713.00	Legg,R/1	40.00
Ndihokubwayo,L/2	796.00	M.Co.Recorder/1	41.00
North.Tama.Hsg/1	51.00	Mattingly, Ruth/1	40.00
Oetker,D/2	117.00	Menards/6	40.45
Park.Elms,LLC/3	968.00	One Source Aqu/1	19.00
PHR Properties/1	320.00	Patton,Camille/1	46.00
Plymat Jr, Will/1	546.00	Petermeier,J/1	40.00
Premier/4	1,727.00	Racom.Corp/1	1,312.50
PremierIowaCity/5	1,408.00	Ranson, Robert/1	40.00
Pyramid Propert/3	778.00	Schumacher.Elev/1	508.68
RA.Rental.Prop/2	1,027.00	Scrap and More/1	475.00
Redborg,Kirsten/1	376.00	Seiler Instrum/1	710.00
Reed,T/1	422.00	Sign.Creations/1	190.00
Rice, Quinton/1	403.00	Specified Desig/1	252.00
River.Birch/1	298.00	Squires,Chris/1	84.00
River.Oaks/3	1,158.00	Stiegelmeier, C/1	10.00
RMB Cooperative/2	1,501.00	T-Mobile/36	3,318.46
Rural Revival/1	320.00	Valdez, Elicia/1	7.00
Sanchez-Sant, J/1	851.00	Waterloo.Housng/1	62.79
Schmidt,M/1	649.00	Weatherly,Cass/1	31.00
Superior.Rental/5	1,251.00	Webb, Carol/1	480.00
Sweet Pea/2	846.00	Wickham,Michael/1	750.00
Swiff, Scott/1	422.00	WW.Grainger/2	294.86
Tallcorn.Tower/11	3,271.00	Supplies/Parts	
TOWN.APARTMENT/2	692.00	Acco Unlimited/2	4,324.74
TTL.C.Hsg/2	696.00	AdlandEngraving/1	55.00
Walker, Angela/1	308.00	AIR MACH INC/1	4,275.00
Waterloo.Housng/1	601.00	Airgas USA Inc/1	330.76

BILL LIST 09/14/26

Ann.Alteration/1	50.00	FirstIntBank/4	1,091.95
Arnold.Motor/20	1,441.10	Hy-Vee-Johnston/2	5,572.00
BDH/6	2,031.13	May,Jordan/2	20.00
Bitumnous/9	4,992.04	Molitor,Jacob/1	40.00
Bound.Tree.Medi/1	1,013.17	Utilities	
Browns.Shoe.Fit/1	184.99	Alliant.Energy/63	69,128.05
Carrico.Aq.Rs/1	59.20	I.R.U.A./1	204.56
Cessford/1	200.20	Mtwn.Wtrwrks/1	109.10
Chamber.Commerc/2	1,000.00	WoodRiver.Enrgy/3	139.17
City.Laundering/4	299.42	YSS Grants Bill/1	703.77
Cntrl.IA.Farm/4	493.99	Wage Assignment	
CTI Ready Mix/8	6,752.75	American.Educa./2	128.82
Eurofins Enviro/1	320.50	Collection.Svs./13	2,080.97
Farber Bag & Su/1	66.02	Colonial.Life/2	542.98
Fastenal Co/1	58.30	Fidelity Securi/4	999.99
FirstIntBank/150	26,599.84	FirstIntBank/1	9.57
Galls.LLC/12	1,991.37	I.P.E.R.S./9	105,255.81
Gillig.LLC/5	3,196.27	I.R.S./12	214,370.01
Golden.West.Ind/1	380.98	IA Dept Revenue/2	97.44
Grimes.Asphalt/1	2,123.50	IA.Treasurer/4	32,136.44
HUPP.ELECTRIC.M/1	1,855.24	M.F.P.R.S.I./4	145,552.45
HyVee.Accts/9	206.37	Mission Square/25	47,153.81
IA.Prison.Ind/9	990.01	TotalAdmin.Serv/4	8,682.90
Jetco Inc/1	3,661.00	United.Way/4	484.00
Karl of Mtown/2	617.00	Total/1185	4,002,902.24
Larrys Towing/2	320.00		
MacQueen/1	62.98		
Marsh.Co.Engr/24	25,133.69		
Martin.Marietta/5	1,245.84		
Menards/18	568.51		
Michael Todd&Co/1	394.00		
Microbac Lab/1	94.25		
Midland.Scienti/8	4,829.55		
Mobotrex.Inc./1	528.00		
National Sign C/4	1,527.06		
Nebraska Air/1	1,008.11		
Nelson.Fab/2	469.15		
Nutrien.Ag.Sol/2	4,910.00		
Office.Express/2	133.99		
PECH Optical/1	169.81		
Plumb.Supply/2	309.18		
QSC LLC/1	1,578.02		
Racom.Corp/1	131.25		
ReconPowerBikes/1	5,396.00		
Reliant.Fire.Ap/3	2,256.88		
RICOH.USA.INC/2	144.32		
Spahn.Rose.Lmbr/1	27.58		
Thiesens.Supply/23	1,206.95		
Tri.State.Lock/1	80.00		
Vanwall Equip/2	458.44		
WW.Grainger/1	85.00		
Zep.Sales/1	112.00		
Ziegler/1	-161.30		
Travel/Training			
CottinghamButle/2	300.00		

BILL LIST 09/14/26

Account Number	Vendor Name	Description (Item)	Amount
184.5030.5242.000	201 E Main MT LLC	Rent Assistance	\$ 436.00
184.5030.5242.000	201 E Main MT LLC	Rent Assistance	\$ 256.00
184.5030.5242.000	201 E Main MT LLC	Rent Assistance	\$ 461.00
184.5030.5242.000	201 E Main MT LLC	Rent Assistance	\$ 455.00
184.5030.5242.000	201 E Main MT LLC	Rent Assistance	\$ 447.00
184.5030.5242.000	201 E Main MT LLC	Rent Assistance	\$ 445.00
184.5030.5242.000	201 E Main MT LLC	Rent Assistance	\$ 437.00
184.5030.5242.000	201 E Main MT LLC	Rent Assistance	\$ 435.00
184.5030.5242.000	201 E Main MT LLC	Rent Assistance	\$ 437.00
184.5030.5242.000	201 E Main MT LLC	Rent Assistance	\$ 310.00
184.5030.5242.000	201 E Main MT LLC	Rent Assistance	\$ 305.00
184.5030.5242.000	201 E Main MT LLC	Rent Assistance	\$ 237.00
184.5030.5242.000	201 E Main MT LLC	Rent Assistance	\$ 158.00
184.5030.5242.000	201 E Main MT LLC	Rent Assistance	\$ 416.00
184.5030.5242.000	6 Pack Properties LLC	Rent Assistance	\$ 354.00
001.1010.5342.000	AAA Septic Service Inc	Portabel toilet rental at range	\$ 90.00
001.4030.5342.000	AAA Septic Service Inc	West End Park Portable Toilet	\$ 175.00
690.8050.5380.000	AAA Septic Service Inc	Portable toilet rental 9/1-9/30/26	\$ 100.00
001.4045.5607.000	Acco Unlimited	Aquatic Center liquid chlorinating solution	\$ 3,078.34
001.4045.5607.000	Acco Unlimited	Aquatic Center liquid chlorinating solution	\$ 1,246.40
184.5030.5242.000	Ackley Housing Inc	Rent Assistance	\$ 255.00
184.5030.5242.000	Ackley Housing Inc	Rent Assistance	\$ 136.00
184.5030.5242.000	Ackley Housing Inc	Rent Assistance	\$ 249.00
184.5030.5242.000	Ackley Housing Inc	Rent Assistance	\$ 314.00
184.5030.5242.000	Ackley Housing Inc	Rent Assistance	\$ 176.00
184.5030.5242.000	Adey LLC	Rent Assistance	\$ 665.00
001.1050.5600.000	Adland Engraving	Recognition Plaque	\$ 55.00
001.4030.5386.000	AG LIME TRUCKING & MOWING INC	August Mowing	\$ 1,100.00
001.4045.5386.000	AG LIME TRUCKING & MOWING INC	August Mowing	\$ 1,250.00
110.2010.5386.000	AG LIME TRUCKING & MOWING INC	August Mowing	\$ 875.00
610.8015.5718.000	Air Mach Inc	Air dryer - compressor building	\$ 4,275.00
610.8015.5603.000	Airgas USA Inc	Lab - Argon	\$ 330.76
001.1030.5481.000	Alliant Energy	25 N Center St Civil Defense Sirens	\$ 100.00
001.1030.5481.000	Alliant Energy	7 W State St tornado siren	\$ 57.05
001.1099.5481.000	Alliant Energy	909 S 2nd St Fire & Police Bldg	\$ 14,871.15
001.1099.5482.000	Alliant Energy	909 S 2nd St Fire & Police Bldg	\$ 214.50
001.2020.5481.000	Alliant Energy	NE corner S 1st Ave / Church St parking lot	\$ 166.01
001.2080.5481.000	Alliant Energy	2651 170th St Runway lights	\$ 275.71
001.2080.5481.000	Alliant Energy	2651 170th St TEMP	\$ 996.14
001.4010.5481.000	Alliant Energy	Library - 105 W Boone St	\$ 6,240.49
001.4030.5481.000	Alliant Energy	311 E Anson St Park	\$ 22.15
001.4030.5481.000	Alliant Energy	802 S 3rd St Skate Park	\$ 21.97
001.4030.5481.000	Alliant Energy	915 S 4th Ave Anson Park	\$ 27.80
001.4030.5481.000	Alliant Energy	1103 S 12th St Judge Park	\$ 28.89
001.4030.5481.000	Alliant Energy	Highland Acres Rd	\$ 35.61
001.4030.5481.000	Alliant Energy	Broadmore Assistance League	\$ 14.76
001.4030.5481.000	Alliant Energy	220 N 13th St Rest room	\$ 48.89
001.4030.5481.000	Alliant Energy	N 13th St	\$ 169.50
001.4030.5481.000	Alliant Energy	802 S 3rd St Skate Park	\$ 950.29
001.4030.5481.000	Alliant Energy	Arnolds Park	\$ 13.46
001.4030.5481.000	Alliant Energy	516 N 3rd St Elks Park	\$ 28.07
001.4030.5481.000	Alliant Energy	108 N 2nd Ave Alley - Farmers Market	\$ 32.84
001.4030.5481.000	Alliant Energy	S 3rd Ave Kiwanis Park	\$ 47.80
001.4030.5481.000	Alliant Energy	802 S 3rd St Trailhead	\$ 138.99
001.4045.5481.000	Alliant Energy	212 Washington St Aquatic Center	\$ 8,718.15
001.4065.5481.000	Alliant Energy	10 W State St COLISEUM	\$ 9,123.21
001.4065.5482.000	Alliant Energy	10 W State St COLISEUM	\$ 56.79
001.6050.5481.000	Alliant Energy	24 N Center St Municipal Bldg	\$ 1,189.31
001.6051.5481.000	Alliant Energy	36 N Center St- Carnegie Bldg	\$ 1,615.60
001.6051.5482.000	Alliant Energy	36 N Center St- Carnegie Bldg	\$ 33.53
110.2030.5481.000	Alliant Energy	MARSHALLTOWN	\$ 19,271.61
110.2030.5481.000	Alliant Energy	407 Player St Bridge Light	\$ 79.01
110.2030.5481.000	Alliant Energy	3098 Lincoln Way sign	\$ 23.78
110.2030.5481.000	Alliant Energy	6 S 2nd St Alley	\$ 45.73
110.2030.5481.000	Alliant Energy	36 W Main St alley	\$ 38.57
110.2030.5481.000	Alliant Energy	106 S Center St metered	\$ 29.63
110.2030.5481.000	Alliant Energy	1707 Laurel Dr Viaduct Light	\$ 33.68
110.2030.5481.000	Alliant Energy	N 13th Street lights	\$ 131.45

110.2030.5481.000	Alliant Energy	25 N 13th St	\$	71.34
110.2030.5481.000	Alliant Energy	17 N Center St metered	\$	105.33
110.2030.5481.000	Alliant Energy	207 W Main St	\$	51.35
110.2030.5481.000	Alliant Energy	220 E Main St alley	\$	67.50
110.2030.5481.000	Alliant Energy	404 1/2 S Center St Viaduct	\$	45.10
110.2030.5481.000	Alliant Energy	36 E Main St Alley	\$	182.98
110.2030.5481.000	Alliant Energy	Market St Bridge lights	\$	87.72
110.2040.5481.000	Alliant Energy	219 Westwood flashing lights	\$	25.74
110.2040.5481.000	Alliant Energy	S Center St & South St	\$	47.80
110.2040.5481.000	Alliant Energy	E Anson St & 4th Ave	\$	25.74
110.2040.5481.000	Alliant Energy	5 N 5th St & State St	\$	25.74
110.2040.5481.000	Alliant Energy	E Anson St & 3rd Ave	\$	65.86
110.2040.5481.000	Alliant Energy	S Center St & Anson	\$	77.15
110.2040.5481.000	Alliant Energy	W High St & S 6th St	\$	29.54
110.2040.5481.000	Alliant Energy	S 1st Ave & E Anson St	\$	63.67
110.2040.5481.000	Alliant Energy	S 3rd Ave & Linn St	\$	134.69
110.2040.5481.000	Alliant Energy	N Center St & Church St	\$	45.10
110.2040.5481.000	Alliant Energy	S Center St & Olive St	\$	57.82
110.2040.5481.000	Alliant Energy	S 6th St & Olive St	\$	39.55
110.2040.5481.000	Alliant Energy	Westwood Dr & Center St	\$	38.67
110.2040.5481.000	Alliant Energy	S Center St & Boone St	\$	41.18
110.2040.5481.000	Alliant Energy	N 3rd Ave & State St	\$	152.74
110.2040.5481.000	Alliant Energy	S Center St & Linn St	\$	43.78
142.4030.5481.000	Alliant Energy	800 S 6th St Softball Diamonds	\$	1,265.02
610.8016.5481.000	Alliant Energy	S 2nd St & Player St	\$	524.03
610.8016.5481.000	Alliant Energy	N 22nd St	\$	194.28
740.8065.5481.000	Alliant Energy	301 N 18TH AVE LIFTSTATION	\$	726.51
999.1121.000	American Education Services	Wage Withholding	\$	64.41
999.1121.000	American Education Services	Wage Withholding	\$	64.41
001.1090.5331.000	Animal Rescue League	Taking care of animals within city limits	\$	7,799.00
001.1010.5132.000	ANN'S ALTERATIONS & GIFTS	Patrol clothing alterations	\$	50.00
001.1010.5565.000	Arnold Motor Supply	Car parts	\$	337.33
001.1010.5565.000	Arnold Motor Supply	Highlander filter	\$	5.06
001.1050.5600.000	Arnold Motor Supply	Oil Dry	\$	123.50
110.2010.5565.000	Arnold Motor Supply	battery deposits	\$	(168.00)
110.2010.5565.000	Arnold Motor Supply	Air filters	\$	138.62
110.2010.5565.000	Arnold Motor Supply	Air filter	\$	24.31
110.2010.5565.000	Arnold Motor Supply	Auto battery	\$	165.55
110.2010.5565.000	Arnold Motor Supply	Auto battery	\$	161.99
110.2010.5565.000	Arnold Motor Supply	Auto battery	\$	143.03
110.2010.5565.000	Arnold Motor Supply	Street #7 battery	\$	173.18
110.2010.5600.000	Arnold Motor Supply	Paper towels	\$	88.50
110.2030.5410.000	Arnold Motor Supply	Auxiliary control fuse Digger Derick	\$	7.30
110.2030.5410.000	Arnold Motor Supply	Auxiliary control fuse Digger Derick	\$	7.29
110.2040.5410.000	Arnold Motor Supply	Auxiliary control fuse Digger Derick	\$	7.29
110.2040.5410.000	Arnold Motor Supply	Auxiliary control fuse Digger Derick	\$	7.30
110.2060.5565.000	Arnold Motor Supply	Truck Emergency Lighting Repair More Parts-Red Eng	\$	59.68
110.2060.5565.000	Arnold Motor Supply	Truck Emergency Lighting Repair Parts - Red Engr T	\$	59.68
610.8016.5565.000	Arnold Motor Supply	Pavement saw trailer battery core credit	\$	(14.40)
610.8016.5565.000	Arnold Motor Supply	Pavement saw trailer battery	\$	69.51
690.8050.5565.000	Arnold Motor Supply	Credit for Clamp-v-band 4in CAT	\$	(109.56)
690.8050.5565.000	Arnold Motor Supply	Clamp band	\$	109.56
690.8050.5565.000	Arnold Motor Supply	Model 9 dryer crtrdg	\$	36.82
740.8065.5565.000	Arnold Motor Supply	Pavement saw trailer battery core credit	\$	(9.60)
740.8065.5565.000	Arnold Motor Supply	Pavement saw trailer battery	\$	46.34
184.5030.5242.000	Arrowhead Homes LLC	Rent Assistance	\$	321.00
110.2010.5750.000	Ascendance Trucks Midwest LLC	Street Div Dump Truck w Snow Plow	\$	112,801.00
610.8015.5980.000	August, Jennifer	Sewer refund water new grass	\$	66.57
001.1050.5410.000	Basepoint Building Automations	Door Repair New IQ Control	\$	1,354.20
001.1010.5347.000	BDH INFORMATION TECHNOLOGY LLC	Block time of hourse PD 25%	\$	1,266.25
001.1010.5347.000	BDH INFORMATION TECHNOLOGY LLC	PD Covert internet service	\$	79.34
001.1010.5347.000	BDH INFORMATION TECHNOLOGY LLC	PD 4500 Veeam backup & recovery	\$	57.00
001.1010.5703.000	BDH INFORMATION TECHNOLOGY LLC	Computer keyboard for PD car 511	\$	248.80
001.4010.5347.000	BDH INFORMATION TECHNOLOGY LLC	Block time of hours Library 12.5%	\$	633.13
001.4010.5612.000	BDH INFORMATION TECHNOLOGY LLC	Dual monitor mount install	\$	68.99
001.6050.5410.000	BDH INFORMATION TECHNOLOGY LLC	Replace failed emerson room camera	\$	190.00
001.6070.5347.000	BDH INFORMATION TECHNOLOGY LLC	Block time of hours 62.5%	\$	3,165.62
001.6070.5347.000	BDH INFORMATION TECHNOLOGY LLC	Parks remote monitoring & management	\$	30.00
001.6070.5347.000	BDH INFORMATION TECHNOLOGY LLC	Finance remote monitoring & management	\$	30.00
001.6070.5347.000	BDH INFORMATION TECHNOLOGY LLC	City Council remote monitoring & management	\$	40.00
001.6070.5347.000	BDH INFORMATION TECHNOLOGY LLC	Housing remote monitoring & management	\$	70.00

001.6070.5347.000	BDH INFORMATION TECHNOLOGY LLC	Admin remote monitoring & management	\$ 20.00
001.6070.5347.000	BDH INFORMATION TECHNOLOGY LLC	Police remote monitoring & management	\$ 350.00
001.6070.5347.000	BDH INFORMATION TECHNOLOGY LLC	Veeam Backup & recovery	\$ 209.00
001.6070.5347.000	BDH INFORMATION TECHNOLOGY LLC	SIEM server device monitoring service	\$ 200.00
001.6070.5347.000	BDH INFORMATION TECHNOLOGY LLC	Standalone Advanced SPAM/virus emailing	\$ 192.50
001.6070.5347.000	BDH INFORMATION TECHNOLOGY LLC	Fire dept remote monitoring & management	\$ 155.00
001.6070.5347.000	BDH INFORMATION TECHNOLOGY LLC	Coliseum remote monitoring & management	\$ 40.00
001.6070.5347.000	BDH INFORMATION TECHNOLOGY LLC	Library remote monitoring & management	\$ 140.00
001.6070.5347.000	BDH INFORMATION TECHNOLOGY LLC	City Hall remote monitoring & management	\$ 125.00
001.6070.5347.000	BDH INFORMATION TECHNOLOGY LLC	SIEM infrastructure device monitoring	\$ 650.00
001.6070.5347.000	BDH INFORMATION TECHNOLOGY LLC	SentinelOne EDR monthly subsc	\$ 152.00
001.6070.5347.000	BDH INFORMATION TECHNOLOGY LLC	Aquatic Ctr remote monitoring & management	\$ 20.00
001.6070.5612.000	BDH INFORMATION TECHNOLOGY LLC	Set up replacement PSB firewall	\$ 350.34
001.6070.5612.000	BDH INFORMATION TECHNOLOGY LLC	Replace failed drives in exsrv01	\$ 588.00
001.6070.5704.000	BDH INFORMATION TECHNOLOGY LLC	Renew Acrobat subscription 8-4-26 - 8-3-27	\$ 1,439.40
030.6070.5703.000	BDH INFORMATION TECHNOLOGY LLC	Set up inspect-25-2 PC	\$ 480.00
110.2010.5347.000	BDH INFORMATION TECHNOLOGY LLC	PW remote monitoring & management	\$ 50.00
110.2010.5347.000	BDH INFORMATION TECHNOLOGY LLC	PW 4500 backup & recovery	\$ 19.00
110.2060.5347.000	BDH INFORMATION TECHNOLOGY LLC	PW 4500 backup & recovery	\$ 19.00
110.2060.5347.000	BDH INFORMATION TECHNOLOGY LLC	Engineering remote monitoring & management	\$ 70.00
610.8015.5347.000	BDH INFORMATION TECHNOLOGY LLC	WPCP remote monitoring & management	\$ 75.00
610.8015.5347.000	BDH INFORMATION TECHNOLOGY LLC	WPCP Veeam backup & recovery	\$ 19.00
690.8050.5347.000	BDH INFORMATION TECHNOLOGY LLC	Transit remote monitoring & management	\$ 20.00
750.8070.5410.000	BDH INFORMATION TECHNOLOGY LLC	Replace compost camera	\$ 295.00
750.8070.5718.000	BDH INFORMATION TECHNOLOGY LLC	Add additional compost camera	\$ 295.00
001.6021.5230.000	Berens-Tate Consulting Group	Series 2021 Arbitrage calculation	\$ 3,750.00
881.1010.5230.000	BERNIE LOWE & ASSOC Inc	411 Medical Claims	\$ 16.34
881.1010.5339.000	BERNIE LOWE & ASSOC Inc	411 Medical Claims	\$ 566.63
881.1050.5230.000	BERNIE LOWE & ASSOC Inc	411 Medical Claims	\$ 37.82
881.1050.5339.000	BERNIE LOWE & ASSOC Inc	411 Medical Claims	\$ 746.72
110.2010.5617.000	Bitumnous Materials & Supply	emulsified asphalt	\$ 542.57
110.2010.5617.000	Bitumnous Materials & Supply	emulsified asphalt	\$ 475.57
110.2010.5617.000	Bitumnous Materials & Supply	emulsified asphalt	\$ 377.94
110.2010.5617.000	Bitumnous Materials & Supply	emulsified asphalt	\$ 505.93
110.2010.5617.000	Bitumnous Materials & Supply	emulsified asphalt	\$ 536.20
110.2010.5617.000	Bitumnous Materials & Supply	Amiseal	\$ 1,023.96
110.2010.5617.000	Bitumnous Materials & Supply	Emulsion for dura patch machine	\$ 524.19
110.2010.5617.000	Bitumnous Materials & Supply	Emulsion for dura patch machine	\$ 505.88
110.2010.5617.000	Bitumnous Materials & Supply	Emulsion for dura patch machine	\$ 499.80
184.5030.5242.000	BJ&J LLC	Rent Assistance	\$ 269.00
184.5030.5242.000	Blood, Alex	Rent Assistance	\$ 443.00
001.4030.5386.000	Bly, Josh	August Mowing	\$ 4,450.00
110.2010.5386.000	Bly, Josh	August Mowing	\$ 225.00
740.8067.5386.000	Bly, Josh	August Mowing	\$ 375.00
184.5030.5242.000	Borota, Kent	Rent Assistance	\$ 412.00
363.2010.5342.000	BOULDER CONTRACTING LLC	Center St Viaduct Const 8/7/26-8/25/26	\$ 311,222.50
001.1050.5630.000	Bound Tree Medical LLC	Gloves, Stat Padz, OB Kit	\$ 1,013.17
184.5030.5242.000	Brinkmeyer, Robert	Rent Assistance	\$ 305.00
184.5030.5242.000	Brodin, Chris	Rent Assistance	\$ 57.00
184.5030.5242.000	Brown, Larry	Rent Assistance	\$ 332.00
110.2030.5132.000	BROWNS SHOE FIT CO	Work boots PPE non-taxable	\$ 184.99
184.5030.5242.000	Brummel, Michael	Rent Assistance	\$ 105.00
184.5030.5242.000	BTG Rental LLC	Rent Assistance	\$ 237.00
184.5030.5242.000	Buckaroo LLC	Rent Assistance	\$ 454.00
184.5030.5242.000	Buckaroo LLC	Rent Assistance	\$ 477.00
340.4030.5233.000	CALHOUN-BURNS AND ASSOCIATES, INC	Construction Phase Engr - IRET B2-B5	\$ 7,199.63
001.4045.5611.000	Carrico Aquatic Resources Inc	Labcock Valve	\$ 59.20
001.4030.5562.000	Central Iowa Farm Store Inc	Hydro Drive Inspection and Parts	\$ 174.19
001.4030.5562.000	Central Iowa Farm Store Inc	Parts	\$ 83.78
001.4030.5562.000	Central Iowa Farm Store Inc	Parts	\$ 114.39
001.4030.5562.000	Central Iowa Farm Store Inc	Parts	\$ 121.63
184.5030.5238.000	Central Iowa Regional Housing	Hud Admin90126	\$ 55.04
184.5030.5242.000	Central Iowa Regional Housing	Rent Assistance	\$ 514.00
184.5030.5242.000	CENTRAL IOWA RESIDENTIAL SERV INC	Rent Assistance	\$ 72.00
184.5030.5242.000	CENTRAL IOWA RESIDENTIAL SERV INC	Rent Assistance	\$ 90.00
184.5030.5242.000	CENTRAL IOWA RESIDENTIAL SERV INC	Rent Assistance	\$ 102.00
184.5030.5242.000	CENTRAL IOWA RESIDENTIAL SERV INC	Rent Assistance	\$ 110.00
184.5030.5242.000	CENTRAL IOWA RESIDENTIAL SERV INC	Rent Assistance	\$ 7.00
001.4010.5342.000	Central States Roofing	Roof repairs library	\$ 318.77
110.2010.5620.000	Cessford	Street dept crushed rock	\$ 200.20
110.2010.5342.000	CITY LAUNDERING COMPANY	cleaning and insurance	\$ 168.59

110.2010.5342.000	CITY LAUNDERING COMPANY	cleaning and insurance	\$ 183.64
110.2010.5600.000	CITY LAUNDERING COMPANY	supplies	\$ 148.55
110.2010.5600.000	CITY LAUNDERING COMPANY	supplies	\$ 70.87
690.8050.5132.000	CITY LAUNDERING COMPANY	Transit dept - uniform cleaning	\$ 40.00
690.8050.5132.000	CITY LAUNDERING COMPANY	Transit dept - uniform cleaning	\$ 40.00
001.4010.5342.000	Clement Home Services	Replace mini-split system in the library mechanica	\$ 4,500.00
001.1075.5261.000	Cline, Troy	Yard Clean Up- multiple addresses	\$ 215.00
001.1075.5263.000	Cline, Troy	City owned mowing - multiple addresses	\$ 740.00
001.1075.5263.000	Cline, Troy	City Mowing Multiple Addresses	\$ 640.00
001.1075.5263.000	Cline, Troy	City Mowing Multiple Addresses	\$ 1,190.00
001.1075.5263.000	Cline, Troy	City mowing-multiple addresses	\$ 715.00
001.1075.5263.000	Cline, Troy	City Mowing - Multiple addresses	\$ 780.00
001.1075.5263.000	Cline, Troy	1303 E Madison	\$ 360.00
001.1075.5263.000	Cline, Troy	City mowing-multiple addresses	\$ 560.00
001.1075.5263.000	Cline, Troy	over payment	\$ (2,225.00)
184.5030.5242.000	Clock Tower Senior LP	Rent Assistance	\$ 205.00
184.5030.5242.000	Clock Tower Senior LP	Rent Assistance	\$ 175.00
184.5030.5242.000	Clock Tower Senior LP	Rent Assistance	\$ 466.00
184.5030.5242.000	Clock Tower Senior LP	Rent Assistance	\$ 379.00
184.5030.5242.000	Clock Tower Senior LP	Rent Assistance	\$ 651.00
184.5030.5242.000	Clock Tower Senior LP	Rent Assistance	\$ 313.00
184.5030.5242.000	Clock Tower Senior LP	Rent Assistance	\$ 261.00
184.5030.5242.000	Clock Tower Senior LP	Rent Assistance	\$ 285.00
184.5030.5242.000	Clock Tower Senior LP	Rent Assistance	\$ 226.00
001.6070.5347.000	Cloudiance Inc.	Zimbra support renewal 10/29/26-10/28/27	\$ 2,690.00
184.5030.5242.000	CMHC Investments LLC	Rent Assistance	\$ 192.00
999.1121.000	Collection Services Center	Child Support	\$ 60.24
999.1121.000	Collection Services Center	Child Support	\$ 23.00
999.1121.000	Collection Services Center	Child Support	\$ 102.11
999.1121.000	Collection Services Center	Child Support	\$ 271.95
999.1121.000	Collection Services Center	Child Support	\$ 139.77
999.1121.000	Collection Services Center	Child Support	\$ 423.86
999.1121.000	Collection Services Center	Child Support	\$ 70.61
999.1121.000	Collection Services Center	Child Support	\$ 139.77
999.1121.000	Collection Services Center	Child Support	\$ 423.86
999.1121.000	Collection Services Center	Child Support	\$ 70.61
999.1121.000	Collection Services Center	Child Support	\$ 60.24
999.1121.000	Collection Services Center	Child Support	\$ 23.00
999.1121.000	Collection Services Center	Child Support	\$ 271.95
999.1133.000	Colonial Life	COLONIAL LIFE INSURANCE	\$ 271.49
999.1133.000	Colonial Life	COLONIAL LIFE INSURANCE	\$ 271.49
184.5030.5238.000	Columbus Metropolitan Housing Authority	Hud Admin90126	\$ 49.72
184.5030.5242.000	Columbus Metropolitan Housing Authority	Rent Assistance	\$ 1,518.00
364.2012.5342.000	CONSTRUCT INC	E Main/Center St Recon- Base+Alt 1 & 2 8/1-8/31/26	\$ 340,742.77
001.1071.5475.000	Cottingham & Butler Insurance Services Inc	Civil Service Process - Housing Inspector	\$ 150.00
184.5030.5475.000	Cottingham & Butler Insurance Services Inc	Civil Service Process - Housing Inspector	\$ 150.00
884.7010.5337.000	Covenant Workplace Solutions	EAP Services	\$ 432.25
184.5030.5242.000	Crestview Apts LLC	Rent Assistance	\$ 422.00
184.5030.5242.000	Crestview Apts LLC	Rent Assistance	\$ 424.00
184.5030.5242.000	Crestview Apts LLC	Rent Assistance	\$ 435.00
184.5030.5242.000	Crestview Apts LLC	Rent Assistance	\$ 436.00
184.5030.5242.000	Crestview Apts LLC	Rent Assistance	\$ 441.00
184.5030.5242.000	Crestview Apts LLC	Rent Assistance	\$ 443.00
184.5030.5242.000	Crestview Apts LLC	Rent Assistance	\$ 455.00
184.5030.5242.000	Crestview Apts LLC	Rent Assistance	\$ 526.00
184.5030.5242.000	Crestview Apts LLC	Rent Assistance	\$ 650.00
184.5030.5242.000	Crestview Apts LLC	Rent Assistance	\$ 416.00
184.5030.5242.000	Crestview Apts LLC	Rent Assistance	\$ 416.00
184.5030.5242.000	Crestview Apts LLC	Rent Assistance	\$ 412.00
184.5030.5242.000	Crestview Apts LLC	Rent Assistance	\$ 416.00
184.5030.5242.000	Crestview Apts LLC	Rent Assistance	\$ 416.00
184.5030.5242.000	Crestview Apts LLC	Rent Assistance	\$ 412.00
184.5030.5242.000	Crestview Apts LLC	Rent Assistance	\$ 368.00
184.5030.5242.000	Crestview Apts LLC	Rent Assistance	\$ 240.00
184.5030.5242.000	Crestview Apts LLC	Rent Assistance	\$ 221.00
184.5030.5242.000	Crestview Apts LLC	Rent Assistance	\$ 62.00
184.5030.5242.000	Crestview Apts LLC	Rent Assistance	\$ 181.00
110.2010.5617.000	CTI Ready Mix Inc	Center and Boone	\$ 1,472.50
110.2010.5617.000	CTI Ready Mix Inc	Center and Boone	\$ 1,647.00
110.2010.5617.000	CTI Ready Mix Inc	9th St & Summit	\$ 603.25
110.2050.5600.000	CTI Ready Mix Inc	6 concrete blocks 2x2x6 for salt building	\$ 900.00

740.8065.5600.000	CTI Ready Mix Inc	6th Ave & Nevada storm sewer repair	\$	283.00
740.8065.5600.000	CTI Ready Mix Inc	6th Ave & Nevada St storm sewer repair	\$	420.25
740.8065.5600.000	CTI Ready Mix Inc	Nelson Rd & Reynolds Rd storm sewer repair	\$	649.00
740.8065.5600.000	CTI Ready Mix Inc	Nelson Rd & Reynolds Rd storm sewer repair	\$	777.75
184.5030.5242.000	D & D RENTALS INC	Rent Assistance	\$	1,012.00
184.5030.5242.000	D & D RENTALS INC	Rent Assistance	\$	161.00
184.5030.5242.000	D & D RENTALS INC	Rent Assistance	\$	316.00
184.5030.5242.000	D & D RENTALS INC	Rent Assistance	\$	600.00
184.5030.5242.000	D & D RENTALS INC	Rent Assistance	\$	63.00
130.2080.5342.000	Dans Overhead Doors & More	Airport Wind Storm - Hangar Door Removal / Operat	\$	22,162.95
184.5030.5242.000	Daters, Toni Rae	Rent Assistance	\$	401.00
184.5030.5242.000	Douglas Terrace Apartments LLC	Rent Assistance	\$	303.00
184.5030.5242.000	Douglas Terrace Apartments LLC	Rent Assistance	\$	681.00
184.5030.5242.000	Ealy, Carol	Rent Assistance	\$	523.00
001.1010.5410.000	Electric Supply of Marshalltown	Repairs to PD shooting range elec service	\$	6.70
001.1099.5410.000	Electric Supply of Marshalltown	Dimmer switches for Police & Fire Bldg.	\$	320.00
110.2030.5410.000	Electric Supply of Marshalltown	Contactor for street lights S 3rd St. viaduct	\$	92.95
110.2030.5410.000	Electric Supply of Marshalltown	New handhold for street lighting 3rd/6th St	\$	170.00
110.2010.5344.000	EO Johnson Co Inc	PW Bldg copies	\$	117.41
110.2010.5360.000	EO Johnson Co Inc	Shipping	\$	6.14
184.5030.5344.000	EO Johnson Co Inc	Housing copies Contract KB-CONT3935-01	\$	10.09
690.8050.5344.000	EO Johnson Co Inc	PW Bldg copies	\$	96.06
184.5030.5242.000	EPC LLC	Rent Assistance	\$	357.00
184.5030.5242.000	EPC LLC	Rent Assistance	\$	351.00
184.5030.5242.000	Etter, Connie	Rent Assistance	\$	598.00
184.5030.5242.000	Eubanks, Chad	Rent Assistance	\$	338.00
610.8015.5603.000	Eurofins Environment Testing America Holdngs Inc	Lab analysis-SBR #1-2 Ecoli, Aug. #1-5	\$	320.50
110.2010.5600.000	Farber Bag & Supply Co	Empty sand bags	\$	66.02
110.2010.5600.000	Fastenal Co	fasteners	\$	58.30
999.1125.000	Fidelity Security Life Insurance	VISION INSURANCE	\$	142.91
999.1125.000	Fidelity Security Life Insurance	VISION INSURANCE	\$	360.67
999.1125.000	Fidelity Security Life Insurance	VISION INSURANCE	\$	353.50
999.1125.000	Fidelity Security Life Insurance	VISION INSURANCE	\$	142.91
001.4010.5215.000	First Data Corporation/Clover	Library credit card fees	\$	44.73
001.4010.5215.000	First Data Corporation/Clover	Library credit card fees	\$	32.52
001.6021.5215.000	First Data Corporation/Clover	Finance credit card fees	\$	119.87
001.6021.5215.000	First Data Corporation/Clover	Finance credit card fees	\$	302.69
001.1010.4875.000	First Interstate Bank	rebate from bank/vendor	\$	(1.18)
001.1010.5132.000	First Interstate Bank	AMAZON TOILET BRUSH AND CLOTHING	\$	97.00
001.1010.5132.000	First Interstate Bank	Iowa Prison - ILEA clothing	\$	230.00
001.1010.5132.000	First Interstate Bank	Iowa Prison ILEA clothing	\$	230.00
001.1010.5132.000	First Interstate Bank	Zero9 radio cases	\$	124.98
001.1010.5132.000	First Interstate Bank	Tactical Gear patrol pants	\$	87.15
001.1010.5132.000	First Interstate Bank	Armor Express LBV carrier	\$	208.28
001.1010.5230.000	First Interstate Bank	Guardian Alliance Background checks	\$	65.00
001.1010.5230.000	First Interstate Bank	Guardian Alliance background checks	\$	250.00
001.1010.5230.000	First Interstate Bank	Kodex info request	\$	25.00
001.1010.5230.000	First Interstate Bank	TLO Transunion intel requests	\$	100.00
001.1010.5280.000	First Interstate Bank	CANVA DIGITAL CREATOR	\$	14.99
001.1010.5280.000	First Interstate Bank	CANVA DIGITAL CREATOR	\$	14.99
001.1010.5360.000	First Interstate Bank	Stamps.com Postage	\$	20.99
001.1010.5360.000	First Interstate Bank	Vistaprint business cards	\$	37.58
001.1010.5370.000	First Interstate Bank	Minuteman printing	\$	42.00
001.1010.5370.000	First Interstate Bank	Vistaprint business cards	\$	41.28
001.1010.5460.000	First Interstate Bank	USPCA certification registration	\$	150.00
001.1010.5460.000	First Interstate Bank	Iowa div IAI basic crime school registration	\$	375.00
001.1010.5464.000	First Interstate Bank	Jethros meal during training	\$	20.00
001.1010.5465.000	First Interstate Bank	Holiday Inn Express hotel during training	\$	359.52
001.1010.5570.000	First Interstate Bank	Beaman Fast Stop fuel during training	\$	80.07
001.1010.5570.000	First Interstate Bank	HyVee fuel during training	\$	55.00
001.1010.5570.000	First Interstate Bank	Rock Stop fuel during training	\$	60.00
001.1010.5600.000	First Interstate Bank	AMAZON WEED TRIMMER	\$	348.99
001.1010.5600.000	First Interstate Bank	AMAZON BATTERIES AND PULL GAUGE	\$	104.88
001.1010.5600.000	First Interstate Bank	AMAZON TOILET BRUSH AND CLOTHING	\$	7.99
001.1010.5600.000	First Interstate Bank	AMAZON PATROL EVIDENCE GLOVES	\$	424.88
001.1010.5600.000	First Interstate Bank	Staples PD kitchen supplies	\$	44.16
001.1010.5600.000	First Interstate Bank	Walmart - fans	\$	125.68
001.1010.5718.000	First Interstate Bank	Copquest tactical launcher	\$	198.45
001.1050.4875.000	First Interstate Bank	CASEYS VENDOR SAVINGS	\$	(0.71)
001.1050.5132.000	First Interstate Bank	RAGTOP FIRE GLOVES	\$	162.85
001.1050.5132.000	First Interstate Bank	TAC GEAR JUNKIE CUSTOM NAME TAPE	\$	24.33

001.1050.5132.000	First Interstate Bank	TAC GEAR JUNKIE FD UNIFORM ITEMS	\$	231.00
001.1050.5280.000	First Interstate Bank	IAAI MEMBERSHIP	\$	288.00
001.1050.5280.000	First Interstate Bank	IAAI FIT RENEWAL	\$	153.00
001.1050.5280.000	First Interstate Bank	IAAA MEMBERSHIP	\$	103.00
001.1050.5280.000	First Interstate Bank	IAAI FIT RENEWAL	\$	128.00
001.1050.5450.000	First Interstate Bank	T-MOBILE FD PHONE BILL	\$	362.99
001.1050.5470.000	First Interstate Bank	CLARION EVENTS TRAINING BOOKS	\$	629.00
001.1050.5470.000	First Interstate Bank	VITAL SOURCE FIRE APP DRIVER BOOK	\$	83.43
001.1050.5570.000	First Interstate Bank	FUEL TRAVEL FOR OFFICERS TRAINING	\$	70.68
001.1050.5570.000	First Interstate Bank	FIRE DEPT FUEL FOR RAGBRAI	\$	24.01
001.1050.5570.000	First Interstate Bank	KWIK STAR FUEL RAGBRAI OPS	\$	12.72
001.1050.5570.000	First Interstate Bank	KWIK STAR RAGBRAI FUEL	\$	4.36
001.1050.5600.000	First Interstate Bank	KWIK STAR RAGBRAI OPS WATER	\$	21.96
001.1050.5600.000	First Interstate Bank	KWIK STAR ICE RAGBRAI OPS	\$	25.96
001.1050.5600.000	First Interstate Bank	KWIK TRIP ICE RAGBRAI OPS	\$	21.96
001.1050.5600.000	First Interstate Bank	MENARDS RAGBRAI WATER BOTTLES	\$	15.96
001.1050.5600.000	First Interstate Bank	STAPLES DISHWASHER PODS	\$	73.18
001.1050.5600.000	First Interstate Bank	STAPLES COFFEE FILTERS/TAPE	\$	30.82
001.1050.5718.000	First Interstate Bank	CMC RESCUE TECH TRAINING EQUIP TOOLS	\$	524.70
001.1050.5718.000	First Interstate Bank	GLOBAL INDUS TECH TRAINING EQUIP TOOLS	\$	361.66
001.1071.5360.000	First Interstate Bank	USPS POSTAGE STAMPS	\$	23.40
001.1071.5360.000	First Interstate Bank	ENDICIA POSTAGE	\$	10.99
001.1071.5360.000	First Interstate Bank	STAMPS.COM	\$	200.00
001.1071.5360.000	First Interstate Bank	USPS FIRST CLASS MAILINGS	\$	108.65
001.1075.5360.000	First Interstate Bank	STAMPS.COM	\$	200.00
001.1075.5360.000	First Interstate Bank	STAMPS.COM	\$	100.00
001.1075.5605.000	First Interstate Bank	AMAZON OFFICE SUPPLIES	\$	45.76
001.1099.5410.000	First Interstate Bank	PARTSTOWN DRINKING FOUNTAIN REPAIR	\$	71.85
001.1099.5718.000	First Interstate Bank	AED STORE LIFELINE VALUE PKG	\$	2,119.99
001.2080.5600.000	First Interstate Bank	AMAZON IA FLAGS AND BOTTLE FILLER FILTERS	\$	38.99
001.4010.5342.000	First Interstate Bank	SCHENDEL	\$	56.77
001.4010.5342.000	First Interstate Bank	SCHENDEL	\$	80.25
001.4010.5343.000	First Interstate Bank	WALMART ENVELOPES AND LEMONADE	\$	15.36
001.4010.5360.000	First Interstate Bank	LIBRARY MAILINGS	\$	28.34
001.4010.5360.000	First Interstate Bank	USPS LIBRARY MAILING	\$	14.17
001.4010.5360.000	First Interstate Bank	USPS LIBRARY MAILINGS	\$	16.68
001.4010.5450.000	First Interstate Bank	AT & T SARAH iPad	\$	34.02
001.4010.5600.000	First Interstate Bank	MENARDS CLEANING SUPPLIES	\$	108.01
001.4010.5600.000	First Interstate Bank	WALMART ENVELOPES AND LEMONADE	\$	17.30
001.4010.5600.000	First Interstate Bank	ADLAND ENGRAVING NAMTAGS	\$	23.90
001.4010.5600.000	First Interstate Bank	AMAZON US MAP	\$	9.99
001.4010.5600.000	First Interstate Bank	MENARDS OPERATING SUPPLIES	\$	44.36
001.4010.5600.000	First Interstate Bank	AMAZON WRONG SIZE SPINDLE	\$	(6.55)
001.4010.5600.000	First Interstate Bank	AMAZON SPINDLE	\$	23.90
001.4010.5600.000	First Interstate Bank	AMAZON LIBRARY VACUUM	\$	250.00
001.4010.5600.000	First Interstate Bank	AMAZON OPERATING SUPPLIES	\$	66.26
001.4010.5600.000	First Interstate Bank	AMAZON BINDER CLIPS	\$	(25.78)
001.4010.5601.000	First Interstate Bank	AMAZON CARDBOARD CUTTING TOOL	\$	246.99
001.4010.5601.000	First Interstate Bank	AMAZON JUVENILE BOOKS, YOUTH PROGRAM	\$	14.20
001.4010.5605.000	First Interstate Bank	AMAZON OFFICE SUPPLIES	\$	51.56
001.4010.5703.000	First Interstate Bank	AMAZON MONITORS	\$	419.17
001.4010.5703.000	First Interstate Bank	AMAZON COMPUTER MONITORS	\$	319.18
001.4010.5703.000	First Interstate Bank	AMAZON COMPUTER SUPPLIES	\$	28.49
001.4010.5704.000	First Interstate Bank	ADOBE CREATIVE CLOUD ADMIN FEE	\$	5.00
001.4010.5718.000	First Interstate Bank	DESKY MINI SIT DESKS	\$	1,437.80
001.4010.5731.000	First Interstate Bank	DSM REGISTER RENEWAL 7/1/27-6/30/28	\$	928.46
001.4030.4879.000	First Interstate Bank	CASEYS VENDOR REBATE	\$	(0.06)
001.4030.5450.000	First Interstate Bank	MEDIACOM CAMPGROUND WiFi	\$	229.95
001.4030.5570.000	First Interstate Bank	CASEYS PARKS 91C FUEL	\$	150.00
001.4030.5600.000	First Interstate Bank	CASEYS PO FOR PROGRAM	\$	5.79
001.4030.5611.000	First Interstate Bank	Menards bulb auger for Parks dept	\$	9.99
001.4040.5600.000	First Interstate Bank	TRI STATE LOCK 10 KEYS PARKS	\$	45.00
001.4041.5357.000	First Interstate Bank	FRIDLEY THEATRES SUMMER BLAST	\$	285.00
001.4041.5380.000	First Interstate Bank	AMAZON VIDEO FOR MOVIE DAY	\$	4.27
001.4041.5600.000	First Interstate Bank	AMAZON CANON CAMERA PACK	\$	503.91
001.4041.5600.000	First Interstate Bank	AMAZON ICE PACKS	\$	95.88
001.4041.5600.000	First Interstate Bank	AMAZON RETURN WALKIE TALKIES	\$	(99.50)
001.4041.5601.000	First Interstate Bank	AMAZON HULA HOOPS	\$	124.99
001.4041.5601.000	First Interstate Bank	AMAZON CRAFT ITEMS	\$	424.10
001.4041.5601.000	First Interstate Bank	AMAZON CRAFT ITEMS	\$	133.46
001.4041.5601.000	First Interstate Bank	HYVEE	\$	151.90

001.4041.5601.000	First Interstate Bank	HYVEE CATERING ABILITY EXPERIENCE	\$ 88.28
001.4041.5601.000	First Interstate Bank	FRIDLEY THEATRES SUMMER BLAST	\$ 209.00
001.4041.5601.000	First Interstate Bank	SAMS CLUB RESALE SUPPLIES	\$ 345.07
001.4041.5601.000	First Interstate Bank	WALMART RESALE SUPPLIES	\$ 62.76
001.4045.5251.000	First Interstate Bank	ASCAP AQUATIC CTR MUSIC 1/1/26-7/31/27	\$ 465.58
001.4045.5600.000	First Interstate Bank	LIFEGUARD STORE MEASUREMENT STICKS	\$ (183.00)
001.4045.5600.000	First Interstate Bank	WRISTCO BANDS	\$ 144.00
001.4045.5605.000	First Interstate Bank	STAPLES COPY PAPER	\$ 108.02
001.4065.5410.000	First Interstate Bank	SUPPLYHOUSE BOTTLE FILL SENSOR	\$ 171.06
001.4065.5600.000	First Interstate Bank	WRISTCO BANDS	\$ 35.80
001.4065.5600.000	First Interstate Bank	AMAZON IA FLAGS AND BOTTLE FILLER FILTERS	\$ 35.82
001.5040.5605.000	First Interstate Bank	AMAZON OFFICE SUPPLIES	\$ 12.98
001.6012.5280.000	First Interstate Bank	Grant finder one month subsc	\$ 135.00
001.6020.5210.000	First Interstate Bank	Column TR Publications	\$ 560.09
001.6020.5605.000	First Interstate Bank	Surface case, tape	\$ 40.22
001.6021.5280.000	First Interstate Bank	IaCMA MEMBERSHIP	\$ 600.00
001.6021.5360.000	First Interstate Bank	USPS POSTAGE STAMPS	\$ 756.60
001.6021.5605.000	First Interstate Bank	AMAZON OFFICE SUPPLIES	\$ 30.39
001.6021.5605.000	First Interstate Bank	AMAZON AIR DUSTER/KEYBOARD TRAY	\$ 81.33
001.6021.5605.000	First Interstate Bank	AMAZON LEGAL PADS	\$ 10.44
001.6021.5605.000	First Interstate Bank	AMAZON OFFICE SUPPLIES	\$ 9.47
001.6021.5605.000	First Interstate Bank	AMAZON OFFICE SUPPLIES	\$ 19.79
001.6025.5460.000	First Interstate Bank	AI, CULTURE STRATEGY & COMPLIANCE CONF	\$ 372.90
001.6025.5605.000	First Interstate Bank	AMAZON CARD READER	\$ 7.59
001.6050.5410.000	First Interstate Bank	SUPPLYHOUSE BOTTLE FILL SENSOR	\$ 171.06
001.6050.5600.000	First Interstate Bank	CUSTODIAL SUPPLIES	\$ 8.54
001.6050.5600.000	First Interstate Bank	AMAZON IA FLAGS AND BOTTLE FILLER FILTERS	\$ 53.73
001.6050.5600.000	First Interstate Bank	AMAZON CUSODIA SUPPLIES, WASH BAY BRUSH	\$ 24.42
001.6051.5600.000	First Interstate Bank	AMAZON CUSODIA SUPPLIES, WASH BAY BRUSH	\$ 24.42
030.1010.5718.000	First Interstate Bank	Armor Express bullet proof vests	\$ 2,236.71
030.4010.5732.000	First Interstate Bank	AMAZON JUVENILE BOOKS	\$ 33.04
030.4010.5732.000	First Interstate Bank	AMAZON JUVE BOOKS, YOUTH PROGRAM	\$ 129.00
030.4010.5732.000	First Interstate Bank	AMAZON JUVE BOOKS	\$ 14.99
030.4010.5732.000	First Interstate Bank	AMAZON JUVE BOOKS	\$ 39.24
030.4010.5732.000	First Interstate Bank	AMAZON JUVE BOOKS	\$ 33.60
030.4010.5732.000	First Interstate Bank	AMAZON JUVE BOOKS	\$ 8.99
030.4010.5732.000	First Interstate Bank	FIRST BOOK JUVE AND GIFT	\$ 45.00
030.4010.5732.000	First Interstate Bank	AMAZON JUVE BOOKS	\$ 79.67
030.4010.5732.000	First Interstate Bank	AMAZON JUVE BOOKS	\$ 182.04
030.4010.5732.000	First Interstate Bank	AMAZON BOOK	\$ 10.19
030.4010.5732.000	First Interstate Bank	AMAZON JUVE BOOKS	\$ 19.64
030.4010.5732.000	First Interstate Bank	AMAZON JUVE BOOKS	\$ 40.10
030.4010.5732.000	First Interstate Bank	FIRST BOOK JUVE	\$ 40.45
030.4010.5732.000	First Interstate Bank	AMAZON DVD	\$ 46.95
030.4010.5732.000	First Interstate Bank	AMAZON DVD	\$ 19.99
030.4010.5732.000	First Interstate Bank	AMAZON BOOK	\$ 10.49
030.4010.5732.000	First Interstate Bank	AMAZON BOOKS	\$ 13.86
030.4010.5732.000	First Interstate Bank	AMAZON BOOKS	\$ 23.70
030.4010.5732.000	First Interstate Bank	AMAZON BOOK	\$ 16.50
030.4010.5732.000	First Interstate Bank	AMAZON BOOKS	\$ 141.35
030.4010.5732.000	First Interstate Bank	AMAZON REFUND DUPLICATE PURCHASE	\$ (10.79)
030.4010.5732.000	First Interstate Bank	AMAZON BOOKS	\$ 27.36
030.4010.5732.000	First Interstate Bank	AMAZON BOOKS	\$ 15.59
030.4010.5732.000	First Interstate Bank	AMAZON BOOKS	\$ 27.34
030.4010.5732.000	First Interstate Bank	AMAZON BOOKS	\$ 173.42
030.4010.5732.000	First Interstate Bank	AMAZON BOOKS	\$ 422.76
030.4010.5732.000	First Interstate Bank	AMAZON BOOKS	\$ 154.15
030.4010.5732.000	First Interstate Bank	AMAZON BOOKS	\$ 21.97
030.4010.5732.000	First Interstate Bank	AMAZON BOOKS	\$ 18.15
030.4010.5732.000	First Interstate Bank	LIBRARY BOOKS	\$ 15.95
030.4010.5732.000	First Interstate Bank	AMAZON BOOKS	\$ 6.09
030.4010.5732.000	First Interstate Bank	AMAZON BOOKS	\$ 586.41
030.4010.5732.000	First Interstate Bank	AMAZON BOOKS	\$ 18.70
030.4010.5732.000	First Interstate Bank	AMAZON BOOKS	\$ 25.91
030.4010.5732.000	First Interstate Bank	AMAZON BOOKS	\$ 9.90
030.4010.5732.000	First Interstate Bank	AMAZON BOOKS	\$ 17.04
030.4010.5732.000	First Interstate Bank	AMAZON BOOKS	\$ 8.80
030.4010.5732.000	First Interstate Bank	AMAZON WRONG MOVIE	\$ (6.05)
030.4010.5732.000	First Interstate Bank	AMAZON BOOK	\$ 8.05
030.4010.5732.000	First Interstate Bank	AMAZON BOOK	\$ 16.50
030.4010.5732.000	First Interstate Bank	AMAZON BOOK	\$ 22.00

030.4010.5732.000	First Interstate Bank	AMAZON BOOK	\$	12.17
030.4010.5732.000	First Interstate Bank	AMAZON ADULT FICTION	\$	36.58
030.4010.5732.000	First Interstate Bank	AMAZON ADULT FICTION	\$	328.47
030.4010.5732.000	First Interstate Bank	AMAZON ADULT FICTION	\$	8.48
030.4010.5732.000	First Interstate Bank	AMAZON ADULT FICTION	\$	16.89
030.4010.5732.000	First Interstate Bank	AMAZON ADULT FICTION	\$	93.95
030.4010.5732.000	First Interstate Bank	AMAZON ADULT FICTION	\$	38.73
030.4010.5732.000	First Interstate Bank	AMAZON ADULT FICTION	\$	23.09
030.4010.5732.000	First Interstate Bank	AMAZON ADULT FICTION	\$	79.20
030.4010.5732.000	First Interstate Bank	AMAZON ADULT FICTION	\$	7.99
030.4010.5732.000	First Interstate Bank	AMAZON ADULT FICTION	\$	28.37
030.4010.5732.000	First Interstate Bank	AMAZON ADULT FICTION	\$	131.75
030.4010.5732.000	First Interstate Bank	AMAZON ADULT FICTION	\$	29.50
030.4010.5732.000	First Interstate Bank	AMAZON ADULT FICTION	\$	72.89
030.4010.5732.000	First Interstate Bank	AMAZON ADULT FICTION	\$	24.01
030.4010.5732.000	First Interstate Bank	AMAZON DAMAGED BOOK	\$	(8.99)
030.4010.5732.000	First Interstate Bank	AMAZON ADULT FICTION	\$	72.65
030.4010.5732.000	First Interstate Bank	AMAZON ADULT FICTION	\$	22.00
110.2010.5347.000	First Interstate Bank	SAI-SIGN PROGRAM RENEWAL 8/1/26	\$	865.99
110.2010.5600.000	First Interstate Bank	AMAZON WASH BAY BRUSHES	\$	19.99
110.2010.5600.000	First Interstate Bank	AMAZON WASH BAY BRUSHES	\$	(12.99)
110.2010.5600.000	First Interstate Bank	AMAZON CUSODIA SUPPLIES, WASH BAY BRUSH	\$	12.99
110.2010.5718.000	First Interstate Bank	HARBOR FREIGHT TOOLS	\$	110.69
110.2040.5410.000	First Interstate Bank	AMAZON WIRELESS ROUTER POWER CORD	\$	14.42
110.2040.5410.000	First Interstate Bank	USPS MOBOTREX RETURN	\$	37.38
110.2060.5600.000	First Interstate Bank	MENARDS BATTERY	\$	4.19
153.1010.5600.000	First Interstate Bank	SAMS CLUB RESALE SUPPLIES RAGBRAI	\$	292.29
153.1010.5600.000	First Interstate Bank	AMAZON RETIREMENT PARTY SUPPLIES	\$	26.54
153.1010.5600.000	First Interstate Bank	AMAZON RETIREMENT SUPPLIES	\$	6.64
153.1010.5600.000	First Interstate Bank	Fareway staff meals for Ragbrai	\$	10.45
153.1010.5600.000	First Interstate Bank	HyVee staff meals for Ragbrai	\$	35.76
153.1010.5600.000	First Interstate Bank	Walmart Ragbrai staff meals	\$	19.88
153.1010.5600.000	First Interstate Bank	Walmart Candy for event	\$	15.76
153.1010.5600.000	First Interstate Bank	HyVee retirement party supplies	\$	48.14
153.1010.5600.000	First Interstate Bank	HyVee supplies for Ragbrai staff meals	\$	46.88
170.4010.5450.000	First Interstate Bank	VERIZON LIBRARY HOTSPOTS	\$	400.10
170.4010.5601.000	First Interstate Bank	FIRST BOOK JUVE AND GIFT	\$	112.00
170.4010.5734.000	First Interstate Bank	AMAZON MEMORIAL BOOK	\$	16.49
170.4010.5734.000	First Interstate Bank	AMAZON ADULT FICTION MEMORIAL FUND	\$	16.49
181.3040.5605.000	First Interstate Bank	AMAZON OFFICE SUPPLIES	\$	40.19
181.3040.5605.000	First Interstate Bank	AMAZON AIR DUSTERS	\$	20.57
184.5030.4876.000	First Interstate Bank	12445875	\$	(10.99)
184.5030.4876.000	First Interstate Bank	Endicia refunds	\$	(0.37)
184.5030.4876.000	First Interstate Bank	18587460	\$	(10.99)
184.5030.4876.000	First Interstate Bank	15598508	\$	(10.99)
184.5030.4876.000	First Interstate Bank	97192271	\$	(10.99)
184.5030.4876.000	First Interstate Bank	7786319-18587460	\$	(10.99)
184.5030.4876.000	First Interstate Bank	09261635	\$	(10.99)
184.5030.4876.000	First Interstate Bank	01423500	\$	(10.99)
184.5030.5360.000	First Interstate Bank	STAMPS.COM	\$	100.00
184.5030.5360.000	First Interstate Bank	STAMPS.COM	\$	200.00
184.5030.5360.000	First Interstate Bank	STAMPS.COM FEE	\$	16.04
184.5030.5460.000	First Interstate Bank	NAN MCKAY CONFERENCE	\$	225.00
355.1075.5410.000	First Interstate Bank	FASTENAL HOSPITAL PARTS	\$	71.69
355.1075.5410.000	First Interstate Bank	TRUE VALUE HOSPITAL PARTS	\$	28.33
355.1075.5410.000	First Interstate Bank	THEISENS MASONRY SCREWS	\$	42.25
610.8015.4875.000	First Interstate Bank	CASEYS VENDOR REBATES	\$	(2.78)
610.8015.5132.000	First Interstate Bank	THEISEN WPCP EMPLOYEE CLOTHING NON TAXABLE	\$	254.94
610.8015.5280.000	First Interstate Bank	IA DEPT AG PESTICIDE LICENSE -R FOGT	\$	15.00
610.8015.5342.000	First Interstate Bank	RID-R-BUG WPCP CONTROL	\$	90.00
610.8015.5344.000	First Interstate Bank	CONTROLLED ACCESS LIFTMASTER SUBSC	\$	179.50
610.8015.5360.000	First Interstate Bank	USPS LAB SHIPMENT AND STAMPS	\$	91.55
610.8015.5380.000	First Interstate Bank	SCHARNWEBER WATER COND LEASE	\$	27.81
610.8015.5410.000	First Interstate Bank	SCOOTER TIRE CART TIRE	\$	41.58
610.8015.5450.000	First Interstate Bank	MEDIACOM AUGUST 2026 ONLINE WPCP	\$	75.00
610.8015.5450.000	First Interstate Bank	SIP.US SCADA DIALER FEE	\$	35.17
610.8015.5471.000	First Interstate Bank	IA DEPT AG PESTICIDE LICENSE TESTING R. FOGT	\$	28.00
610.8015.5570.000	First Interstate Bank	CASEYS FUEL FOR NURSE TANK	\$	150.00
610.8015.5571.000	First Interstate Bank	CASEYS FUEL FOR NURSE TANK	\$	150.00
610.8015.5571.000	First Interstate Bank	CASEYS FUEL FOR NURSE TANK	\$	78.14
610.8015.5600.000	First Interstate Bank	MENARDS OPERATING SUPPLIES	\$	326.96

610.8015.5600.000	First Interstate Bank	MENARDS OPERATING SUPPLIES WPCP	\$	32.95
610.8015.5600.000	First Interstate Bank	MENARDS PLUMBING SUPPLIES	\$	9.48
610.8015.5600.000	First Interstate Bank	MENARDS PIPE WRENCH AND OP SUPPLIES	\$	80.63
610.8015.5600.000	First Interstate Bank	MENARDS TOILET REPAIR PARTS	\$	79.28
610.8015.5600.000	First Interstate Bank	MENARDS WASP SPRAY	\$	13.92
610.8015.5600.000	First Interstate Bank	MENARDS 3FT MEASURING TAPE	\$	64.97
610.8015.5600.000	First Interstate Bank	SHERWIN WILLIAMS PAINT	\$	106.23
610.8015.5600.000	First Interstate Bank	TAX REFUND	\$	(6.95)
610.8015.5600.000	First Interstate Bank	AMAZON BATTERY BACKUP	\$	259.96
610.8015.5600.000	First Interstate Bank	AMAZON VOLTAGE TESTERS	\$	49.96
610.8015.5600.000	First Interstate Bank	GRAINGER V-BELTS AND BODY BELTS	\$	239.42
610.8015.5600.000	First Interstate Bank	GRAINGER PLEATED AIR FILTERS	\$	75.72
610.8015.5600.000	First Interstate Bank	GRAINGER CHEMICAL RESISTANT GLOVES	\$	58.77
610.8015.5600.000	First Interstate Bank	GRAINGER TIME CLOCK RIBBON	\$	24.34
610.8015.5600.000	First Interstate Bank	TELEDYNE FAN/TEMP/EVAPORATION SENSORS	\$	794.00
610.8015.5600.000	First Interstate Bank	THEISENS TIRE FOR 2 WHEEL CART	\$	71.98
610.8015.5600.000	First Interstate Bank	TELEDYNE REFRIGERATION ASSEMBLY	\$	3,050.00
610.8015.5600.000	First Interstate Bank	MENARDS COUPLINGS AND RAIN BLADDERS	\$	55.18
610.8015.5603.000	First Interstate Bank	ERA QTRLY LAB ANALYSIS	\$	532.37
610.8015.5603.000	First Interstate Bank	MINUTEMAN LAB FORMS	\$	270.40
610.8015.5603.000	First Interstate Bank	NCLABS GLASS FIBER FILTERS	\$	612.69
610.8015.5603.000	First Interstate Bank	NCLABS CONDUCTIVITY STANDARD	\$	30.19
610.8015.5605.000	First Interstate Bank	AMAZON WALL CALENDAR	\$	7.90
610.8015.5605.000	First Interstate Bank	STAPLES OFFICE SUPPLIES WPCP	\$	82.50
610.8016.5600.000	First Interstate Bank	AMAZON SWIVEL & ELBOW ASSY TOOL	\$	83.61
610.8016.5702.000	First Interstate Bank	SEWER OFFICE CHAIRS	\$	76.66
690.8050.5342.000	First Interstate Bank	ROSCO TRANSIT GPS	\$	252.00
690.8050.5342.000	First Interstate Bank	ROSCO TRANSIT GPS	\$	252.00
690.8050.5600.000	First Interstate Bank	AMAZON WASH BAY BRUSHES	\$	19.99
690.8050.5600.000	First Interstate Bank	AMAXON	\$	(13.00)
690.8050.5600.000	First Interstate Bank	AMAZON CUSODIA SUPPLIES, WASH BAY BRUSH	\$	13.00
690.8050.5605.000	First Interstate Bank	AMAZON TONER	\$	27.00
690.8050.5605.000	First Interstate Bank	AMAZON MEMO PADS	\$	14.99
740.8065.5600.000	First Interstate Bank	AMAZON SWIVEL & ELBOW ASSY TOOL	\$	55.74
740.8065.5702.000	First Interstate Bank	SEWER OFFICE CHAIRS	\$	51.11
750.8070.5344.000	First Interstate Bank	CONTROLLED ACCESS LIFTMASTER SUBSC	\$	39.50
760.8080.5600.000	First Interstate Bank	AMAZON BAKING SHEETS	\$	32.52
760.8080.5608.000	First Interstate Bank	FAREWAY AQUATIC CTR RESALE	\$	28.94
760.8080.5608.000	First Interstate Bank	SAMS CLUB RESALE SUPPLIES	\$	1,462.26
881.1050.5339.000	First Interstate Bank	MEDICAL CTR PAID CLAIM	\$	1,869.45
881.1050.5339.000	First Interstate Bank	IOWA ENT CENTER PAID CLAIM	\$	1,792.00
881.1050.5339.000	First Interstate Bank	WEST LAKES SURGERY PAID CLAIM	\$	3,919.13
999.1164.000	First Interstate Bank	Jethros meal during training	\$	9.57
184.5030.5242.000	Friendly Valley Apartments Inc	Rent Assistance	\$	211.00
184.5030.5242.000	Friendly Valley Apartments Inc	Rent Assistance	\$	151.00
184.5030.5242.000	Friendly Valley Apartments Inc	Rent Assistance	\$	(102.00)
001.1010.5132.000	Galls LLC	Patrol clothing	\$	140.14
001.1010.5132.000	Galls LLC	Patrol clothing	\$	565.24
001.1010.5132.000	Galls LLC	Patrol clothing	\$	179.59
001.1010.5132.000	Galls LLC	Patrol clothing	\$	50.90
001.1010.5132.000	Galls LLC	Patrol clothing	\$	170.59
001.1010.5132.000	Galls LLC	Patrol clothing	\$	58.49
001.1010.5132.000	Galls LLC	Patrol clothing	\$	164.17
001.1010.5132.000	Galls LLC	Patrol clothing	\$	57.78
001.1010.5132.000	Galls LLC	Patrol clothing	\$	119.18
001.1010.5132.000	Galls LLC	Patrol clothing	\$	179.54
001.1050.5132.000	Galls LLC	Stryke Pant	\$	197.50
001.1050.5132.000	Galls LLC	Boots	\$	108.25
610.8015.5980.000	Garcia, Ramon	Sewer refund filled pool	\$	32.24
181.3040.5410.000	Gentry, Susan	PRC25014 712 E State St	\$	14,350.00
181.3040.5415.000	Gentry, Susan	PRC25014 712 E State St HH	\$	21,675.00
690.8050.5565.000	GILLIG LLC	Egr retrofit cooler	\$	390.48
690.8050.5565.000	GILLIG LLC	Clamp hose	\$	29.16
690.8050.5565.000	GILLIG LLC	clamp band and elbow silicone	\$	398.08
690.8050.5565.000	GILLIG LLC	Splash shield and glazing door	\$	154.70
690.8050.5565.000	GILLIG LLC	belt asm, lap & shoulder, belt tie down	\$	2,223.85
184.5030.5242.000	Glenda Drive LLC	Rent Assistance	\$	305.00
184.5030.5242.000	Glenda Drive LLC	Rent Assistance	\$	392.00
184.5030.5242.000	Glenda Drive LLC	Rent Assistance	\$	381.00
001.4010.5980.000	Glick, Brandy	returned lost items	\$	91.91
001.1050.5718.000	Golden West Industrial Supply	Saw Blades	\$	380.98

184.5030.5242.000	Gorrell, Joseph	Rent Assistance	\$ 650.00
184.5030.5242.000	Gray, Dennis	Rent Assistance	\$ 268.00
610.8015.5450.000	Greazel, Lance	Monthly cell phone stipend	\$ 40.00
610.8015.5386.000	Grewell Lawn & Snow Removal Services LLC	WPCP contract mowings	\$ 1,985.00
110.2010.5618.000	GRIMES ASPHALT AND PAVING CORP.	Street dept cold mix	\$ 2,123.50
184.5030.5242.000	Hala, Janet	Rent Assistance	\$ 416.00
184.5030.5242.000	Hala, Janet	Rent Assistance	\$ 354.00
184.5030.5242.000	Hala, Janet	Rent Assistance	\$ 324.00
184.5030.5242.000	Hala, Janet	Rent Assistance	\$ 155.00
184.5030.5242.000	Hala, Janet	Rent Assistance	\$ 168.00
001.6050.5342.000	Hardons	Repairs to water line for heater YSS basement	\$ 166.42
184.5030.5242.000	Hatch, Roger	Rent Assistance	\$ 955.00
184.5030.5242.000	Hatch, Roger	Rent Assistance	\$ 428.00
184.5030.5242.000	HAVELKA, BILL S	Rent Assistance	\$ 696.00
884.6021.4875.000	Health Partners	claims 8/13-8/19	\$ (7,645.10)
884.6021.4875.000	Health Partners	claims 8/20-8/26	\$ (17,390.65)
884.6021.4875.000	Health Partners	Stop/ Loss credits, Health/ Dental Claims	\$ 11,369.12
884.7010.5339.000	Health Partners	claims 8/13-8/19	\$ 101,094.33
884.7010.5339.000	Health Partners	claims 8/20-8/26	\$ 64,944.90
884.7010.5339.000	Health Partners	Stop/ Loss credits, Health/ Dental Claims	\$ 34,773.68
001.1099.5450.000	HEART OF IOWA COMMUNICATIONS CO-OP	Police & Fire Bldg	\$ 2,229.09
001.4045.5450.000	HEART OF IOWA COMMUNICATIONS CO-OP	Aquatic Center	\$ 80.14
001.4065.5450.000	HEART OF IOWA COMMUNICATIONS CO-OP	Coliseum	\$ 31.00
001.6050.5450.000	HEART OF IOWA COMMUNICATIONS CO-OP	Flat rate 3204, 3390, 3399	\$ 12.70
001.6050.5450.000	HEART OF IOWA COMMUNICATIONS CO-OP	City Hall	\$ 244.09
001.6050.5450.000	HEART OF IOWA COMMUNICATIONS CO-OP	e-bill incentive credit	\$ (1.00)
110.2010.5450.000	HEART OF IOWA COMMUNICATIONS CO-OP	PW Bldg	\$ 86.04
610.8015.5450.000	HEART OF IOWA COMMUNICATIONS CO-OP	Sept. '26 direct connect internet PW/WPCP	\$ 527.31
610.8015.5450.000	HEART OF IOWA COMMUNICATIONS CO-OP	WPCP	\$ 86.04
610.8016.5450.000	HEART OF IOWA COMMUNICATIONS CO-OP	Sept. '26 direct connect internet PW/WPCP	\$ 316.39
610.8016.5450.000	HEART OF IOWA COMMUNICATIONS CO-OP	WPCP	\$ 51.63
610.8016.5450.000	HEART OF IOWA COMMUNICATIONS CO-OP	PW Bldg	\$ 51.63
740.8065.5450.000	HEART OF IOWA COMMUNICATIONS CO-OP	Sept. '26 direct connect internet PW/WPCP	\$ 210.92
740.8065.5450.000	HEART OF IOWA COMMUNICATIONS CO-OP	PW Bldg	\$ 34.42
740.8065.5450.000	HEART OF IOWA COMMUNICATIONS CO-OP	WPCP	\$ 34.42
184.5030.5246.000	Hegos, Deri	Rent Assistance	\$ 53.00
184.5030.5242.000	HESSENIUS, ROBERT	Rent Assistance	\$ 616.00
184.5030.5242.000	Hilltop Village Inc	Rent Assistance	\$ 253.00
184.5030.5242.000	Hilltop Village Inc	Rent Assistance	\$ 217.00
184.5030.5242.000	Historic Tallcorn Towers LLP	Rent Assistance	\$ 388.00
184.5030.5242.000	Historic Tallcorn Towers LLP	Rent Assistance	\$ 326.00
184.5030.5242.000	Historic Tallcorn Towers LLP	Rent Assistance	\$ 450.00
184.5030.5242.000	Historic Tallcorn Towers LLP	Rent Assistance	\$ 294.00
184.5030.5242.000	Historic Tallcorn Towers LLP	Rent Assistance	\$ 319.00
184.5030.5242.000	Historic Tallcorn Towers LLP	Rent Assistance	\$ 152.00
184.5030.5242.000	Historic Tallcorn Towers LLP	Rent Assistance	\$ 238.00
184.5030.5242.000	Historic Tallcorn Towers LLP	Rent Assistance	\$ 258.00
184.5030.5242.000	Historic Tallcorn Towers LLP	Rent Assistance	\$ 271.00
184.5030.5242.000	Historic Tallcorn Towers LLP	Rent Assistance	\$ 296.00
184.5030.5242.000	Historic Tallcorn Towers LLP	Rent Assistance	\$ 279.00
184.5030.5242.000	Ho Phi Nguyen	Rent Assistance	\$ 550.00
110.2012.5230.000	HOWARD R GREEN COMPANY, INC	Pavement Management Study thru 8/21/26	\$ 7,668.25
110.2012.5233.000	HOWARD R GREEN COMPANY, INC	2026 Street Rehabilitation - HMA thru 8/14/26	\$ 117.50
184.5030.5242.000	Howard, Jammie	Rent Assistance	\$ 164.00
610.8015.5718.000	HUPP ELECTRIC MOTOR INC	10 hp motor for digester mixers	\$ 1,855.24
760.8080.5608.000	HyVee Accounts Receivable	Concessions Supplies	\$ 56.94
760.8080.5608.000	HyVee Accounts Receivable	Concessions Supplies	\$ 10.76
760.8080.5608.000	HyVee Accounts Receivable	Concessions Supplies	\$ 15.04
760.8080.5608.000	HyVee Accounts Receivable	Concessions Supplies	\$ 32.21
760.8080.5608.000	HyVee Accounts Receivable	Concessions Supplies	\$ 18.86
760.8080.5608.000	HyVee Accounts Receivable	Concessions Supplies	\$ 29.85
760.8080.5608.000	HyVee Accounts Receivable	Concession Supplies	\$ 8.96
760.8080.5608.000	HyVee Accounts Receivable	Concession Supplies	\$ 10.24
760.8080.5608.000	HyVee Accounts Receivable	Concession Supplies	\$ 23.51
001.1010.5470.000	HyVee- Johnston	ILEA trainee meals	\$ 2,786.00
001.1010.5470.000	HyVee- Johnston	ILEA trainee meals	\$ 2,786.00
001.1099.5450.000	IMON Communications LLC	Police and Fire internet	\$ 134.99
184.5030.5238.000	Indiana Housing and Community Development Authority	Hud Admin90126	\$ 56.27
184.5030.5242.000	Indiana Housing and Community Development Authority	Rent Assistance	\$ 1,796.00
184.5030.5242.000	Inman, Jeffrey	Rent Assistance	\$ 142.00
999.1101.000	INTERNAL REVENUE SERVICE	Bi-Weekly Federal Taxes	\$ 16,688.09

999.1101.000	INTERNAL REVENUE SERVICE	Bi-Weekly Federal Taxes	\$ 32,873.30
999.1101.000	INTERNAL REVENUE SERVICE	Bi-Weekly Federal Taxes	\$ 33,222.49
999.1101.000	INTERNAL REVENUE SERVICE	Bi-Weekly Federal Taxes	\$ 17,475.57
999.1103.000	INTERNAL REVENUE SERVICE	Bi-Weekly Payroll Social Security	\$ 6,386.24
999.1103.000	INTERNAL REVENUE SERVICE	Bi-Weekly Payroll Social Security	\$ 35,497.64
999.1103.000	INTERNAL REVENUE SERVICE	Bi-Weekly Payroll Social Security	\$ 33,178.10
999.1103.000	INTERNAL REVENUE SERVICE	Bi-Weekly Payroll Social Security	\$ 6,181.94
999.1107.000	INTERNAL REVENUE SERVICE	Bi-Weekly Payroll Medicare	\$ 5,222.68
999.1107.000	INTERNAL REVENUE SERVICE	Bi-Weekly Payroll Medicare	\$ 11,427.62
999.1107.000	INTERNAL REVENUE SERVICE	Bi-Weekly Payroll Medicare	\$ 10,888.02
999.1107.000	INTERNAL REVENUE SERVICE	Bi-Weekly Payroll Medicare	\$ 5,328.32
001.4045.5251.000	Iowa Dept of Inspections, Appeals, Licensing	Boiler Certification	\$ 40.00
999.1121.000	Iowa Dept of Revenue	Wage Withholding	\$ 48.72
999.1121.000	Iowa Dept of Revenue	Wage Withholding	\$ 48.72
110.2040.5230.000	IOWA ONE CALL	Utility div, Iowa One Call Charges July 2026	\$ 36.00
610.8016.5230.000	IOWA ONE CALL	July 2026 Sewer dept services	\$ 316.38
740.8065.5230.000	IOWA ONE CALL	July 2026 Sewer dept services	\$ 210.92
001.2080.5611.000	Iowa Prison Industries	Airport	\$ 72.35
001.4065.5611.000	Iowa Prison Industries	Veterans memorial coliseum	\$ 72.34
001.6050.5600.000	Iowa Prison Industries	Building HVAC filters	\$ 30.30
001.6050.5611.000	Iowa Prison Industries	City Hall	\$ 27.94
001.6051.5600.000	Iowa Prison Industries	Building HVAC filters	\$ 30.30
001.6051.5611.000	Iowa Prison Industries	Carnegie Bldg	\$ 95.14
110.2010.5611.000	Iowa Prison Industries	Public Works Bldg.	\$ 35.80
110.2010.5626.000	Iowa Prison Industries	12 Angle parking signs	\$ 590.04
690.8050.5611.000	Iowa Prison Industries	Public Works Bldg.	\$ 35.80
999.1106.000	IOWA PUBLIC EMPLOYEE'S RETIREMENT SYSTEM	PRIOR MONTH IPERS CONTRIBUTIONS	\$ 4,582.69
999.1106.000	IOWA PUBLIC EMPLOYEE'S RETIREMENT SYSTEM	PRIOR MONTH IPERS CONTRIBUTIONS	\$ 44,288.87
999.1106.000	IOWA PUBLIC EMPLOYEE'S RETIREMENT SYSTEM	PRIOR MONTH IPERS CONTRIBUTIONS	\$ 299.11
999.1106.000	IOWA PUBLIC EMPLOYEE'S RETIREMENT SYSTEM	PRIOR MONTH IPERS CONTRIBUTIONS	\$ 8,481.01
999.1106.000	IOWA PUBLIC EMPLOYEE'S RETIREMENT SYSTEM	ADJ HAINLINE ER PORTION	\$ 2,244.81
999.1106.000	IOWA PUBLIC EMPLOYEE'S RETIREMENT SYSTEM	ADJ CRUZ ER PORTION	\$ 1,291.49
999.1106.000	IOWA PUBLIC EMPLOYEE'S RETIREMENT SYSTEM	Rounding Adjustment	\$ 0.13
999.1106.000	IOWA PUBLIC EMPLOYEE'S RETIREMENT SYSTEM	PRIOR MONTH IPERS CONTRIBUTIONS	\$ 43,768.59
999.1106.000	IOWA PUBLIC EMPLOYEE'S RETIREMENT SYSTEM	PRIOR MONTH IPERS CONTRIBUTIONS	\$ 299.11
001.2080.5483.000	Iowa Regional Utilities Association	Airport water	\$ 204.56
184.5030.5242.000	JBH COOP ASSOCIATION	Rent Assistance	\$ 410.00
184.5030.5242.000	JBH COOP ASSOCIATION	Rent Assistance	\$ 408.00
184.5030.5242.000	JBH COOP ASSOCIATION	Rent Assistance	\$ 214.00
184.5030.5242.000	JBH COOP ASSOCIATION	Rent Assistance	\$ 355.00
184.5030.5242.000	JDL Rentals Cooperative	Rent Assistance	\$ 483.00
610.8015.5410.000	Jetco Inc	replacement panelview & cover for U.V.	\$ 370.00
610.8015.5600.000	Jetco Inc	replacement panelview & cover for U.V.	\$ 3,661.00
184.5030.5242.000	Jimenez, Luis	Rent Assistance	\$ 358.00
110.2050.5622.000	Johnson Feed Inc	Road salt	\$ 2,519.64
110.2050.5622.000	Johnson Feed Inc	Road salt	\$ 2,559.76
110.2050.5622.000	Johnson Feed Inc	Road Salt	\$ 2,544.10
110.2050.5622.000	Johnson Feed Inc	Road salt	\$ 2,568.56
110.2050.5622.000	Johnson Feed Inc	Road salt	\$ 2,637.06
110.2050.5622.000	Johnson Feed Inc	Road salt	\$ 2,461.91
110.2050.5622.000	Johnson Feed Inc	Road salt	\$ 2,532.36
110.2050.5622.000	Johnson Feed Inc	Road Salt	\$ 2,629.72
110.2050.5622.000	Johnson Feed Inc	Road salt	\$ 2,703.11
110.2050.5622.000	Johnson Feed Inc	Road Salt	\$ 2,446.25
110.2050.5622.000	Johnson Feed Inc	Road salt	\$ 2,793.62
184.5030.5242.000	Kading Properties LLC	Rent Assistance	\$ 1,125.00
184.5030.5242.000	Kading Properties LLC	Rent Assistance	\$ 738.00
184.5030.5242.000	Kading Properties LLC	Rent Assistance	\$ 491.00
184.5030.5242.000	Kading Properties LLC	Rent Assistance	\$ 236.00
001.1010.5410.000	Karl of Marshalltown	Car 500	\$ 895.00
001.1010.5565.000	Karl of Marshalltown	Car 500	\$ 357.00
001.1010.5565.000	Karl of Marshalltown	Car 500	\$ 260.00
184.5030.5242.000	Kramer, Marcia	Rent Assistance	\$ 404.00
001.1010.5431.000	Language Line Services Inc	Interpreting	\$ 410.82
001.4030.5562.000	Larrys Towing and Tire Service	Mower Tubes	\$ 70.00
001.4030.5562.000	Larrys Towing and Tire Service	Mower TIres	\$ 250.00
184.5030.5242.000	Lawthers Property Management	Rent Assistance	\$ 166.00
110.2010.5450.000	Legg, Richard	Monthly cell phone stipend	\$ 40.00
001.1075.5359.000	LHogeland Auto Plaza LLC	towing	\$ 440.00
001.1075.5359.000	LHogeland Auto Plaza LLC	towing	\$ 220.00
001.1075.5359.000	LHogeland Auto Plaza LLC	towing	\$ 220.00

184.5030.5242.000	Linton, Tyler	Rent Assistance	\$ 351.00
184.5030.5242.000	Linton, Tyler	Rent Assistance	\$ 278.00
184.5030.5242.000	Luense, Brant	Rent Assistance	\$ 661.00
184.5030.5242.000	Luense, Brant	Rent Assistance	\$ 347.00
184.5030.5242.000	Luense, Brant	Rent Assistance	\$ 280.00
184.5030.5242.000	Luense, Brant	Rent Assistance	\$ 243.00
184.5030.5242.000	Luense, Brant	Rent Assistance	\$ 212.00
184.5030.5242.000	Luense, Brant	Rent Assistance	\$ 750.00
184.5030.5242.000	Lusoma LLC	Rent Assistance	\$ 229.00
184.5030.5242.000	Lusoma LLC	Rent Assistance	\$ 397.00
001.1075.5234.000	Lynch Dallas PC	Nuisance/Enforcement 7/29/26-8/14/26	\$ 270.00
001.6040.5234.000	Lynch Dallas PC	General Matters 7/20/26-8/14/26	\$ 3,346.50
001.6040.5234.000	Lynch Dallas PC	Real Estate 07/21/26-08/03/26	\$ 472.50
001.6040.5234.000	Lynch Dallas PC	Labor/Employment 08/12/26	\$ 220.00
001.6040.5234.000	Lynch Dallas PC	Zoning 07/21/26-08/11/26	\$ 135.00
355.1075.5234.000	Lynch Dallas PC	Nuisance/Enforcement 7/29/26-8/14/26	\$ 204.00
110.2070.5565.000	MacQueen	Rotary switch 3-speed	\$ 62.98
110.2012.5342.000	Manatts Inc	HMA Rehab Const Contract - Base+Add 8/13-8/31/26	\$ 305,508.05
740.8065.5980.000	Marshall Cemetery Association	Storm Water Utility Refund - Riverside Cemetery	\$ 410.19
001.1010.5570.000	Marshall County Engineer	Fuel Purchases	\$ 117.88
001.1010.5570.000	Marshall County Engineer	Fuel Purchases	\$ 6,676.65
001.1050.5570.000	Marshall County Engineer	Fuel Purchases	\$ 247.04
001.1050.5571.000	Marshall County Engineer	Fuel Purchases	\$ 1,693.03
001.1071.5570.000	Marshall County Engineer	Fuel Purchases	\$ 21.24
001.1075.5570.000	Marshall County Engineer	Fuel Purchases	\$ 55.36
001.2020.5570.000	Marshall County Engineer	Fuel Purchases	\$ 27.20
001.4030.5570.000	Marshall County Engineer	Fuel Purchases	\$ 879.56
001.4030.5571.000	Marshall County Engineer	Fuel Purchases	\$ 1,333.24
001.6050.5570.000	Marshall County Engineer	Fuel Purchases	\$ 119.40
110.2010.5570.000	Marshall County Engineer	Fuel Purchases	\$ 880.01
110.2010.5571.000	Marshall County Engineer	Fuel Purchases	\$ 4,109.80
110.2040.5570.000	Marshall County Engineer	Fuel Purchases	\$ 274.14
110.2040.5571.000	Marshall County Engineer	Fuel Purchases	\$ 60.68
110.2060.5570.000	Marshall County Engineer	Fuel Purchases	\$ 372.51
610.8015.5570.000	Marshall County Engineer	Fuel Purchases	\$ 101.63
610.8015.5571.000	Marshall County Engineer	Fuel Purchases	\$ 70.17
610.8016.5570.000	Marshall County Engineer	Fuel Purchases	\$ 231.83
610.8016.5571.000	Marshall County Engineer	Fuel Purchases	\$ 217.64
690.8050.5570.000	Marshall County Engineer	Fuel Purchases	\$ 547.38
690.8050.5571.000	Marshall County Engineer	Fuel Purchases	\$ 6,677.81
740.8065.5570.000	Marshall County Engineer	Fuel Purchases	\$ 154.55
740.8065.5570.000	Marshall County Engineer	Fuel Purchases	\$ 119.84
740.8065.5571.000	Marshall County Engineer	Fuel Purchases	\$ 145.10
110.2010.5342.000	Marshall County Landfill	worn out tires	\$ 84.00
001.6020.5250.000	Marshall County Recorder	Document recording - August	\$ 41.00
001.5020.5331.000	MARSHALLTOWN CBD INC	MCBD FY 2027	\$ 15,000.00
001.1010.5460.000	Marshalltown Chamber of Commerce	Leadership Mtown Class	\$ 500.00
001.6021.5460.000	Marshalltown Chamber of Commerce	2026-2027 Leadership Tonya Kelley	\$ 500.00
001.4041.5331.000	Marshalltown Community School District	Summer Camp Outing Admissions	\$ 768.96
001.4041.5331.000	Marshalltown Community School District	Summer Camp Outing Admissions	\$ 768.95
184.5030.5242.000	Marshalltown Lofts, LLC	Rent Assistance	\$ 228.00
184.5030.5242.000	Marshalltown Lofts, LLC	Rent Assistance	\$ 54.00
184.5030.5242.000	Marshalltown Lofts, LLC	Rent Assistance	\$ 241.00
184.5030.5242.000	Marshalltown Lofts, LLC	Rent Assistance	\$ 251.00
184.5030.5242.000	Marshalltown Lofts, LLC	Rent Assistance	\$ 253.00
184.5030.5242.000	Marshalltown Lofts, LLC	Rent Assistance	\$ 190.00
184.5030.5242.000	Marshalltown Lofts, LLC	Rent Assistance	\$ 274.00
184.5030.5242.000	Marshalltown Lofts, LLC	Rent Assistance	\$ 85.00
184.5030.5242.000	Marshalltown Lofts, LLC	Rent Assistance	\$ 297.00
184.5030.5242.000	Marshalltown Lofts, LLC	Rent Assistance	\$ 340.00
184.5030.5242.000	Marshalltown Lofts, LLC	Rent Assistance	\$ 455.00
184.5030.5242.000	Marshalltown Lofts, LLC	Rent Assistance	\$ 652.00
184.5030.5242.000	Marshalltown Lofts, LLC	Rent Assistance	\$ 710.00
184.5030.5242.000	Marshalltown Lofts, LLC	Rent Assistance	\$ 902.00
001.4045.5342.000	Marshalltown Water Works	Lab Tests - August	\$ 14.00
001.4045.5342.000	Marshalltown Water Works	Lab Tests - August	\$ 28.00
001.4065.5483.000	Marshalltown Water Works	Coliseum water	\$ 109.10
110.2010.5620.000	Martin Marietta Materials	Street dept crushed rock	\$ 227.94
110.2010.5620.000	Martin Marietta Materials	Por B-fill	\$ 200.68
110.2010.5620.000	Martin Marietta Materials	Rock for dura patch machine	\$ 198.07
110.2010.5620.000	Martin Marietta Materials	Rock for dura patch machine	\$ 196.33

110.2010.5620.000	Martin Marietta Materials	Rock for dura patch machine	\$ 422.82
184.5030.5246.000	Mattingly, Ruth	Rent Assistance	\$ 40.00
001.1010.5464.000	May,Jordan	Reimbursement for meals	\$ 10.00
001.1010.5464.000	May,Jordan	Reimbursement for meals	\$ 10.00
312.2080.5233.000	McClure Engineering Co	Airport Master Plan 7/26/26-8/29/26	\$ 19,100.84
184.5030.5242.000	MD Kruse Enterprise	Rent Assistance	\$ 44.00
121.5030.5331.000	MEDIC	Home Buyer Incentive-805 Woodside Dr	\$ 2,500.00
881.1050.5339.000	Medimpact Healthcare Systems Inc	411 Prescriptions	\$ 376.55
001.1010.5410.000	Menards	Mouse bait red impound bldg	\$ 6.16
001.1010.5600.000	Menards	Toolbox	\$ 19.15
001.1050.4879.000	Menards	rebate 6389331024	\$ (3.49)
001.1050.5600.000	Menards	Vacuum	\$ 84.00
001.1050.5600.000	Menards	Shower head	\$ 19.99
001.1050.5630.000	Menards	Gloves	\$ 53.92
001.4030.5611.000	Menards	PVC Pipe and Tee	\$ (7.91)
001.4030.5611.000	Menards	Toilet Hinge Bolts	\$ 17.96
001.4030.5611.000	Menards	Plastic Seat	\$ 12.99
001.4030.5611.000	Menards	Shear and Drillbit	\$ 26.97
001.4045.5611.000	Menards	AC Marine A/F	\$ 28.00
001.4045.5611.000	Menards	Aquatic Center Shower Door Hinges	\$ 57.40
110.2010.5132.000	Menards	Street employee taxable clothing	\$ 89.97
110.2010.5132.000	Menards	Street employee clothing	\$ 50.97
110.2010.5410.000	Menards	wall mold to cover wiring PW buliding	\$ 12.99
110.2010.5600.000	Menards	lock nuts and sockets	\$ 4.11
110.2010.5600.000	Menards	straps and hooks	\$ 26.20
110.2010.5600.000	Menards	12" super stretch straps	\$ 6.99
110.2010.5600.000	Menards	adapter	\$ 1.36
110.2030.5410.000	Menards	liquid tape truck repairs	\$ 4.49
110.2030.5600.000	Menards	Utility marking paint	\$ 8.48
110.2040.5410.000	Menards	liquid tape truck repairs	\$ 4.49
340.4030.5611.000	Menards	Chainsaw Tooth Blade	\$ 67.96
610.8015.5410.000	Menards	Mouse bait red impound bldg	\$ 6.16
610.8016.5410.000	Menards	Mouse bait red impound bldg	\$ 6.16
110.2030.5600.000	Michael Todd & Co Inc	Utility locate flags	\$ 394.00
610.8015.5603.000	Microbac Laboratories Inc	Lab analysis - Digester #3	\$ 94.25
364.2010.5342.000	Mid-Iowa Enterprises LLC	HMA Crack and Joint Seal 8/1/26-9/3/26	\$ 24,117.27
610.8015.5603.000	MIDLAND SCIENTIFIC INC	Lab - lab notebooks	\$ 150.50
610.8015.5603.000	MIDLAND SCIENTIFIC INC	Lab - Boiler for still and silicone sleeves	\$ 2,261.73
610.8015.5603.000	MIDLAND SCIENTIFIC INC	Lab - 90mm filter papers	\$ 540.56
610.8015.5603.000	MIDLAND SCIENTIFIC INC	Lab - 1000mL beakers	\$ 186.64
610.8015.5603.000	MIDLAND SCIENTIFIC INC	Lab - EZ COD bucket	\$ 588.34
610.8015.5603.000	MIDLAND SCIENTIFIC INC	Lab - Nitrate Standard 1000ppm	\$ 93.09
610.8015.5603.000	MIDLAND SCIENTIFIC INC	Lab - Vortex-Genie 2T	\$ 806.62
610.8015.5603.000	MIDLAND SCIENTIFIC INC	Lab - ammonia standard and graduated cylinders	\$ 202.07
001.1099.5344.000	MIDWEST AUTOMATIC FIRE SPRINKLER CO	Annual fire sprinkler Insp. Police & Fire Bldg.	\$ 274.00
001.6050.5344.000	MIDWEST AUTOMATIC FIRE SPRINKLER CO	Annual fire sprinkler Insp. City Hall & YSS	\$ 274.00
001.2080.5344.000	Midwest Safety Counselors Inc	Hexane System Calibration at Airport	\$ 100.00
999.1131.000	Mission Square Retirement- 303417	Mission Square Retirement - Plan #303417ICMA DEF C	\$ 975.00
999.1131.000	Mission Square Retirement- 303417	ICMA DEF COMP	\$ 330.77
999.1131.000	Mission Square Retirement- 303417	Mission Square Retirement - Plan #705230	\$ 152.67
999.1131.000	Mission Square Retirement- 303417	Mission Square Retirement - Plan #705230	\$ 1,051.46
999.1131.000	Mission Square Retirement- 303417	Mission Square Retirement - Plan #705230	\$ 795.00
999.1131.000	Mission Square Retirement- 303417	Mission Square Retirement - Plan #303417	\$ 1,413.37
999.1131.000	Mission Square Retirement- 303417	ICMA DEFERRED COMP - Plan #303417	\$ 238.70
999.1131.000	Mission Square Retirement- 303417	Mission Square Retirement - Plan #303417ICMA DEF C	\$ 4,368.62
999.1131.000	Mission Square Retirement- 303417	ICMA DEF COMP	\$ 230.76
999.1131.000	Mission Square Retirement- 303417	Mission Square Retirement - Plan #705230	\$ 1,429.77
999.1131.000	Mission Square Retirement- 303417	Mission Square Retirement - Plan #705230	\$ 2,558.84
999.1131.000	Mission Square Retirement- 303417	Mission Square Retirement - 457b Plan #303417	\$ 575.00
999.1131.000	Mission Square Retirement- 303417	Mission Square Retirement - Plan #303417	\$ 1,404.03
999.1131.000	Mission Square Retirement- 303417	ICMA DEFERRED COMP - Plan #303417	\$ 238.70
999.1131.000	Mission Square Retirement- 303417	Mission Square Retirement - Plan #303417ICMA DEF C	\$ 4,368.62
999.1131.000	Mission Square Retirement- 303417	ICMA DEF COMP	\$ 230.76
999.1131.000	Mission Square Retirement- 303417	Mission Square Retirement - Plan #705230	\$ 1,429.77
999.1131.000	Mission Square Retirement- 303417	Mission Square Retirement - Plan #705230	\$ 2,558.84
999.1131.000	Mission Square Retirement- 303417	Mission Square Retirement - 457b Plan #303417	\$ 575.00
999.1131.000	Mission Square Retirement- 303417	Mission Square Retirement - Plan #303417ICMA DEF C	\$ 975.00
999.1131.000	Mission Square Retirement- 303417	ICMA DEF COMP	\$ 330.77
999.1131.000	Mission Square Retirement- 303417	Mission Square Retirement - Plan #705230	\$ 152.67
999.1131.000	Mission Square Retirement- 303417	Mission Square Retirement - Plan #705230	\$ 1,051.46
999.1131.000	Mission Square Retirement- 303417	Mission Square Retirement - Plan #705230	\$ 795.00

999.1150.000	Mission Square Retirement- 303417	EMPLOYEE RHS CONTRIBUTION	\$ 18,923.23
110.2040.5342.000	MOBOTREX INC	Labor to install batter backup for S Center & IA A	\$ 700.00
110.2040.5780.000	MOBOTREX INC	Red LED bulbs for traffic signals	\$ 528.00
184.5030.5242.000	MOJO Rentals	Rent Assistance	\$ 344.00
001.1010.5464.000	Molitor, Jacob	Reimbursement for meals	\$ 40.00
184.5030.5242.000	Moore, Michelle	Rent Assistance	\$ 295.00
184.5030.5242.000	Mtown/ Westown LLLP	Rent Assistance	\$ 348.00
184.5030.5242.000	Mtown/ Westown LLLP	Rent Assistance	\$ 196.00
184.5030.5242.000	Mtown/ Westown LLLP	Rent Assistance	\$ 152.00
184.5030.5242.000	Mtown/ Westown LLLP	Rent Assistance	\$ 154.00
184.5030.5242.000	Mtown/ Westown LLLP	Rent Assistance	\$ 235.00
184.5030.5242.000	Mtown/ Westown LLLP	Rent Assistance	\$ 390.00
184.5030.5242.000	Mtown/ Westown LLLP	Rent Assistance	\$ 388.00
184.5030.5242.000	Mtown/ Westown LLLP	Rent Assistance	\$ 382.00
184.5030.5242.000	Mtown/ Westown LLLP	Rent Assistance	\$ 382.00
184.5030.5242.000	Mtown/ Westown LLLP	Rent Assistance	\$ 376.00
184.5030.5242.000	Mtown/ Westown LLLP	Rent Assistance	\$ 372.00
184.5030.5242.000	Mtown/ Westown LLLP	Rent Assistance	\$ 363.00
184.5030.5242.000	Mtown/ Westown LLLP	Rent Assistance	\$ 324.00
184.5030.5242.000	Mtown/ Westown LLLP	Rent Assistance	\$ 346.00
184.5030.5242.000	Mtown/ Westown LLLP	Rent Assistance	\$ 225.00
184.5030.5242.000	Mtown/ Westown LLLP	Rent Assistance	\$ 135.00
184.5030.5242.000	Mtown/ Westown LLLP	Rent Assistance	\$ 406.00
184.5030.5242.000	Mtown/ Westown LLLP	Rent Assistance	\$ 268.00
184.5030.5242.000	Mtown/ Westown LLLP	Rent Assistance	\$ 271.00
999.1105.000	MUNICIPAL FIRE & POLICE RETIREMENT	PRIOR MONTH MFPRSI CONTRIBUTIONS	\$ 38,752.75
999.1105.000	MUNICIPAL FIRE & POLICE RETIREMENT	PRIOR MONTH MFPRSI CONTRIBUTIONS	\$ 34,610.28
999.1105.000	MUNICIPAL FIRE & POLICE RETIREMENT	PRIOR MONTH MFPRSI CONTRIBUTIONS	\$ 37,547.91
999.1105.000	MUNICIPAL FIRE & POLICE RETIREMENT	PRIOR MONTH MFPRSI CONTRIBUTIONS	\$ 34,641.51
110.2010.5626.000	National Sign Company LLC	orange warning flags, 6ft rakes	\$ 655.10
110.2010.5718.000	National Sign Company LLC	orange warning flags, 6ft rakes	\$ 174.00
610.8016.5600.000	National Sign Company LLC	Locate flags	\$ 418.78
740.8065.5600.000	National Sign Company LLC	Locate flags	\$ 279.18
184.5030.5242.000	Ndihokubwayo, Levis	Rent Assistance	\$ 497.00
184.5030.5242.000	Ndihokubwayo, Levis	Rent Assistance	\$ 299.00
610.8015.5600.000	Nebraska Air Filter Inc	Air filters	\$ 1,008.11
110.2010.5600.000	Nelson Fabrication LLC	Hose and cable protection	\$ 140.40
110.2010.5600.000	Nelson Fabrication LLC	hydraulic hose	\$ 328.75
184.5030.5242.000	NORTH TAMA HOUSING, INC	Rent Assistance	\$ 51.00
001.1010.5565.000	Nutrien AG Solutions Inc	Oil for vehicles	\$ 4,560.00
110.2010.5600.000	Nutrien AG Solutions Inc	Street mobile grease	\$ 350.00
184.5030.5242.000	Oetker, Debra	Rent Assistance	\$ 61.00
184.5030.5242.000	Oetker, Debra	Rent Assistance	\$ 56.00
001.1010.5605.000	OFFICE EXPRESS	Envelopes and batteries	\$ 104.00
001.1010.5605.000	OFFICE EXPRESS	Notary Stamp	\$ 29.99
886.2010.5216.000	One Source Aquisition Company LLC	Background Check - Streets	\$ 19.00
184.5030.5242.000	Park Elms LLC	Rent Assistance	\$ 666.00
184.5030.5242.000	Park Elms LLC	Rent Assistance	\$ 107.00
184.5030.5242.000	Park Elms LLC	Rent Assistance	\$ 195.00
184.5030.5246.000	Patton, Camille	Rent Assistance	\$ 46.00
Payroll	Payroll	Payroll #17 8.27.26	\$ 418,706.76
Payroll	Payroll	Payroll #18 9.15.26	\$ 404,182.92
610.8015.5600.000	PECH Optical Corp	S. Becker safety glasses	\$ 169.81
001.6025.5450.000	Petermeier, Jill	Monthly cell phone stipend	\$ 40.00
001.4030.5980.000	Peterson, Dustin	refund for riverview park bldg rental	\$ 185.00
184.5030.5242.000	PHR Properties LLC	Rent Assistance	\$ 320.00
001.4030.5611.000	Plumb Supply	Wall Hung Sink	\$ 91.22
001.4045.5611.000	Plumb Supply	Valve Repair Kit for 5872	\$ 217.96
184.5030.5242.000	Plymat Jr , William	Rent Assistance	\$ 546.00
001.1099.5342.000	Prairie Waste Solutions	Police and Fire Bldg	\$ 128.46
001.4010.5342.000	Prairie Waste Solutions	Library	\$ 124.98
001.4030.5342.000	Prairie Waste Solutions	Bullpen- Parks dept Woodland Dr	\$ 102.74
001.4030.5342.000	Prairie Waste Solutions	Public Works Bldg 905 E Main	\$ 25.69
001.5010.5342.000	Prairie Waste Solutions	Central Business District	\$ 209.00
001.6050.5342.000	Prairie Waste Solutions	City Hall and Carnegie Bldg	\$ 64.23
001.6051.5342.000	Prairie Waste Solutions	City Hall and Carnegie Bldg	\$ 64.23
110.2010.5342.000	Prairie Waste Solutions	Public Works Bldg 905 E Main	\$ 51.39
610.8015.5342.000	Prairie Waste Solutions	Water Pollution plant	\$ 128.46
690.8050.5342.000	Prairie Waste Solutions	Public Works Bldg 905 E Main	\$ 51.38
184.5030.5242.000	Premier Iowa City IA LLC	Rent Assistance	\$ 421.00
184.5030.5242.000	Premier Iowa City IA LLC	Rent Assistance	\$ 274.00

184.5030.5242.000	Premier Iowa City IA LLC	Rent Assistance	\$ 86.00
184.5030.5242.000	Premier Iowa City IA LLC	Rent Assistance	\$ 88.00
184.5030.5242.000	Premier Iowa City IA LLC	Rent Assistance	\$ 539.00
184.5030.5242.000	Premier Marshalltown IA LLC	Rent Assistance	\$ 443.00
184.5030.5242.000	Premier Marshalltown IA LLC	Rent Assistance	\$ 809.00
184.5030.5242.000	Premier Marshalltown IA LLC	Rent Assistance	\$ 433.00
184.5030.5242.000	Premier Marshalltown IA LLC	Rent Assistance	\$ 42.00
184.5030.5242.000	Pyramid Property Solutions Inc	Rent Assistance	\$ 312.00
184.5030.5242.000	Pyramid Property Solutions Inc	Rent Assistance	\$ 23.00
184.5030.5242.000	Pyramid Property Solutions Inc	Rent Assistance	\$ 443.00
001.1050.5413.000	QSC LLC	R177 Leaf spring/hardware replacement	\$ 1,578.02
184.5030.5242.000	R & A Rental Properties LLC	Rent Assistance	\$ 584.00
184.5030.5242.000	R & A Rental Properties LLC	Rent Assistance	\$ 443.00
001.1010.5600.000	RACOM CORPORATION	Battery	\$ 131.25
001.1050.5410.000	RACOM CORPORATION	Phoenix Paging System Repair	\$ 1,312.50
001.1010.5342.000	Rainbow Carwash LLC	Service call and repairs to wash bay	\$ 9.31
001.1050.5342.000	Rainbow Carwash LLC	Service call and repairs to wash bay	\$ 9.31
001.4030.5342.000	Rainbow Carwash LLC	Service call and repairs to wash bay	\$ 37.22
110.2010.5342.000	Rainbow Carwash LLC	Service call and repairs to wash bay	\$ 65.15
690.8050.5342.000	Rainbow Carwash LLC	Service call and repairs to wash bay	\$ 65.15
610.8015.5450.000	Ranson, Robert	Monthly cell phone stipend	\$ 40.00
151.1010.5718.000	Recon Power Bikes	Police power bike	\$ 5,396.00
184.5030.5242.000	Redborg, Kirsten	Rent Assistance	\$ 376.00
184.5030.5242.000	Reed, Tony	Rent Assistance	\$ 422.00
690.8050.5331.000	Region 6 Resource Partners	Para Transit Rides	\$ 11,937.00
001.1050.5413.000	RELIANT FIRE APPARATUS inc	E170 AC Pump Repair	\$ 731.52
001.1050.5565.000	RELIANT FIRE APPARATUS inc	E170 Air Compressor/Handle repair parts	\$ 1,175.86
001.1050.5565.000	RELIANT FIRE APPARATUS inc	E170 Air Compressor/Handle repair parts	\$ 349.50
184.5030.5242.000	Rice, Quinton	Rent Assistance	\$ 403.00
001.2060.5600.000	RICOH USA INC	Printer Waste Cartridge & Black Ink - 3rd Floor Ca	\$ 36.08
110.2060.5600.000	RICOH USA INC	Printer Waste Cartridge & Black Ink - 3rd Floor Ca	\$ 108.24
184.5030.5242.000	River Birch Apts	Rent Assistance	\$ 298.00
184.5030.5242.000	River Oaks Apartments	Rent Assistance	\$ 118.00
184.5030.5242.000	River Oaks Apartments	Rent Assistance	\$ 525.00
184.5030.5242.000	River Oaks Apartments	Rent Assistance	\$ 515.00
184.5030.5242.000	RMB Cooperative	Rent Assistance	\$ 1,000.00
184.5030.5242.000	RMB Cooperative	Rent Assistance	\$ 501.00
184.5030.5242.000	Rural Revival Properties LLC	Rent Assistance	\$ 320.00
001.1071.5342.000	Safe Building	Rental Inspection Service Agreement FY26/27	\$ 6,300.00
110.2010.5342.000	Safety Kleen Systems Inc	Street dept waste pickup and supplies	\$ 738.21
110.2010.5342.000	Safety Kleen Systems Inc	Street dept waste pickup and supplies	\$ 1,721.36
184.5030.5242.000	Sanchez-Santibanes, Juan	Rent Assistance	\$ 851.00
001.4030.5342.000	Schendel Pest Control Inc	City Hall/ Carnegie Bldg/ Parks office	\$ 22.90
001.6050.5342.000	Schendel Pest Control Inc	City Hall/ Carnegie Bldg/ Parks office	\$ 22.90
001.6051.5342.000	Schendel Pest Control Inc	City Hall/ Carnegie Bldg/ Parks office	\$ 23.58
184.5030.5242.000	Schmidt, Michael T	Rent Assistance	\$ 649.00
001.4065.5410.000	SCHUMACHER ELEVATOR COMPANY	Coliseum quarterly elevator maintenance	\$ 508.68
001.6050.5344.000	SCHUMACHER ELEVATOR COMPANY	City Hall Elevator Maintenance	\$ 258.98
001.6051.5344.000	SCHUMACHER ELEVATOR COMPANY	Carnegie Bldg elevator	\$ 261.61
110.2010.5386.000	Scrap and More LLC	August Mowing	\$ 475.00
001.1010.5280.000	Seiler Instrument & Manufacturing Co Inc	Trimble Forensics	\$ 710.00
001.6021.5410.000	SIGN CREATIONS	Wall decal and installation Finance office	\$ 190.00
364.4030.5342.000	Snyder & Associates Inc	West End Park Glow Trail & Bridge	\$ 12,896.00
364.4030.5342.000	Snyder & Associates Inc	West End Park Glow Trail & Bridge	\$ 10,760.00
364.4030.5342.000	Snyder & Associates Inc	West End Park Glow Trail & Bridge	\$ 9,984.00
740.8065.5600.000	SPAHN & ROSE LUMBER CO	Storm sewer repair curb form	\$ 27.58
001.1099.5410.000	Specified Design Consultants, Inc	Boiler igniter for Police & Fire Bldg.	\$ 252.00
121.4040.5230.000	Sports Facilities Advisory	Youth & adult recreational sports master plan	\$ 14,750.00
184.5030.5246.000	Squires, Christina	Rent Assistance	\$ 84.00
001.1010.5344.000	STERLING FIRE & SAFETY INC	Police Dept. Recharge fire extinguishers	\$ 270.00
001.1010.5344.000	STERLING FIRE & SAFETY INC	Fire extinguisher annual inspection Hoop Bldgs	\$ 14.45
001.1010.5344.000	STERLING FIRE & SAFETY INC	Annual fire extinguisher insp and service PD	\$ 534.50
001.1050.5344.000	STERLING FIRE & SAFETY INC	Annual fire extinguisher insp. & serv Fire Dept.	\$ 374.50
001.4030.5344.000	STERLING FIRE & SAFETY INC	Fire extinguisher annual inspection Hoop Bldgs	\$ 21.68
110.2010.5344.000	STERLING FIRE & SAFETY INC	Fire extinguisher annual inspection Hoop Bldgs	\$ 14.45
610.8015.5344.000	STERLING FIRE & SAFETY INC	Fire extinguisher annual inspection Hoop Bldgs	\$ 50.58
610.8015.5344.000	STERLING FIRE & SAFETY INC	WPCP 2026 annual inspection fire extinguishers	\$ 456.50
610.8016.5344.000	STERLING FIRE & SAFETY INC	Fire extinguisher annual inspection Hoop Bldgs	\$ 21.67
740.8065.5344.000	STERLING FIRE & SAFETY INC	Fire extinguisher annual inspection Hoop Bldgs	\$ 14.45
750.8070.5344.000	STERLING FIRE & SAFETY INC	Fire extinguisher annual inspection Hoop Bldgs	\$ 7.22
184.5030.5246.000	Stiegelmeier, Curtis	Rent Assistance	\$ 10.00

184.5030.5242.000	Superior Rentals LLC	Rent Assistance	\$	187.00
184.5030.5242.000	Superior Rentals LLC	Rent Assistance	\$	214.00
184.5030.5242.000	Superior Rentals LLC	Rent Assistance	\$	241.00
184.5030.5242.000	Superior Rentals LLC	Rent Assistance	\$	282.00
184.5030.5242.000	Superior Rentals LLC	Rent Assistance	\$	327.00
184.5030.5242.000	Sweet Pea	Rent Assistance	\$	230.00
184.5030.5242.000	Sweet Pea	Rent Assistance	\$	616.00
184.5030.5242.000	Swift, Scott	Rent Assistance	\$	422.00
001.4030.5565.000	Theisens Supply Inc	Pump and Nozzle	\$	479.99
001.6050.5600.000	Theisens Supply Inc	wasp/hornet spray for buildings	\$	9.87
110.2010.5132.000	Theisens Supply Inc	Street employee clothing	\$	109.98
110.2010.5132.000	Theisens Supply Inc	Street employee taxable clothing	\$	19.00
110.2010.5132.000	Theisens Supply Inc	Gloves Lance Mitchell	\$	31.98
110.2010.5132.000	Theisens Supply Inc	Street employee taxable clothing	\$	32.00
110.2010.5600.000	Theisens Supply Inc	Bushing adapt	\$	9.98
110.2010.5600.000	Theisens Supply Inc	Bushing adapt	\$	(9.98)
110.2010.5718.000	Theisens Supply Inc	32" handle lopper	\$	132.99
110.2010.5718.000	Theisens Supply Inc	Truck 13 search light	\$	119.00
110.2030.5132.000	Theisens Supply Inc	High Vis safety vest Utility Dept. PPE	\$	53.97
610.8016.5132.000	Theisens Supply Inc	sewer dept employee boots	\$	(89.99)
610.8016.5132.000	Theisens Supply Inc	sewer dept employee boots	\$	110.99
610.8016.5600.000	Theisens Supply Inc	Mortar mix	\$	25.16
610.8016.5600.000	Theisens Supply Inc	Work gloves	\$	15.59
610.8016.5600.000	Theisens Supply Inc	small engine fuel 50:1 premix	\$	16.80
610.8016.5600.000	Theisens Supply Inc	Grass seed for post repair yard restorations	\$	52.35
740.8065.5132.000	Theisens Supply Inc	sewer dept employee boots	\$	74.00
740.8065.5132.000	Theisens Supply Inc	sewer dept employee boots	\$	(60.00)
740.8065.5600.000	Theisens Supply Inc	Mortar mix	\$	16.78
740.8065.5600.000	Theisens Supply Inc	Work gloves	\$	10.39
740.8065.5600.000	Theisens Supply Inc	small engine fuel 50:1 premix	\$	11.20
740.8065.5600.000	Theisens Supply Inc	Grass seed for post repair yard restorations	\$	34.90
001.1010.5450.000	T-Mobile	Phones	\$	168.54
001.1010.5450.000	T-Mobile	Phone services	\$	2,577.14
001.1070.5450.000	T-Mobile	ASST HSG DIRECTOR	\$	7.14
001.1070.5450.000	T-Mobile	HOUSING DIRECTOR	\$	5.00
001.1071.5450.000	T-Mobile	RENTAL INSPEC	\$	35.71
001.1071.5450.000	T-Mobile	RENTAL IPAD	\$	22.07
001.1071.5450.000	T-Mobile	ASST HSG DIRECTOR	\$	7.14
001.1071.5450.000	T-Mobile	HOUSING DIRECTOR	\$	5.00
001.1075.5450.000	T-Mobile	HOUSING DIRECTOR	\$	5.00
001.1075.5450.000	T-Mobile	NUISANCE	\$	35.71
001.1075.5450.000	T-Mobile	ASST HSG DIRECTOR	\$	7.15
001.1075.5450.000	T-Mobile	NUISANCE/ PARKING	\$	17.86
001.2020.5450.000	T-Mobile	ASST HSG DIRECTOR	\$	7.14
001.2020.5450.000	T-Mobile	HOUSING DIRECTOR	\$	5.00
001.2020.5450.000	T-Mobile	NUISANCE/ PARKING	\$	17.85
001.4030.5450.000	T-Mobile	PARK & REC DIRECTOR	\$	35.71
001.5040.5450.000	T-Mobile	ASST HSG DIRECTOR	\$	7.14
001.5040.5450.000	T-Mobile	HOUSING DIRECTOR	\$	5.00
110.2010.5450.000	T-Mobile	SIGN SHOP	\$	22.07
110.2010.5450.000	T-Mobile	MECHANIC iPad	\$	22.07
110.2040.5450.000	T-Mobile	UTILITY DEPT	\$	35.71
110.2060.5450.000	T-Mobile	SURVEY GPS	\$	31.85
110.2060.5450.000	T-Mobile	ENGINEERING JETPAK	\$	31.85
110.2060.5450.000	T-Mobile	PW DIRECTOR	\$	35.71
110.2060.5450.000	T-Mobile	PW IPAD	\$	6.18
181.3040.5450.000	T-Mobile	HOUSING DIRECTOR	\$	2.50
184.5030.5450.000	T-Mobile	HOUSING DIRECTOR	\$	8.21
610.8015.5450.000	T-Mobile	WPCP OPER	\$	35.71
610.8015.5450.000	T-Mobile	SEWER HOT SPOT	\$	19.11
610.8016.5450.000	T-Mobile	SEWER SUPT TROY MCGAUGHEY	\$	21.43
610.8016.5450.000	T-Mobile	PW IPAD	\$	9.49
610.8016.5450.000	T-Mobile	SEWER HOT SPOT	\$	19.11
740.8065.5450.000	T-Mobile	SEWER HOT SPOT	\$	12.74
740.8065.5450.000	T-Mobile	PW IPAD	\$	6.40
740.8065.5450.000	T-Mobile	SEWER SUPT TROY MCGAUGHEY	\$	14.28
740.8065.5450.000	T-Mobile	SEWER HOT SPOT	\$	12.74
999.1128.000	TOTAL ADMINISTRATIVE SERVICE CORP.	FLEX HEALTH BENEFITS	\$	951.63
999.1128.000	TOTAL ADMINISTRATIVE SERVICE CORP.	FLEX HEALTH BENEFITS	\$	5,964.20
999.1129.000	TOTAL ADMINISTRATIVE SERVICE CORP.	FLEX DEP CARE BENEFITS	\$	312.50
999.1129.000	TOTAL ADMINISTRATIVE SERVICE CORP.	FLEX DEP CARE BENEFITS	\$	1,454.57

184.5030.5242.000	Town Apartments Corporation	Rent Assistance	\$ 273.00
184.5030.5242.000	Town Apartments Corporation	Rent Assistance	\$ 419.00
999.1102.000	TREASURER STATE OF IOWA	Bi-Weekly Payroll SIT	\$ 5,243.68
999.1102.000	TREASURER STATE OF IOWA	Bi-Weekly Payroll SIT	\$ 10,756.70
999.1102.000	TREASURER STATE OF IOWA	Bi-Weekly Payroll SIT	\$ 10,752.73
999.1102.000	TREASURER STATE OF IOWA	Bi-Weekly Payroll SIT	\$ 5,383.33
001.4030.5611.000	Tri State Lock Service	Keys	\$ 80.00
184.5030.5242.000	TTLCoop Housing	Rent Assistance	\$ 248.00
184.5030.5242.000	TTLCoop Housing	Rent Assistance	\$ 448.00
001.6070.5347.000	Tyler Technologies Inc	Municipal justice annual maint 10/1/26-9/30/27	\$ 4,980.95
363.6021.5980.000	UNITED STATES TREASURY	2021 ARBITRAGE	\$ 424,690.78
999.1112.000	UNITED WAY	UNITED WAY	\$ 20.00
999.1112.000	UNITED WAY	UNITED WAY	\$ 222.00
999.1112.000	UNITED WAY	UNITED WAY	\$ 20.00
999.1112.000	UNITED WAY	UNITED WAY	\$ 222.00
110.2010.5339.000	Unity Point Health at Work - Des Moines	Lab Analysis DOT	\$ 84.00
690.8050.5339.000	Unity Point Health at Work - Des Moines	Lab Analysis DOT	\$ 42.00
184.5030.5246.000	Valdez, Elicia	Rent Assistance	\$ 7.00
001.4030.5562.000	VANWALL EQUIPMENT INC	Wipes and Spindle	\$ 240.34
001.4030.5562.000	VANWALL EQUIPMENT INC	Spindle	\$ 218.10
001.1070.5342.000	Veenstra & Kimm Inc	V&K BLG Perm Fee March 2026	\$ 29,447.97
001.1070.5342.000	Veenstra & Kimm Inc	V&K monthly services	\$ 7,612.15
184.5030.5242.000	Walker, Angela	Rent Assistance	\$ 308.00
001.4030.5980.000	Wantiez, Darci	replace cable damaged at campground	\$ 35.29
184.5030.5238.000	WATERLOO HOUSING AUTHORITY	Hud Admin90126	\$ 62.79
184.5030.5242.000	WATERLOO HOUSING AUTHORITY	Rent Assistance	\$ 601.00
184.5030.5246.000	Weatherly, Cassandra	Rent Assistance	\$ 31.00
001.6012.5450.000	Webb, Carol	Annual cell phone reimbursement	\$ 480.00
615.8015.5342.000	Wendler Inc	WPC24001 WPCP Sludge Thick Const 8/1/26-8/31/26	\$ 239,056.99
184.5030.5242.000	White, Amalia	Rent Assistance	\$ 703.00
001.4040.5358.000	Wickham, Michael	Taekwondo Classes - 8/27/26-10/01/26	\$ 750.00
884.7010.5980.000	Wilson, Herbert	Retiree Ins Reimbursement - Wilson	\$ 361.30
001.4010.5482.000	WoodRiver Energy LLC	Library gas #7078	\$ 76.30
110.2010.5482.000	WoodRiver Energy LLC	905 E Main St	\$ 37.72
690.8050.5482.000	WoodRiver Energy LLC	905 E Main St	\$ 25.15
184.5030.5242.000	Worsfold Farm LLC	Rent Assistance	\$ 362.00
001.4010.5410.000	WW GRAINGER	Library replacement toilet seat	\$ 54.82
110.2010.5718.000	WW GRAINGER	Street Dept. tool cable tie gun	\$ 85.00
750.8070.5410.000	WW GRAINGER	Replacement electric water heater Compost	\$ 240.04
001.4030.5344.000	Xerox Corp	Park & Rec contract and copies	\$ 250.33
001.4030.5344.000	Xerox Corp	Park & Rec contract and copies	\$ 250.70
001.4030.5344.000	Xerox Corp	Park & Rec contract and copies	\$ 253.40
001.4030.5344.000	Xerox Corp	Park & Rec contract and copies	\$ 252.05
001.4030.5344.000	Xerox Corp	Park & Rec contract and copies	\$ 336.76
610.8015.5344.000	Xerox Corp	WPCP Aug. '26 xerox & copies	\$ 45.93
001.6050.5482.000	YSS Grants Billing	Contract gas billing 50% April-June	\$ 703.77
389.1010.5230.000	YSS Grants Billing	YSS Grant Billing	\$ 10,492.38
389.1010.5230.000	YSS Grants Billing	YSS Grant Billing	\$ 13,618.31
389.1010.5230.000	YSS Grants Billing	YSS Grant Billing	\$ 18,704.12
364.2012.5331.000	Zaragoza, Maria	4 E Main St Cost Share - ROW Stair Removal	\$ 2,025.00
001.1050.5600.000	Zep Sales & Service	ZEP 5GL Truck Wash	\$ 112.00
110.2010.5600.000	Ziegler Inc	Street dept nuts bolts washers	\$ (161.30)
610.8016.5412.000	Ziegler Inc	Service call Marion St. lift station	\$ 2,583.06
TOTAL			\$ 4,002,902.24



< CITY OF MARSHALLTOWN

Local Authority Review - Alcohol Ownership

CITY OF MARSHALLTOWN

1300371903

>

Owners

Business Information

Customer Type

BUS

Business Sub-Type

Corporation

Business Designation

Legal Business Name

CASEYS MARKETING COMPANY

Old Ownership Information

Owner Type	Owner	Single Line Address	Ownership Percentage
Owner	FABER, SCOTT	6749 CARDIFF CT JOHN	0.00
Owner	LARSEN, ERIC	4407 NW 5TH ST ANKE	0.00
Owner	BEECH, DOUGLAS	729 NE BROOK HAVEN	0.00
Company	CASEY'S GENERAL STOI 1 SE CONVENIENCE BL		100.00

Can I help?

 Owner	JOHNSON, BRIAN	9129 NW 73RD CIR JOH	0.00
 Owner	JAMES, SAMUEL	3204 NE AVERY DR ANI	0.00

Updated Ownership Information

Owner Type	Owner	Single Line Address	Ownership Percentage
 Owner	FABER, SCOTT	6749 CARDIFF CT JOHN	0.00
 Owner	LARSEN, ERIC	4407 NW 5TH ST ANKE	0.00
 Owner	BEECH, DOUGLAS	729 NE BROOK HAVEN	0.00
 Company	CASEY'S GENERAL STO	1 SE CONVENIENCE BL	100.00
 Owner	JOHNSON, BRIAN	9129 NW 73RD CIR JOH	0.00
 Owner	JAMES, SAMUEL	3204 NE AVERY DR ANI	0.00
 Owner	KOBER, PARKER	700 SE 15TH ST GRIME	0.00

Impacted Active Alcohol Licenses

Jurisdiction Code	Permit Type	License Number	Address
City of Marshalltown	Class "E" Retail Alcc	LE0002768	108 IOWA AVE W MARSH
City of Marshalltown	Class "E" Retail Alcc	LE0002278	916 E MAIN ST MARSHAL

[Can I help?](#)

City of Marshalltow Class "E" Retail Alcc LE0003193	111 N 3RD AVE MARSHAL
City of Marshalltow Class "E" Retail Alcc LE0002874	1402 S 12TH AVE MARSH,
City of Marshalltow Class "E" Retail Alcc LE0003543	1009 W LINCOLN WAY M,

Criminal History

Has anyone listed on the Ownership page been charged or convicted of a felony offense in Iowa or any other state of the United States?

No

Has anyone listed on the Ownership page been convicted of any violation of any state, county, city, federal or foreign law? For traffic violations, only include those that are drug or alcohol related.

No

Local Authority Information

Local Authority Reviewing	Local Authority Signature Date
City of Marshalltown	
Approved/Denied *	Local Authority Email *
Required	Required
Local Authority Attestation Name *	Local Authority Contact Phone Number *
Required	Required

Comments

Can I help?



Cancel

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Your online session will timeout after 30 minutes of inactivity. All unsaved information will be lost.

Resources

- Frequently Asked Questions
- Contact Us
- Subscribe to Updates

Other Links

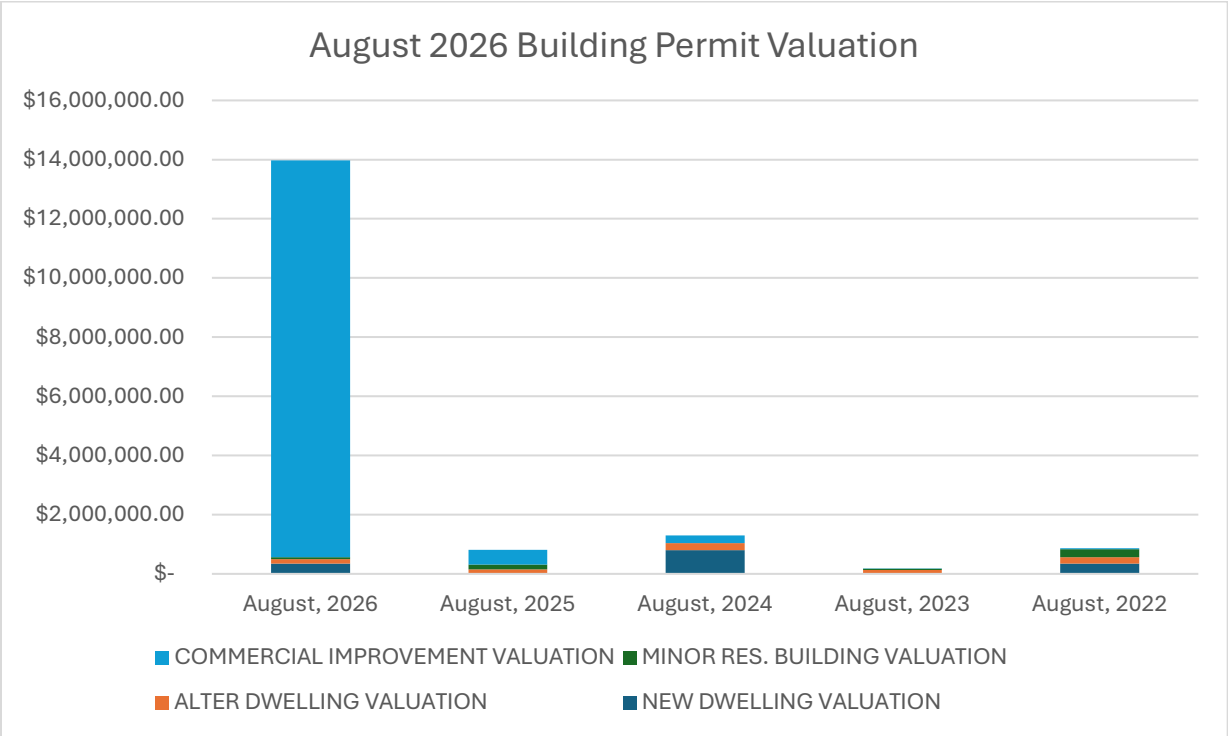
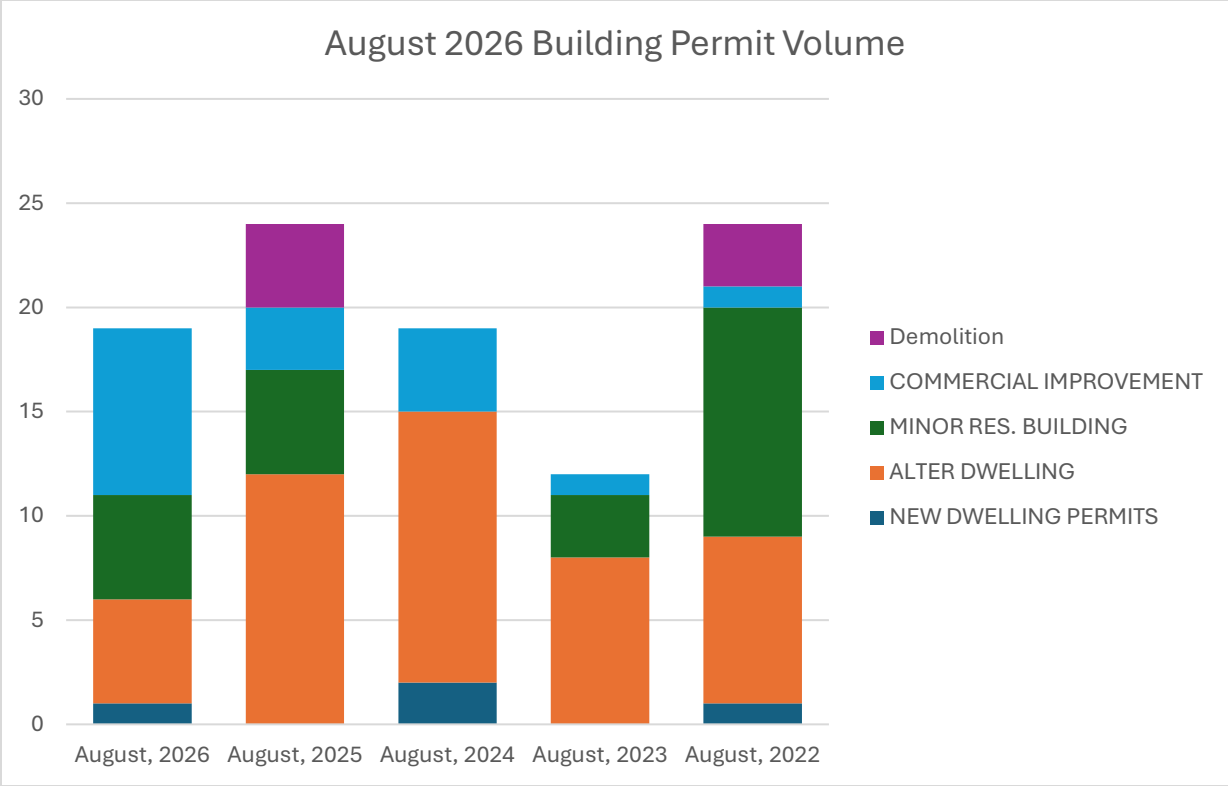
- State of Iowa Directory
- Website Policies

BUILDING REPORT FOR THE MONTH OF AUGUST 2026

MARSHALLTOWN

IOWA

PERMIT NUMBER	OWNER OF IMPROVEMENT	LOCATION OF IMPROVEMENT	TYPE OF IMPROVEMENT	NEW DWELLING	ALTER DWELLING	MINOR RES. BUILDING	COMMERCIAL IMPROVEMENT	FEE
BLDC-011988-2026		212 E STATE ST	NEW CONSTRUCTION - MCDONALD'S				\$ 856,224.60	\$ 12,259.20
BLDR-012531-2026		1002 PRAIRIE LN	NEW CONSTRUCTION - SINGLE FAMILY DETACHED	\$ 352,161.52				\$ 2,501.00
BLDR-012484-2026		806 W LINCOLN WAY	ALTERATION - GARAGE		\$ 11,200.00			\$ 201.00
BLDC-012501-2026		2500 S CENTER ST	ALTERATION - MAURICES TENANT IMPROVEMENT				\$ 221,259.86	\$ 1,715.00
BLDR-012554-2026		1203 S 3RD AVE	ALTERATION - SINGLE FAMILY HOME REPAIR/REBUILD		\$ 62,280.00			\$ 724.00
BLDC-012510-2026		19 W MAIN ST	ALTERATION - INTERIOR MODIFICATION				\$ 5,758.00	\$ 117.00
BLDR-012487-2026		407 S 2ND ST	ALTERATION - PORCH ADDITION		\$ 4,320.00			\$ 103.00
BLDR-012503-2026		913 JACKSON ST	ADDITION		\$ 70,368.00			\$ 780.00
BLDR-012539-2026		408 S 2ND ST	ACCESSORY STRUCTURE - SHED			\$ 8,400.00		\$ 159.00
BLDR-012568-2026		1305 W CHURCH ST	ALTERATION - DETACHED GAERAGE ADDITION			\$ 6,650.00		\$ 131.00
BLDR-012563-2026		104 CHERRY ST	ALTERATION - BASEMENT WALL MODIFICATION		\$ 2,640.00			\$ 75.00
BLDC-012275-2026		2114 E NEVADA ST	NEW CONSTRUCTION - POWER PLANT				\$ 12,063,123.86	\$ 82,729.35
BLDC-012573-2026		104 S 8TH AVE	ALTERATION - INTERIOR OFFICE REMODEL				\$ 205,863.93	\$ 1,619.00
BLDC-012419-2026		11 W LINN ST	ALTERATION - ADA ACCESSABILITY IMPROVEMENTS				\$ 34,679.96	\$ 483.00
BLDC-012478-2026		711 S 3RD AVE	ALTERATION - REPAIR				\$ 25,591.20	\$ 393.00
BLDC-012486-2026		111 E LINN ST	ALTERATION - PATIO ROOF				\$ 6,000.00	\$ 117.00
BLDR-012589-2026		1209 E NEVADA ST	ACCESSORY STRUCTURE - DETACHED GARAGE			\$ 5,040.00		\$ 117.00
BLDR-012603-2026		602 WOODBURY ST	ACCESSORY STRUCTURE - DETACHED GARAGE			\$ 30,240.00		\$ 443.00
BLDR-012605-2026		2509 S 6TH ST	ACCESSORY STRUCTURE - SHED			\$ 5,600.00		\$ 117.00
TOTALS:				\$352,161.52	\$150,808.00	\$55,930.00	\$13,418,501.41	\$104,783.55
TOTAL IMPROVEMENT AMOUNT:							\$13,977,400.93	
				Units	Permits	Permits	Permits	Demo Permits
*Work started without a permit - fee is doubled				# OF PERMITS:	1	5	5	8
								0



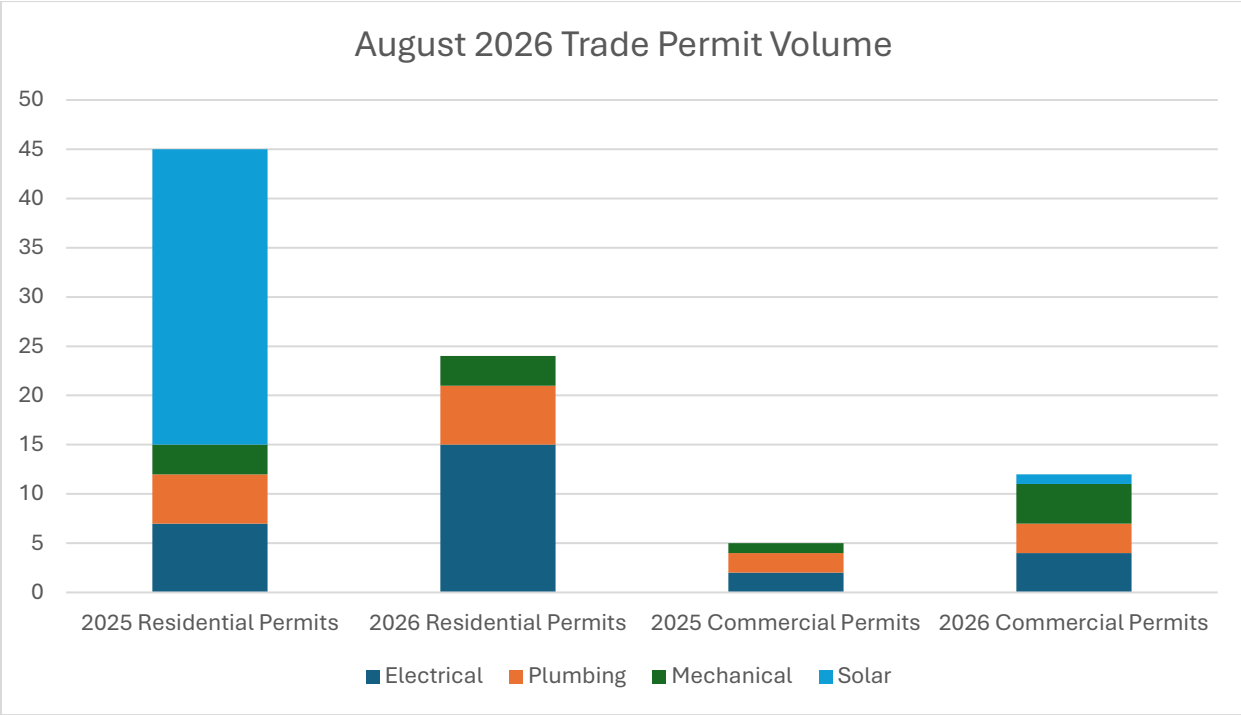
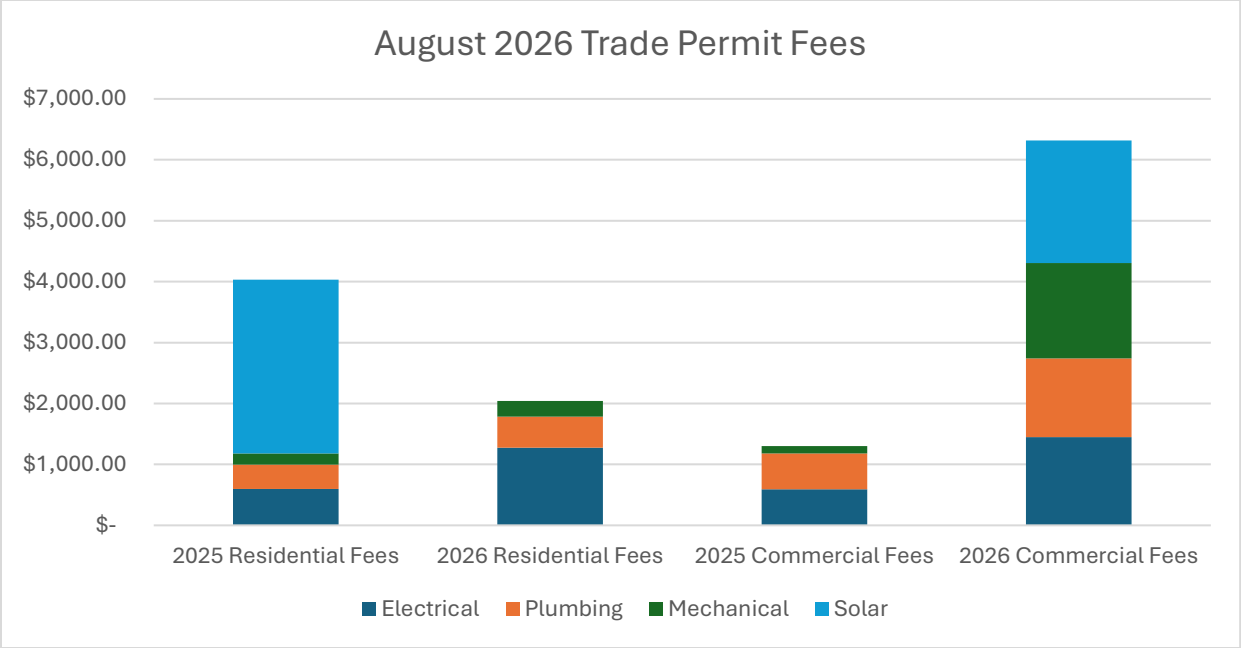
TRADE PERMIT REPORT FOR THE MONTH OF AUGUST 2026

MARSHALLTOWN

IOWA

PERMIT NUMBER	LOCATION OF IMPROVEMENT	RESIDENTIAL/ COMMERCIAL	PERMIT TYPE (ELEC., PLUMB., MECH. OR SOLAR)	VALUATION	FEE
ELEC-012011-2026	212 E STATE ST	COMMERCIAL	ELECTRICAL	\$ 205,000.00	\$ 1,070.00
PLMC-012012-2026	212 E STATE ST	COMMERCIAL	PLUMBING	\$ 120,000.00	\$ 645.00
MECH-012013-2026	212 E STATE ST	COMMERCIAL	MECHANICAL	\$ 122,000.00	\$ 655.00
ELER-012520-2026	104 N 15TH ST	RESIDENTIAL	ELECTRICAL		\$ 85.00
ELER-012518-2026	519 FRIENDLY DR	RESIDENTIAL	ELECTRICAL		\$ 85.00
ELER-012519-2026	401 DENNIS DR	RESIDENTIAL	ELECTRICAL		\$ 85.00
ELER-012529-2026	505 SUNSET LN	RESIDENTIAL	ELECTRICAL		\$ 85.00
ELER-012527-2026	202 PLEASANTVIEW RD	RESIDENTIAL	ELECTRICAL		\$ 85.00
MECH-012555-2026	212 N 11TH ST	RESIDENTIAL	MECHANICAL		\$ 85.00
ELEC-012381-2026	306 W MADISON ST	COMMERCIAL	ELECTRICAL	\$ 8,000.00	\$ 85.00
PLMR-012436-2026	705 W SOUTHRIDGE RD	RESIDENTIAL	PLUMBING		\$ 85.00
PLMR-012488-2026	501 DEBRA DR	RESIDENTIAL	PLUMBING		\$ 85.00
PLMR-012492-2026	2302 WAKEFIELD DR	RESIDENTIAL	PLUMBING		\$ 85.00
PLMR-012491-226	801 HENRY DR	RESIDENTIAL	PLUMBING		\$ 85.00
ELEC-012533-2026	1734 COUNTRY CLUB LN	COMMERCIAL	ELECTRICAL	\$ 5,000.00	\$ 105.00
ELER-012561-2026	104 CHERRY ST	RESIDENTIAL	ELECTRICAL		\$ 85.00
MECH-012505-2026	2305 S CENTER ST	COMMERCIAL	MECHANICAL	\$ 20,000.00	\$ 180.00
MECH-012523-2026	1605 S 5TH ST	RESIDENTIAL	MECHANICAL		\$ 85.00
MECH-012525-2026	1701 HILLCREST RD	RESIDENTIAL	MECHANICAL		\$ 85.00
PLMR-012581-2026	409 W STATE ST	RESIDENTIAL	PLUMBING		\$ 85.00
PLMR-012583-2026	811 N 4TH AVE	RESIDENTIAL	PLUMBING		\$ 85.00
ELEC-012216-2026	1209 INDUSTRIAL BLVD	COMMERCIAL	ELECTRICAL	\$ 29,000.00	\$ 190.00
ELER-012443-2026	1311 W CHURCH ST	RESIDENTIAL	ELECTRICAL		\$ 85.00
ELER-012504-2026	416 HUGHES ST	RESIDENTIAL	ELECTRICAL		\$ 85.00
ELER-012551-2026	2005 CATALINA PL	RESIDENTIAL	ELECTRICAL		\$ 85.00
ELER-012557-2026	207 THUNDERBIRD DR	RESIDENTIAL	ELECTRICAL		\$ 85.00
ELER-012584-2026	104 N 13TH AVE	RESIDENTIAL	ELECTRICAL		\$ 85.00
ELER-012564-2026	909 PRAIRIE LN	RESIDENTIAL	ELECTRICAL		\$ 85.00
ELER-012570-2026	1706 COUNTRY CLUB PL	RESIDENTIAL	ELECTRICAL		\$ 85.00
MECH-012593-2026	907 S CENTER ST	COMMERCIAL	MECHANICAL	\$ 20,884.46	\$ 185.00
ELER-012600-2026	203 S 9TH ST	RESIDENTIAL	ELECTRICAL		\$ 85.00
ELEC-012599-2026	1776 GOVERNOR RD	COMMERCIAL	SOLAR	\$ 385,700.00	\$ 2,010.00
PLMC-012607-2026	19 W MAIN ST	COMMERCIAL	PLUMBING	\$ 6,000.00	\$ 110.00
PLMC-012521-2026	202 IOWA AVE W	COMMERCIAL	PLUMBING	\$ 90,401.00	\$ 535.00
MECH-012522-2026	202 IOWA AVE W	COMMERCIAL	MECHANICAL	\$ 92,348.00	\$ 545.00
ELER-012598-2026	406 N 4TH ST	RESIDENTIAL	ELECTRICAL		\$ 85.00

	Residential Permits	Residential Value	Residential Fees	Commercial Permits	Commercial Value	Commercial Fees	Total Fees
Electrical	15	\$ -	\$ 1,275.00	4	\$ 247,000.00	\$ 1,450.00	\$ 2,810.00
Plumbing	6	\$ -	\$ 510.00	3	\$ 216,401.00	\$ 1,290.00	\$ 1,800.00
Mechanical	3	\$ -	\$ 255.00	4	\$ 255,232.46	\$ 1,565.00	\$ 1,820.00
Solar	0	\$ -	\$ -	1	\$ 385,700.00	\$ 2,010.00	\$ 2,010.00
TOTALS	24	\$ -	\$ 2,040.00	12	\$ 1,104,333.46	\$ 6,315.00	\$ 8,440.00





**MARSHALLTOWN
MORE THAN EVER**

**Mike Ladehoff, Mayor
Carol Webb, City Administrator
24 North Center Street
Marshalltown, IA 50158
PH 641.754.5701 • FX 641.754.5717**

To: Mayor and City Council
From: Cole O'Donnell, Finance Director
Meeting Date: September 14, 2026
Re: Approve July 2026 Monthly Financial Statements

Strategic Plan Objective:

N/A

Recommended:

Staff recommends approval of the July 2026 Financial Statements.

Budget Impact:

N/A

Description/Background:

The Finance Department has prepared and reconciled the July 2026 financial statements for your review. The budgeted amounts shown are based on the FY27 budget that was approved in April 2026.

The attached reports include the following:

- Fund Balance Report, which includes the beginning balance at 07/01/2026, the year-to-date revenues and expenses for 1 month, and the ending fund cash balance at 07/31/2026.
- Cash & Investments Report, which includes current balances and interest rates for all city investments.
- Monthly Budget Report, which reflects monthly and year-to-date revenues and expenses by each fund and then in summary. If the YTD Activity amount is less than the YTD Budget amount, it will show as unfavorable for revenues and favorable for expenses.

Items of interest this month:

- Several funds are still awaiting grant reimbursements and remain in a negative balance.
- Investment rates range from 3.393-4.10. Several CDs were purchased in July with

excellent rates. IPAIT has the lowest rate of return and staff moved some funds from the IPAIT General Account to timed investments with higher rates.

Attachments:

1. JULY FINANCIAL REPORTS

MARSHALLTOWN

IOWA

FUND BALANCE REPORT AS OF 7/31/26

Fund	Beginning Balance	Total Revenues	Total Expenses	Ending Balance
001 - GENERAL FUND	\$ 3,687,037.61	\$ 395,614.69	\$ 2,286,135.14	\$ 1,796,517.16
010 - CASH FLOW RESERVE FUND	\$ 3,923,914.15	\$ 13,282.44	\$ -	\$ 3,937,196.59
011 - INSURANCE DEDUCTIBLE RESERVE FUND	\$ 373,452.36	\$ 1,264.14	\$ -	\$ 374,716.50
030 - CAPITAL RESERVE	\$ -	\$ 43,498.00	\$ 43,498.00	\$ -
031 - CAPITAL RSRV-BLDG MAINT	\$ 208,156.17	\$ 704.61	\$ -	\$ 208,860.78
032 - CIP LARGE VEHICLE/EQUIPMENT	\$ 320,759.52	\$ -	\$ -	\$ 320,759.52
110 - ROAD USE TAX	\$ 13,546,120.58	\$ 372,025.66	\$ 328,598.36	\$ 13,589,547.88
111 - ROAD USE TAX INSURANCE RESERVE	\$ 106,725.94	\$ 361.27	\$ -	\$ 107,087.21
112 - EMPLOYEE BENEFITS FUND	\$ 2,856,263.07	\$ 44,095.24	\$ -	\$ 2,900,358.31
117 - POLICE/FIRE RETIREMENT	\$ 368,892.09	\$ 11,272.25	\$ -	\$ 380,164.34
121 - LOCAL OPTION SALES TAX	\$ 4,655,740.23	\$ 416,375.53	\$ 13,567.50	\$ 5,058,548.26
125 - TAX INCREMENT FINANCING	\$ 285,023.58	\$ 24,409.09	\$ -	\$ 309,432.67
126 - TIF-LMI	\$ 9,265.29	\$ 31.36	\$ -	\$ 9,296.65
130 - CITY TORT LIABILITY	\$ 113,368.03	\$ 317.15	\$ 19,675.70	\$ 94,009.48
133 - UNDESIGNATED FEDERAL GRANTS	\$ (649.00)	\$ -	\$ 95,921.50	\$ (96,570.50)
139 - PLEASANT HILL POOL FOUNDATION	\$ 27,810.00	\$ -	\$ -	\$ 27,810.00
140 - PARK & REC DONATION FUND	\$ 373,681.97	\$ 69,730.19	\$ 424.83	\$ 442,987.33
142 - SOFTBALL ASSOCIATION FUND	\$ (6,793.98)	\$ -	\$ 7,175.77	\$ (13,969.75)
144 - LIVE HEALTHY IOWA	\$ 10,648.79	\$ 36.05	\$ -	\$ 10,684.84
145 - TORNADO GENERAL	\$ 40,000.00	\$ -	\$ -	\$ 40,000.00
149 - FEMA - WINDS	\$ 379,973.27	\$ -	\$ -	\$ 379,973.27
150 - LOCAL PD GRANTS	\$ (4,164.81)	\$ -	\$ 7,583.54	\$ (11,748.35)
151 - DEPT OF JUSTICE GRANTS	\$ (5,829.50)	\$ -	\$ -	\$ (5,829.50)
152 - POLICE UNDESIGNATED GRANTS	\$ (13,269.61)	\$ 14,317.11	\$ 10,389.63	\$ (9,342.13)
153 - POLICE DEPT DONATION FUND	\$ 60,949.80	\$ 197.85	\$ 2,499.83	\$ 58,647.82
154 - AUTOMATED TRAFFIC ENFORCEMENT	\$ 116,643.56	\$ 29,918.69	\$ 9,485.00	\$ 137,077.25
156 - FIRE DEPT DONATION FUND	\$ 33,709.49	\$ 61.75	\$ 15,467.58	\$ 18,303.66
160 - ECONOMIC DEVELOPMENT GIFT	\$ 41,748.44	\$ 141.32	\$ -	\$ 41,889.76
161 - SURETY DEPOSITS/SUBDIVIDER	\$ 13,041.16	\$ 44.14	\$ -	\$ 13,085.30
170 - LIBRARY DONATION FUND	\$ 293,550.81	\$ 2,754.20	\$ 1,830.33	\$ 294,474.68
177 - SEIZED ASSETS (POLICE)	\$ 20,916.85	\$ 44.41	\$ -	\$ 20,961.26
181 - #7 HUD LEAD GRANT	\$ (346,105.82)	\$ -	\$ 105,452.46	\$ (451,558.28)
184 - VOUCHERS - 002, 003	\$ 380,432.06	\$ 115,879.01	\$ 118,811.52	\$ 377,499.55
189 - #6 HUD LEAD GRANT/NOW STATE FUNDS ONLY	\$ 162,483.85	\$ 550.01	\$ -	\$ 163,033.86
200 - GO BONDS DEBT FUND	\$ 150,096.30	\$ 30,106.41	\$ -	\$ 180,202.71
300 - CIP COLLECTION FUND	\$ 622,195.47	\$ 11,236.61	\$ 41,498.00	\$ 591,934.08
312 - AIRPORT PROJECT FUND	\$ (37,395.32)	\$ -	\$ 70,061.05	\$ (107,456.37)
320 - SPECIAL ASSESSMENT PROJECTS	\$ (14,510.95)	\$ -	\$ -	\$ (14,510.95)
340 - BIKE PATH PROJECT FUND	\$ (916,630.99)	\$ -	\$ 17,691.76	\$ (934,322.75)
341 - TREES FOREVER PROJECT	\$ 14,920.63	\$ 50.51	\$ -	\$ 14,971.14
355 - Dangerous & Dilapidated (included GO bonds)	\$ (28,664.21)	\$ -	\$ 7,599.39	\$ (36,263.60)
363 - 2021 GO BONDS	\$ 1,344,047.22	\$ 882,184.39	\$ 1,653,728.53	\$ 572,503.08
364 - 2022 GO BONDS	\$ 2,969,787.63	\$ 7,855.60	\$ 649,076.90	\$ 2,328,566.33
365 - 2023 GO BONDS	\$ 10,419,410.38	\$ 35,269.69	\$ -	\$ 10,454,680.07
389 - AMERICAN RESCUE PLAN	\$ 80,543.34	\$ -	\$ -	\$ 80,543.34
610 - WATER POLLUTION CONTROL	\$ -	\$ 375,241.65	\$ 375,241.65	\$ -
611 - WPCP REVENUE	\$ 27,421,756.19	\$ 737,860.14	\$ 375,241.65	\$ 27,784,374.68
614 - WPCP CAPITAL IMPROVEMENT RSRV	\$ 1,274,500.33	\$ 4,314.18	\$ -	\$ 1,278,814.51
615 - WPCP PLANT & IMPROVEMENTS	\$ (5,000.00)	\$ -	\$ 266,923.95	\$ (271,923.95)
617 - SANITARY SEWER NEW CONSTRUCTN	\$ 197,836.85	\$ -	\$ -	\$ 197,836.85
618 - WPCP INSURANCE RESERVE (WAS TORNADO)	\$ 317,445.58	\$ 1,074.55	\$ -	\$ 318,520.13
690 - TRANSIT OPERATING	\$ 1,923,800.95	\$ 58,457.52	\$ 103,004.62	\$ 1,879,253.85
691 - TRANSIT INSURANCE RESERVE	\$ 27,364.53	\$ 92.63	\$ -	\$ 27,457.16
740 - STORM SEWER UTILITY	\$ 3,014,224.68	\$ 148,813.49	\$ 75,794.70	\$ 3,087,243.47
750 - COMPOSTING FACILITY	\$ 311,160.81	\$ 9,690.85	\$ 3,522.53	\$ 317,329.13
760 - P&R CONCESSIONS ENTERPRISE	\$ (2,492.93)	\$ 23,174.32	\$ 19,717.73	\$ 963.66
881 - OCCUPATIONAL INSURANCE ESCROW	\$ 113,053.88	\$ 22,678.10	\$ 3,217.36	\$ 132,514.62
884 - GROUP HEALTH INSURANCE ESCROW	\$ 1,575,316.37	\$ 487,577.24	\$ 592,251.95	\$ 1,470,641.66
886 - WORKMAN'S COMP DEDUCTIBLE FUND	\$ 39,033.41	\$ 132.13	\$ -	\$ 39,165.54
913 - 911 COMMISION	\$ (7,468.72)	\$ 170.00	\$ 209,618.37	\$ (216,917.09)
Total	\$ 82,837,827.38	\$ 4,392,906.17	\$ 7,530,706.83	\$ 79,700,026.72

Account	Name	Ending Balance	Interest Rate
BalObject: 0110 - P&R Deposits			
<u>999.0110.100</u>	First Interstate Bank P&R Deposits	211,453.19	2.53
	Total BalObject: 0110 - P&R Deposits :	211,453.19	
BalObject: 0111 - Operating			
<u>999.0111.100</u>	First Interstate Bank Operating	703,525.34	2.53
	Total BalObject: 0111 - Operating:	703,525.34	
BalObject: 0113 - Payroll			
<u>999.0113.100</u>	First Interstate Bank Payroll	449,884.56	2.53
	Total BalObject: 0113 - Payroll:	449,884.56	
BalObject: 0115 - HUD Admin			
<u>999.0115.100</u>	First Interstate Bank HUD Admin	374,930.43	2.53
	Total BalObject: 0115 - HUD Admin:	374,930.43	
BalObject: 0116 - HUD HAP			
<u>999.0116.100</u>	First Interstate Bank HUD HAP	13,887.60	2.53
	Total BalObject: 0116 - HUD HAP:	13,887.60	
BalObject: 0117 - Police			
<u>999.0117.100</u>	First Interstate Bank Police	20,961.26	2.53
	Total BalObject: 0117 - Police:	20,961.26	
BalObject: 0117 - ACH			
<u>999.0118.100</u>	First Interstate Bank ACH	1,000.00	2.52
	Total BalObject: 0118 -ACH	1,000.00	
BalObject: 0120 - PETTY CASH			
<u>001.0120.000</u>	PETTY CASH - RECORDS	100.00	0.00
<u>144.0120.000</u>	PETTY CASH-TRACK MEET	-	0.00
<u>750.0120.000</u>	PETTY CASH	500.00	0.00
<u>760.0120.000</u>	PETTY CASH	350.00	0.00
	Total BalObject: 0120 - PETTY CASH:	950.00	
BalObject: 0121 - PETTY CASH-SWIMMING POOLS			
<u>001.0121.000</u>	PETTY CASH-SWIMMING POOLS	300.00	0.00
	Total BalObject: 0121 - PETTY CASH-SWIMMING	300.00	
BalObject: 0122 - PETTY CASH-CITY CLERK			
<u>001.0122.000</u>	PETTY CASH-CITY CLERK	200.00	0.00
	Total BalObject: 0122 - PETTY CASH-CITY CLERK:	200.00	
Page 1:2			
BalObject: 0123 - PETTY CASH-LIBRARY			
<u>001.0123.000</u>	PETTY CASH-LIBRARY	100.00	0.00
	Total BalObject: 0123 - PETTY CASH-LIBRARY:	100.00	
BalObject: 0124 - PETTY CASH-LIBRARY			
<u>001.0124.000</u>	PETTY CASH-LIBRARY	200.00	0.00
	Total BalObject: 0124 - PETTY CASH-LIBRARY:	200.00	
BalObject: 0125 - PETTY CASH-PARK			
<u>001.0125.000</u>	PETTY CASH-PARK	225.00	0.00
	Total BalObject: 0125 - PETTY CASH-PARK:	225.00	
BalObject: 0126 - PETTY CASH-COLISEUM CONCESSIONS			
<u>001.0126.000</u>	PETTY CASH-COLISEUM CONCESSIONS	300.00	0.00
	Total BalObject: 0125 - PETTY CASH-COLISEUM:	300.00	
BalObject: 0130 - CASH HELD BY INSUR ADMIN			
<u>885.0130.000</u>	CASH HELD BY INSUR ADMI	1.00	0.00
	Total BalObject: 0130 - CASH HELD BY INSUR ADM	1.00	
BalObject: 0215 - IPAIT MONEY MARKET			
<u>999.0215.000</u>	IPAIT MONEY MARKET	6,844,752.07	3.393
	Total BalObject: 0215 - IPAIT MONEY MARKET:	6,844,752.07	
BalObject: 0216 - FIRST INTERSTATE BANK MM			
<u>999.0216.000</u>	First Interstate Bank MM	11,783,192.00	2.53
	Total BalObject: 0216 - FIRST INTERSTATE BANK N	11,783,192.00	
BalObject: 0243 - GNB INV			
<u>365.0243.000</u>	GNB CD		
<u>999.0243.000</u>	GNB CD	19,054,151.23	3.53-3.95
	Total BalObject: 0243 - GNB INV	19,054,151.23	
BalObject: 0246 - PINNACLE INV			
<u>365.0246.000</u>	PINNACLE CD		
<u>999.0246.000</u>	PINNACLE CD	31,115,536.99	3.70-4.10
	Total BalObject: 0246 - PINNACLE CD	31,115,536.99	
BalObject: 0248 - Alerus Financial			
<u>999.0248.000</u>	Alerus CD	6,000,000.00	3.65-3.75
	Total BalObject: 0248 - ALERUS CD	6,000,000.00	
BalObject: 0265 - IPAIT CD			
<u>999.0265.000</u>	IPAIT CD	3,000,000.00	3.640
	Total BalObject: 0265 - IPAIT CD	3,000,000.00	
BalObject: 0999 - POOLED CASH			
<u>999.0999.000</u>	POOLED CASH - prepaid work comp and outstanding AP	124,476.05	
	Total BalObject: 0999 - POOLED CASH:	124,476.05	
Page 2:2	TOTAL	79,700,026.72	



Monthly Budget Report - Marshalltown

Group Summary

For Fiscal: 2026-2027 Period Ending: 07/31/2026

Account Typ...	July Activity	YTD Budget	YTD Activity	Variance Favorable (Unfavorable)	Total Budget
Fund: 001 - GENERAL FUND					
Revenue	395,614.69	1,810,240.57	395,614.69	-1,414,625.88	21,723,557.89
Expense	2,286,135.14	1,809,730.12	2,286,135.14	-476,405.02	21,723,558.00
Total Fund: 001 - GENERAL FUND:	-1,890,520.45	510.45	-1,890,520.45	-1,891,030.90	-0.11
Fund: 010 - CASH FLOW RESERVE FUND					
Revenue	13,282.44	9,996.00	13,282.44	3,286.44	120,000.00
Total Fund: 010 - CASH FLOW RESERVE FUND:	13,282.44	9,996.00	13,282.44	3,286.44	120,000.00
Fund: 011 - INSURANCE DEDUCTIBLE RESERVE FUND					
Revenue	1,264.14	0.00	1,264.14	1,264.14	0.00
Total Fund: 011 - INSURANCE DEDUCTIBLE RESERVE FUND:	1,264.14	0.00	1,264.14	1,264.14	0.00
Fund: 030 - CAPITAL RESERVE					
Revenue	43,498.00	83,308.33	43,498.00	-39,810.33	999,700.00
Expense	43,498.00	83,289.97	43,498.00	39,791.97	999,700.00
Total Fund: 030 - CAPITAL RESERVE:	0.00	18.36	0.00	-18.36	0.00
Fund: 031 - CAPITAL RSRV-BLDG MAINT					
Revenue	704.61	83.30	704.61	621.31	1,000.00
Expense	0.00	3,440.91	0.00	3,440.91	41,291.00
Total Fund: 031 - CAPITAL RSRV-BLDG MAINT:	704.61	-3,357.61	704.61	4,062.22	-40,291.00
Fund: 032 - CIP LARGE VEHICLE/EQUIPMENT					
Revenue	0.00	9,064.33	0.00	-9,064.33	108,772.00
Total Fund: 032 - CIP LARGE VEHICLE/EQUIPMENT:	0.00	9,064.33	0.00	-9,064.33	108,772.00
Fund: 110 - ROAD USE TAX					
Revenue	372,025.66	562,923.26	372,025.66	-190,897.60	6,755,658.00
Expense	328,598.36	1,000,120.67	328,598.36	671,522.31	12,001,468.00
Total Fund: 110 - ROAD USE TAX:	43,427.30	-437,197.41	43,427.30	480,624.71	-5,245,810.00
Fund: 111 - ROAD USE TAX INSURANCE RESERVE					
Revenue	361.27	2,415.83	361.27	-2,054.56	29,000.00
Total Fund: 111 - ROAD USE TAX INSURANCE RESERVE:	361.27	2,415.83	361.27	-2,054.56	29,000.00
Fund: 112 - EMPLOYEE BENEFITS FUND					
Revenue	44,095.24	266,855.75	44,095.24	-222,760.51	3,202,305.00
Expense	0.00	337,467.48	0.00	337,467.48	4,049,611.00
Total Fund: 112 - EMPLOYEE BENEFITS FUND:	44,095.24	-70,611.73	44,095.24	114,706.97	-847,306.00

Monthly Budget Report - Marshalltown

For Fiscal: 2026-2027 Period Ending: 07/31/2026

Account Typ...	July Activity	YTD Budget	YTD Activity	Variance Favorable (Unfavorable)	Total Budget
Fund: 117 - POLICE/FIRE RETIREMENT					
Revenue	11,272.25	108,821.49	11,272.25	-97,549.24	1,305,866.00
Expense	0.00	113,315.33	0.00	113,315.33	1,359,784.00
Total Fund: 117 - POLICE/FIRE RETIREMENT:	11,272.25	-4,493.84	11,272.25	15,766.09	-53,918.00
Fund: 121 - LOCAL OPTION SALES TAX					
Revenue	416,375.53	364,583.33	416,375.53	51,792.20	4,375,000.00
Expense	13,567.50	404,526.50	13,567.50	390,959.00	4,854,363.00
Total Fund: 121 - LOCAL OPTION SALES TAX:	402,808.03	-39,943.17	402,808.03	442,751.20	-479,363.00
Fund: 125 - TAX INCREMENT FINANCING					
Revenue	24,409.09	159,371.82	24,409.09	-134,962.73	1,912,462.00
Expense	0.00	156,510.16	0.00	156,510.16	1,878,122.00
Total Fund: 125 - TAX INCREMENT FINANCING:	24,409.09	2,861.66	24,409.09	21,547.43	34,340.00
Fund: 126 - TIF-LMI					
Revenue	31.36	3,261.99	31.36	-3,230.63	39,144.00
Total Fund: 126 - TIF-LMI:	31.36	3,261.99	31.36	-3,230.63	39,144.00
Fund: 130 - CITY TORT LIABILITY					
Revenue	317.15	9,672.99	317.15	-9,355.84	116,100.00
Expense	19,675.70	9,672.98	19,675.70	-10,002.72	116,100.00
Total Fund: 130 - CITY TORT LIABILITY:	-19,358.55	0.01	-19,358.55	-19,358.56	0.00
Fund: 132 - GRANTS-STATE/LOCAL AGENCIES					
Revenue	0.00	39,999.99	0.00	-39,999.99	480,000.00
Expense	0.00	40,000.00	0.00	40,000.00	480,000.00
Total Fund: 132 - GRANTS-STATE/LOCAL AGENCIES:	0.00	-0.01	0.00	0.01	0.00
Fund: 133 - UNDESIGNATED FEDERAL GRANTS					
Revenue	0.00	125,000.00	0.00	-125,000.00	1,500,000.00
Expense	95,921.50	125,000.00	95,921.50	29,078.50	1,500,000.00
Total Fund: 133 - UNDESIGNATED FEDERAL GRANTS:	-95,921.50	0.00	-95,921.50	-95,921.50	0.00
Fund: 139 - PLEASANT HILL POOL FOUNDATION					
Revenue	0.00	1,250.00	0.00	-1,250.00	15,000.00
Expense	0.00	1,249.76	0.00	1,249.76	15,000.00
Total Fund: 139 - PLEASANT HILL POOL FOUNDATION:	0.00	0.24	0.00	-0.24	0.00
Fund: 140 - PARK & REC DONATION FUND					
Revenue	69,730.19	31,347.26	69,730.19	38,382.93	376,168.00
Expense	424.83	26,180.58	424.83	25,755.75	314,167.00
Total Fund: 140 - PARK & REC DONATION FUND:	69,305.36	5,166.68	69,305.36	64,138.68	62,001.00
Fund: 142 - SOFTBALL ASSOCIATION FUND					
Revenue	0.00	4,822.75	0.00	-4,822.75	57,873.00
Expense	7,175.77	4,820.55	7,175.77	-2,355.22	57,873.00
Total Fund: 142 - SOFTBALL ASSOCIATION FUND:	-7,175.77	2.20	-7,175.77	-7,177.97	0.00

Monthly Budget Report - Marshalltown

For Fiscal: 2026-2027 Period Ending: 07/31/2026

Account Typ...	July Activity	YTD Budget	YTD Activity	Variance Favorable (Unfavorable)	Total Budget
Fund: 144 - LIVE HEALTHY IOWA					
Revenue	36.05	0.00	36.05	36.05	0.00
Expense	0.00	45.70	0.00	45.70	549.00
Total Fund: 144 - LIVE HEALTHY IOWA :	36.05	-45.70	36.05	81.75	-549.00
Fund: 149 - FEMA - WINDS					
Expense	0.00	21,916.66	0.00	21,916.66	263,000.00
Total Fund: 149 - FEMA - WINDS:	0.00	21,916.66	0.00	21,916.66	263,000.00
Fund: 150 - LOCAL PD GRANTS					
Revenue	0.00	5,507.41	0.00	-5,507.41	66,089.00
Expense	7,583.54	5,505.19	7,583.54	-2,078.35	66,089.00
Total Fund: 150 - LOCAL PD GRANTS:	-7,583.54	2.22	-7,583.54	-7,585.76	0.00
Fund: 151 - DEPT OF JUSTICE GRANTS					
Revenue	0.00	1,733.16	0.00	-1,733.16	20,800.00
Expense	0.00	1,733.05	0.00	1,733.05	20,800.00
Total Fund: 151 - DEPT OF JUSTICE GRANTS:	0.00	0.11	0.00	-0.11	0.00
Fund: 152 - POLICE UNDESIGNATED GRANTS					
Revenue	14,317.11	6,417.25	14,317.11	7,899.86	77,007.00
Expense	10,389.63	6,414.94	10,389.63	-3,974.69	77,007.00
Total Fund: 152 - POLICE UNDESIGNATED GRANTS:	3,927.48	2.31	3,927.48	3,925.17	0.00
Fund: 153 - POLICE DEPT DONATION FUND					
Revenue	197.85	266.62	197.85	-68.77	3,200.00
Expense	2,499.83	1,195.43	2,499.83	-1,304.40	14,350.00
Total Fund: 153 - POLICE DEPT DONATION FUND:	-2,301.98	-928.81	-2,301.98	-1,373.17	-11,150.00
Fund: 154 - AUTOMATED TRAFFIC ENFORCEMENT					
Revenue	29,918.69	20,333.33	29,918.69	9,585.36	244,000.00
Expense	9,485.00	24,620.58	9,485.00	15,135.58	295,447.00
Total Fund: 154 - AUTOMATED TRAFFIC ENFORCEMENT:	20,433.69	-4,287.25	20,433.69	24,720.94	-51,447.00
Fund: 156 - FIRE DEPT DONATION FUND					
Revenue	61.75	249.96	61.75	-188.21	3,000.00
Expense	15,467.58	2,191.09	15,467.58	-13,276.49	26,298.00
Total Fund: 156 - FIRE DEPT DONATION FUND:	-15,405.83	-1,941.13	-15,405.83	-13,464.70	-23,298.00
Fund: 160 - ECONOMIC DEVELOPMENT GIFT					
Revenue	141.32	83.30	141.32	58.02	1,000.00
Total Fund: 160 - ECONOMIC DEVELOPMENT GIFT:	141.32	83.30	141.32	58.02	1,000.00
Fund: 161 - SURETY DEPOSITS/SUBDIVIDER					
Revenue	44.14	33.33	44.14	10.81	400.00
Total Fund: 161 - SURETY DEPOSITS/SUBDIVIDER:	44.14	33.33	44.14	10.81	400.00
Fund: 170 - LIBRARY DONATION FUND					
Revenue	2,754.20	4,839.57	2,754.20	-2,085.37	58,075.00

Monthly Budget Report - Marshalltown

For Fiscal: 2026-2027 Period Ending: 07/31/2026

Account Typ...	July Activity	YTD Budget	YTD Activity	Variance Favorable (Unfavorable)	Total Budget
Expense	1,830.33	5,394.97	1,830.33	3,564.64	64,740.00
Total Fund: 170 - LIBRARY DONATION FUND:	923.87	-555.40	923.87	1,479.27	-6,665.00
Fund: 177 - SEIZED ASSETS (POLICE)					
Revenue	44.41	1,374.45	44.41	-1,330.04	16,500.00
Expense	0.00	1,374.99	0.00	1,374.99	16,500.00
Total Fund: 177 - SEIZED ASSETS (POLICE):	44.41	-0.54	44.41	44.95	0.00
Fund: 181 - #7 HUD LEAD GRANT					
Revenue	0.00	166,226.91	0.00	-166,226.91	1,994,725.00
Expense	105,452.46	166,207.05	105,452.46	60,754.59	1,994,725.00
Total Fund: 181 - #7 HUD LEAD GRANT:	-105,452.46	19.86	-105,452.46	-105,472.32	0.00
Fund: 184 - VOUCHERS - 002, 003					
Revenue	115,879.01	134,218.37	115,879.01	-18,339.36	1,610,625.00
Expense	118,811.52	144,331.94	118,811.52	25,520.42	1,732,654.00
Total Fund: 184 - VOUCHERS - 002, 003:	-2,932.51	-10,113.57	-2,932.51	7,181.06	-122,029.00
Fund: 189 - #6 HUD LEAD GRANT/NOW STATE FUNDS ONLY					
Revenue	550.01	416.50	550.01	133.51	5,000.00
Total Fund: 189 - #6 HUD LEAD GRANT/NOW STATE FUNDS ONLY:	550.01	416.50	550.01	133.51	5,000.00
Fund: 200 - GO BONDS DEBT FUND					
Revenue	30,106.41	553,829.49	30,106.41	-523,723.08	6,646,185.00
Expense	0.00	562,013.00	0.00	562,013.00	6,746,318.00
Total Fund: 200 - GO BONDS DEBT FUND:	30,106.41	-8,183.51	30,106.41	38,289.92	-100,133.00
Fund: 300 - CIP COLLECTION FUND					
Revenue	11,236.61	64,178.49	11,236.61	-52,941.88	770,150.00
Expense	41,498.00	92,372.66	41,498.00	50,874.66	1,108,472.00
Total Fund: 300 - CIP COLLECTION FUND:	-30,261.39	-28,194.17	-30,261.39	-2,067.22	-338,322.00
Fund: 311 - RISE STREET GRANTS					
Revenue	0.00	189,583.32	0.00	-189,583.32	2,275,000.00
Expense	0.00	189,583.33	0.00	189,583.33	2,275,000.00
Total Fund: 311 - RISE STREET GRANTS:	0.00	-0.01	0.00	0.01	0.00
Fund: 312 - AIRPORT PROJECT FUND					
Revenue	0.00	131,951.41	0.00	-131,951.41	1,583,417.00
Expense	70,061.05	145,241.66	70,061.05	75,180.61	1,742,900.00
Total Fund: 312 - AIRPORT PROJECT FUND:	-70,061.05	-13,290.25	-70,061.05	-56,770.80	-159,483.00
Fund: 340 - BIKE PATH PROJECT FUND					
Revenue	0.00	299,999.99	0.00	-299,999.99	3,600,000.00
Expense	17,691.76	300,000.00	17,691.76	282,308.24	3,600,000.00
Total Fund: 340 - BIKE PATH PROJECT FUND:	-17,691.76	-0.01	-17,691.76	-17,691.75	0.00
Fund: 341 - TREES FOREVER PROJECT					
Revenue	50.51	791.65	50.51	-741.14	9,500.00

Monthly Budget Report - Marshalltown

For Fiscal: 2026-2027 Period Ending: 07/31/2026

Account Typ...	July Activity	YTD Budget	YTD Activity	Variance Favorable (Unfavorable)	Total Budget
Expense	0.00	416.66	0.00	416.66	5,000.00
Total Fund: 341 - TREES FOREVER PROJECT:	50.51	374.99	50.51	-324.48	4,500.00
Fund: 355 - Dangerous & Dilapidated (included GO bonds)					
Revenue	0.00	834.16	0.00	-834.16	10,010.00
Expense	7,599.39	834.16	7,599.39	-6,765.23	10,010.00
Total Fund: 355 - Dangerous & Dilapidated (included GO bonds):	-7,599.39	0.00	-7,599.39	-7,599.39	0.00
Fund: 363 - 2021 GO BONDS					
Revenue	882,184.39	312,870.99	882,184.39	569,313.40	3,754,468.00
Expense	1,653,728.53	421,042.35	1,653,728.53	-1,232,686.18	5,052,508.50
Total Fund: 363 - 2021 GO BONDS:	-771,544.14	-108,171.36	-771,544.14	-663,372.78	-1,298,040.50
Fund: 364 - 2022 GO BONDS					
Revenue	7,855.60	241,815.65	7,855.60	-233,960.05	2,901,792.00
Expense	649,076.90	405,313.06	649,076.90	-243,763.84	4,863,757.00
Total Fund: 364 - 2022 GO BONDS:	-641,221.30	-163,497.41	-641,221.30	-477,723.89	-1,961,965.00
Fund: 365 - 2023 GO BONDS					
Revenue	35,269.69	8,330.00	35,269.69	26,939.69	100,000.00
Expense	0.00	431,087.49	0.00	431,087.49	5,173,050.00
Total Fund: 365 - 2023 GO BONDS:	35,269.69	-422,757.49	35,269.69	458,027.18	-5,073,050.00
Fund: 389 - AMERICAN RESCUE PLAN					
Expense	0.00	6,311.89	0.00	6,311.89	75,773.00
Total Fund: 389 - AMERICAN RESCUE PLAN:	0.00	6,311.89	0.00	6,311.89	75,773.00
Fund: 610 - WATER POLLUTION CONTROL					
Revenue	375,241.65	667,381.99	375,241.65	-292,140.34	8,008,584.00
Expense	375,241.65	667,291.88	375,241.65	292,050.23	8,008,584.00
Total Fund: 610 - WATER POLLUTION CONTROL:	0.00	90.11	0.00	-90.11	0.00
Fund: 611 - WPCP REVENUE					
Revenue	737,860.14	752,516.54	737,860.14	-14,656.40	9,030,600.00
Expense	375,241.65	1,135,423.57	375,241.65	760,181.92	13,625,123.00
Total Fund: 611 - WPCP REVENUE:	362,618.49	-382,907.03	362,618.49	745,525.52	-4,594,523.00
Fund: 614 - WPCP CAPITAL IMPROVEMENT RSRV					
Revenue	4,314.18	3,332.00	4,314.18	982.18	40,000.00
Total Fund: 614 - WPCP CAPITAL IMPROVEMENT RSRV:	4,314.18	3,332.00	4,314.18	982.18	40,000.00
Fund: 615 - WPCP PLANT & IMPROVEMENTS					
Revenue	0.00	364,291.66	0.00	-364,291.66	4,371,500.00
Expense	266,923.95	364,291.66	266,923.95	97,367.71	4,371,500.00
Total Fund: 615 - WPCP PLANT & IMPROVEMENTS:	-266,923.95	0.00	-266,923.95	-266,923.95	0.00
Fund: 616 - SANITARY SEWER REHAB PROJECT					
Revenue	0.00	95,833.33	0.00	-95,833.33	1,150,000.00
Expense	0.00	95,833.33	0.00	95,833.33	1,150,000.00

Monthly Budget Report - Marshalltown

For Fiscal: 2026-2027 Period Ending: 07/31/2026

Account Typ...	July Activity	YTD Budget	YTD Activity	Variance Favorable (Unfavorable)	Total Budget
Total Fund: 616 - SANITARY SEWER REHAB PROJECT:	0.00	0.00	0.00	0.00	0.00
Fund: 617 - SANITARY SEWER NEW CONSTRUCTN					
Revenue	0.00	583.33	0.00	-583.33	7,000.00
Total Fund: 617 - SANITARY SEWER NEW CONSTRUCTN:	0.00	583.33	0.00	-583.33	7,000.00
Fund: 618 - WPCP INSURANCE RESERVE (WAS TORNADO)					
Revenue	1,074.55	9,163.00	1,074.55	-8,088.45	110,000.00
Total Fund: 618 - WPCP INSURANCE RESERVE (WAS TORNADO):	1,074.55	9,163.00	1,074.55	-8,088.45	110,000.00
Fund: 690 - TRANSIT OPERATING					
Revenue	58,457.52	287,725.46	58,457.52	-229,267.94	3,452,726.00
Expense	103,004.62	305,763.82	103,004.62	202,759.20	3,669,567.00
Total Fund: 690 - TRANSIT OPERATING:	-44,547.10	-18,038.36	-44,547.10	-26,508.74	-216,841.00
Fund: 691 - TRANSIT INSURANCE RESERVE					
Revenue	92.63	83.30	92.63	9.33	1,000.00
Total Fund: 691 - TRANSIT INSURANCE RESERVE:	92.63	83.30	92.63	9.33	1,000.00
Fund: 740 - STORM SEWER UTILITY					
Revenue	148,813.49	211,892.13	148,813.49	-63,078.64	2,543,132.00
Expense	75,794.70	248,610.37	75,794.70	172,815.67	2,983,572.00
Total Fund: 740 - STORM SEWER UTILITY:	73,018.79	-36,718.24	73,018.79	109,737.03	-440,440.00
Fund: 750 - COMPOSTING FACILITY					
Revenue	9,690.85	7,224.72	9,690.85	2,466.13	86,700.00
Expense	3,522.53	6,246.17	3,522.53	2,723.64	74,965.00
Total Fund: 750 - COMPOSTING FACILITY:	6,168.32	978.55	6,168.32	5,189.77	11,735.00
Fund: 760 - P&R CONCESSIONS ENTERPRISE					
Revenue	23,174.32	4,833.74	23,174.32	18,340.58	58,005.00
Expense	19,717.73	4,742.66	19,717.73	-14,975.07	56,913.00
Total Fund: 760 - P&R CONCESSIONS ENTERPRISE:	3,456.59	91.08	3,456.59	3,365.51	1,092.00
Fund: 881 - OCCUPATIONAL INSURANCE ESCROW					
Revenue	22,678.10	0.00	22,678.10	22,678.10	0.00
Expense	3,217.36	0.00	3,217.36	-3,217.36	0.00
Total Fund: 881 - OCCUPATIONAL INSURANCE ESCROW:	19,460.74	0.00	19,460.74	19,460.74	0.00
Fund: 884 - GROUP HEALTH INSURANCE ESCROW					
Revenue	487,577.24	0.00	487,577.24	487,577.24	0.00
Expense	592,251.95	0.00	592,251.95	-592,251.95	0.00
Total Fund: 884 - GROUP HEALTH INSURANCE ESCROW:	-104,674.71	0.00	-104,674.71	-104,674.71	0.00
Fund: 886 - WORKMAN'S COMP DEDUCTIBLE FUND					
Revenue	132.13	0.00	132.13	132.13	0.00
Total Fund: 886 - WORKMAN'S COMP DEDUCTIBLE FUND:	132.13	0.00	132.13	132.13	0.00

Account Typ...	July Activity	YTD Budget	YTD Activity	Variance Favorable (Unfavorable)	Total Budget
Fund: 913 - 911 COMMISION					
Revenue	170.00	0.00	170.00	170.00	0.00
Expense	209,618.37	0.00	209,618.37	-209,618.37	0.00
Total Fund: 913 - 911 COMMISION:	-209,448.37	0.00	-209,448.37	-209,448.37	0.00
Report Total:	-3,137,800.66	-1,734,910.82	-3,137,800.66	-1,402,889.84	-20,828,412.61

Fund Summary

Fund	July Activity	YTD Budget	YTD Activity	Variance Favorable (Unfavorable)	Total Budget
001 - GENERAL FUND	-1,890,520.45	510.45	-1,890,520.45	-1,891,030.90	-0.11
010 - CASH FLOW RESERVE FUND	13,282.44	9,996.00	13,282.44	3,286.44	120,000.00
011 - INSURANCE DEDUCTIBLE RE	1,264.14	0.00	1,264.14	1,264.14	0.00
030 - CAPITAL RESERVE	0.00	18.36	0.00	-18.36	0.00
031 - CAPITAL RSRV-BLDG MAINT	704.61	-3,357.61	704.61	4,062.22	-40,291.00
032 - CIP LARGE VEHICLE/EQUIP	0.00	9,064.33	0.00	-9,064.33	108,772.00
110 - ROAD USE TAX	43,427.30	-437,197.41	43,427.30	480,624.71	-5,245,810.00
111 - ROAD USE TAX INSURANCE	361.27	2,415.83	361.27	-2,054.56	29,000.00
112 - EMPLOYEE BENEFITS FUND	44,095.24	-70,611.73	44,095.24	114,706.97	-847,306.00
117 - POLICE/FIRE RETIREMENT	11,272.25	-4,493.84	11,272.25	15,766.09	-53,918.00
121 - LOCAL OPTION SALES TAX	402,808.03	-39,943.17	402,808.03	442,751.20	-479,363.00
125 - TAX INCREMENT FINANCIN	24,409.09	2,861.66	24,409.09	21,547.43	34,340.00
126 - TIF-LMI	31.36	3,261.99	31.36	-3,230.63	39,144.00
130 - CITY TORT LIABILITY	-19,358.55	0.01	-19,358.55	-19,358.56	0.00
132 - GRANTS-STATE/LOCAL AGE	0.00	-0.01	0.00	0.01	0.00
133 - UNDESIGNATED FEDERAL G	-95,921.50	0.00	-95,921.50	-95,921.50	0.00
139 - PLEASANT HILL POOL FOUN	0.00	0.24	0.00	-0.24	0.00
140 - PARK & REC DONATION FUI	69,305.36	5,166.68	69,305.36	64,138.68	62,001.00
142 - SOFTBALL ASSOCIATION FU	-7,175.77	2.20	-7,175.77	-7,177.97	0.00
144 - LIVE HEALTHY IOWA	36.05	-45.70	36.05	81.75	-549.00
149 - FEMA - WINDS	0.00	-21,916.66	0.00	21,916.66	-263,000.00
150 - LOCAL PD GRANTS	-7,583.54	2.22	-7,583.54	-7,585.76	0.00
151 - DEPT OF JUSTICE GRANTS	0.00	0.11	0.00	-0.11	0.00
152 - POLICE UNDESIGNATED GR.	3,927.48	2.31	3,927.48	3,925.17	0.00
153 - POLICE DEPT DONATION FL	-2,301.98	-928.81	-2,301.98	-1,373.17	-11,150.00
154 - AUTOMATED TRAFFIC ENFC	20,433.69	-4,287.25	20,433.69	24,720.94	-51,447.00
156 - FIRE DEPT DONATION FUNI	-15,405.83	-1,941.13	-15,405.83	-13,464.70	-23,298.00
160 - ECONOMIC DEVELOPMENT	141.32	83.30	141.32	58.02	1,000.00
161 - SURETY DEPOSITS/SUBDIVII	44.14	33.33	44.14	10.81	400.00
170 - LIBRARY DONATION FUND	923.87	-555.40	923.87	1,479.27	-6,665.00
177 - SEIZED ASSETS (POLICE)	44.41	-0.54	44.41	44.95	0.00
181 - #7 HUD LEAD GRANT	-105,452.46	19.86	-105,452.46	-105,472.32	0.00
184 - VOUCHERS - 002, 003	-2,932.51	-10,113.57	-2,932.51	7,181.06	-122,029.00
189 - #6 HUD LEAD GRANT/NOW	550.01	416.50	550.01	133.51	5,000.00
200 - GO BONDS DEBT FUND	30,106.41	-8,183.51	30,106.41	38,289.92	-100,133.00
300 - CIP COLLECTION FUND	-30,261.39	-28,194.17	-30,261.39	-2,067.22	-338,322.00
311 - RISE STREET GRANTS	0.00	-0.01	0.00	0.01	0.00
312 - AIRPORT PROJECT FUND	-70,061.05	-13,290.25	-70,061.05	-56,770.80	-159,483.00
340 - BIKE PATH PROJECT FUND	-17,691.76	-0.01	-17,691.76	-17,691.75	0.00
341 - TREES FOREVER PROJECT	50.51	374.99	50.51	-324.48	4,500.00

Monthly Budget Report - Marshalltown
For Fiscal: 2026-2027 Period Ending: 07/31/2026

355 - Dangerous & Dilapidated (ir	-7,599.39	0.00	-7,599.39	-7,599.39	0.00
363 - 2021 GO BONDS	-771,544.14	-108,171.36	-771,544.14	-663,372.78	-1,298,040.50
364 - 2022 GO BONDS	-641,221.30	-163,497.41	-641,221.30	-477,723.89	-1,961,965.00
365 - 2023 GO BONDS	35,269.69	-422,757.49	35,269.69	458,027.18	-5,073,050.00
389 - AMERICAN RESCUE PLAN	0.00	-6,311.89	0.00	6,311.89	-75,773.00
610 - WATER POLLUTION CONTRI	0.00	90.11	0.00	-90.11	0.00
611 - WPCP REVENUE	362,618.49	-382,907.03	362,618.49	745,525.52	-4,594,523.00
614 - WPCP CAPITAL IMPROVEMI	4,314.18	3,332.00	4,314.18	982.18	40,000.00
615 - WPCP PLANT & IMPROVEM	-266,923.95	0.00	-266,923.95	-266,923.95	0.00
616 - SANITARY SEWER REHAB PF	0.00	0.00	0.00	0.00	0.00
617 - SANITARY SEWER NEW COM	0.00	583.33	0.00	-583.33	7,000.00
618 - WPCP INSURANCE RESERVE	1,074.55	9,163.00	1,074.55	-8,088.45	110,000.00
690 - TRANSIT OPERATING	-44,547.10	-18,038.36	-44,547.10	-26,508.74	-216,841.00
691 - TRANSIT INSURANCE RESER	92.63	83.30	92.63	9.33	1,000.00
740 - STORM SEWER UTILITY	73,018.79	-36,718.24	73,018.79	109,737.03	-440,440.00
750 - COMPOSTING FACILITY	6,168.32	978.55	6,168.32	5,189.77	11,735.00
760 - P&R CONCESSIONS ENTERP	3,456.59	91.08	3,456.59	3,365.51	1,092.00
881 - OCCUPATIONAL INSURANCI	19,460.74	0.00	19,460.74	19,460.74	0.00
884 - GROUP HEALTH INSURANCI	-104,674.71	0.00	-104,674.71	-104,674.71	0.00
886 - WORKMAN'S COMP DEDUC	132.13	0.00	132.13	132.13	0.00
913 - 911 COMMISION	-209,448.37	0.00	-209,448.37	-209,448.37	0.00
Report Total:	-3,137,800.66	-1,734,910.82	-3,137,800.66	-1,402,889.84	-20,828,412.61



MARSHALLTOWN
MORE THAN EVER

Mike Ladehoff, Mayor
Carol Webb, City Administrator
24 North Center Street
Marshalltown, IA 50158
PH 641.754.5701 • FX 641.754.5717

To: Mayor and City Council
From: Cole O'Donnell, Finance Director
Meeting Date: September 14, 2026
Re: Resolution Approving the Fiscal Year 2026 Street Finance Report

Strategic Plan Objective:

N/A

Recommended:

Approval of the report.

Budget Impact:

N/A

Description/Background:

Local governments receive a portion of Road Use Taxes from the State of Iowa. Annually, local governments are required to submit a report to the Iowa Department of Transportation detailing all revenues and expenditures related to street and road operations, maintenance, repair, and construction. The Fiscal Year 2026 report has been prepared and is submitted for your review and approval.

In FY 26, total expenditures were \$15,146,982. This includes \$4,608,503 attributed to Debt Service and \$5,474,182 in capital expenditures. Revenues totaled \$11,169,107 including transfers and property taxes (General Fund & Debt Service expenses). Actual Road Use Taxes received were \$3,884,514.

Attachments:

1. 2026-09-14_2026-157_Resolution to Approve FY 26 Street Finance Report
2. FY26 Street Finance Report_Marshalltown2026

RESOLUTION APPROVING THE FISCAL YEAR 2026 STREET FINANCE REPORT

WHEREAS, the City of Marshalltown, Iowa receives Road Use Tax funds from the State of Iowa; and

WHEREAS, the Iowa Department of Transportation requires an annual report of revenues and expenditures related to street, road, and bridge operations, maintenance, and repair;

THEREFORE, IT IS HEREBY RESOLVED BY THE COUNCIL OF THE CITY OF MARSHALLTOWN, to approve the Fiscal Year 2026 Street Finance Report and its submission to the Iowa Department of Transportation.

Passed this 14th day of September 2026, and signed this _____ day of September 2026.

CITY OF MARSHALLTOWN, IOWA

Mike Ladehoff, Mayor

ATTEST:

Alicia Hunter, CMC, City Clerk



Bureau of Local Systems
Ames, IA 50010

City Street Finance Report

Fiscal Year 2026

Marshalltown

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Expenses

	General Fund Streets (001)	Road Use (110)	Other Special Revenues	Debt Service (200)	Capital Projects (300)	Utilities (600 & U0)	Grand Total
Salaries - Roads/Streets	\$752,708	\$6,785					\$759,493
Benefits - Roads/Streets	\$376,388	\$13,897					\$390,285
Training & Dues		\$4,623					\$4,623
Building & Grounds Maint. & Repair		\$34,016					\$34,016
Vehicle & Office Equip Operation and Repair		\$92,879					\$92,879
Engineering		\$81,007			\$502,022		\$583,029
Insurance	\$57,792						\$57,792
Medical		\$302					\$302
Payments to othe agencies					\$32,407		\$32,407
Printing		\$95					\$95
Rents & Leases		\$10,755					\$10,755
Street Maintenance Expense					\$4,919,608		\$4,919,608
Technology Expense		\$2,335					\$2,335
Other Contract Services		\$130,602			\$13,699		\$144,301
Minor Equipment Purchases		\$1,262					\$1,262
Office Supplies		\$128					\$128
Operating Supplies		\$56,055					\$56,055



Bureau of Local Systems
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City Street Finance Report

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	General Fund Streets (001)	Road Use (110)	Other Special Revenues	Debt Service (200)	Capital Projects (300)	Utilities (600 & U0)	Grand Total
Postage & Safety		\$996					\$996
New Posts & Signs		\$44,372					\$44,372
Other Supplies		\$174,539			\$6,446		\$180,985
Vehicles		\$489,523					\$489,523
Heavy Equipment		\$11,995					\$11,995
Other Capital Equipment		\$7,648					\$7,648
Other Capital Outlay		\$15,467					\$15,467
Principal Payment				\$2,136,735			\$2,136,735
Interest Payment				\$2,469,711			\$2,469,711
Bond Registration Fees				\$2,057			\$2,057
Transfer Out		\$1,246,765	\$2,479				\$1,249,244
Parking	\$72,882						\$72,882
Street Lighting	\$85,313	\$230,202					\$315,515
Traffic Control/Safety	\$94,470	\$119,328					\$213,798
Snow Removal	\$960	\$134,808					\$135,768
Highway Engineering	\$403,695	\$47,534					\$451,229
Depreciation & Building Utilities		\$27,948					\$27,948
Accounting/Recording		\$19,100					\$19,100
Street Cleaning		\$26,449					\$26,449
Snow Removal Salaries	\$133,870						\$133,870



Bureau of Local Systems
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City Street Finance Report

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	General Fund Streets (001)	Road Use (110)	Other Special Revenues	Debt Service (200)	Capital Projects (300)	Utilities (600 & U0)	Grand Total
Snow Removal Benefits	\$52,325						\$52,325
Total	\$2,030,403	\$3,031,415	\$2,479	\$4,608,503	\$5,474,182		\$15,146,982



Bureau of Local Systems
Ames, IA 50010

City Street Finance Report

Fiscal Year 2026

Marshalltown

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Revenue

	General Fund Streets (001)	Road Use (110)	Other Special Revenues	Debt Service (200)	Capital Projects (300)	Utilities (600 & U0)	Grand Total
Levied on Property	\$650,955		\$0	\$4,608,503			\$5,259,458
Licenses & Permits	\$40,234	\$3,225					\$43,459
Interest	\$2,827	\$484,833	\$3,315				\$490,975
State Revenues - Road Use Taxes		\$3,884,514					\$3,884,514
Other State Grants - IDOT		\$45,831					\$45,831
Charges/fees	\$114,466					\$0	\$114,466
Contributions	\$156	\$50,281					\$50,437
Sale of Assests		\$30,723					\$30,723
Transfer In	\$1,221,765	\$2,479	\$25,000				\$1,249,244
Total	\$2,030,403	\$4,501,886	\$28,315	\$4,608,503		\$0	\$11,169,107



Bureau of Local Systems
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City Street Finance Report

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Bonds/Loans

Bond/Loan Description	Principal Balance As of 7/1	Total Principal Paid	Total Interest Paid	Principal Roads	Interest Roads	Principal Balance As of 6/30
2022A GO Streets	\$3,084,300	\$144,900	\$124,600	\$144,900	\$124,600	\$2,939,400
2020A GO Bonds Refunding 2011B, 2012A, 2014A	\$1,254,999	\$387,600	\$1,777,161	\$387,600	\$1,777,161	\$867,399
2019 GO (incl E. Merle Hibbs)	\$1,836,719	\$442,860	\$26,971	\$442,860	\$26,971	\$1,393,859
2018 GO Bond	\$658,334	\$156,375	\$19,766	\$156,375	\$19,766	\$501,959
2021 GO Viaduct and Streets	\$6,700,000	\$515,000	\$134,000	\$515,000	\$134,000	\$6,185,000
2023 GO Bond for streets	\$9,595,000	\$490,000	\$387,213	\$490,000	\$387,213	\$9,105,000
Total	\$23,129,352	\$2,136,735	\$2,469,711	\$2,136,735	\$2,469,711	\$20,992,617



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City Street Finance Report

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Marshalltown

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Equipment

Description	Model Year	Usage Type	Cost	Purchased Status
International 7400 Dump Truck with Plow Attachments	2016	Purchased	\$132,166	No Change
International 7300 SFA4X2 Dump Truck	2016	Purchased	\$129,866	No Change
Ram 2500 Truck (Engineering Dept)	2017	Purchased	\$29,390	No Change
Grapple Bucket	2018	Purchased	\$17,500	No Change
Crafc0 125 Super Shot - crack sealer #418327	2005	Purchased	\$20,900	No Change
ford C8000 cab & Chassisw/Pitman Polecat (Utility)	1989	Purchased	\$19,299	No Change
#7197 Chevy Silverado Truck 1GC3YLE78LF291118	2020	Purchased	\$28,544	No Change
IHC Crawler Tractor #26263	1969	Purchased	\$18,000	Sold
Elgin Pelican NP Street Sweeper	2019	Purchased	\$221,280	No Change
Compost Read Screen All (Sifter) #1134	1990	Purchased	\$49,000	No Change
Garden Tractor (Street)	2012	Purchased	\$12,000	No Change
Kubota Utility Tractor #52600	2008	Purchased	\$24,950	No Change
#7278 International dump w/plows, spreader & pre-wet system	2022	Purchased	\$160,457	No Change
Dura Patcher #14108	2007	Purchased	\$54,500	No Change
John Deere Model 1570 Terrain with mower deck and front mount blower	2018	Purchased	\$37,800	No Change
FORD F-350 KNAPHEIDE SERVICE BODY W/ R&H LADDER UNIT	2017	Purchased	\$76,427	No Change
International Dump Truck Model HV507SFA	2020	Purchased	\$144,610	No Change
International 7400 SFA 4X2 Dumpt Truck with snow plow	2018	Purchased	\$140,519	No Change
International Dump Truck for Street Dept.	2018	Purchased	\$136,150	No Change
Ford F250 SD (Sewer)	2015	Purchased	\$6,894	No Change



City Street Finance Report

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Bureau of Local Systems

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Description	Model Year	Usage Type	Cost	Purchased Status
Ride-On Paint Striping Machine	2024	Purchased	\$19,070	No Change
Case IH 215 Puma Tractor	2011	Purchased	\$75,250	No Change
Case 721G Wheel Loader S/N NJF246052	2019	Purchased	\$155,000	No Change
Snogo MP-3D snow blower	2011	Purchased	\$139,938	No Change
#7337 2022 Isuzu NRR Paint Truck	2022	Purchased	\$245,500	No Change
Intl 7300 4x2 Dump Truck (Street)	2014	Purchased	\$129,071	No Change
Ford LTA 9000 Heavy Truck #37705	1994	Purchased	\$15,000	No Change
# 7277 2016 Caterpillar 12M3 Motor Grader	2016	Purchased	\$158,000	No Change
#7276 2016 Caterpillar 12M3 Motor Grader	2016	Purchased	\$158,000	No Change
DuraPatcher Cimline P2 250' Gallon Trailer Mounted	2018	Purchased	\$58,122	No Change
Doolittle Trailer	2024	Purchased	\$17,175	No Change
Mobile Column Lift split between 030 & 110	2025	Purchased	\$39,832	No Change
John Deere 333P Compact Track Skid Loader for streets and compost	2024	Purchased	\$102,221	No Change
Dodge Ram 4500 Bucket Truck	2015	Purchased	\$59,995	No Change
Polaris Ranger UTV	2025	Purchased	\$19,000	No Change
International Dump Truck SN ending in 844	2024	Purchased	\$171,394	No Change
International Dump Truck SN ending in 845	2024	Purchased	\$175,394	No Change
#7246 Wheel loader bucket with grapple stucchi	2020	Purchased	\$18,500	No Change
Ford Explorer AWD	2018	Purchased	\$27,985	No Change
Seaman Pulverisor #1088004	1982	Purchased	\$66,969	Sold
Chev Silverado-white w/ snow plow #363651	2004	Purchased	\$23,622	Sold
John Deere Front End Loader #595830	2005	Purchased	\$94,120	No Change
GPS System Trimble R8 (design survey equip)	2008	Purchased	\$24,878	No Change



Bureau of Local Systems
Ames, IA 50010

City Street Finance Report

Fiscal Year 2026

Marshalltown

8/28/2026 11:12:13 AM

Description	Model Year	Usage Type	Cost	Purchased Status
DuraPatch 6000 gallon oil tank	2010	Purchased	\$47,585	No Change
Elgin Pelican Sweeper	2011	Purchased	\$163,594	No Change
Tiger Bengal Extendable Boom Mower - Side Mount	2015	Purchased	\$28,500	No Change
Case End Loader Model 721F	2015	Purchased	\$164,426	No Change
Speed Trailer	2015	Purchased	\$16,864	No Change
Vactor 2100 plus (storm sewer portion)	2010	Purchased	\$123,006	No Change
JD Excavator-Model 200CLC s/nFF200CX507 (Street)	2012	Purchased	\$99,500	No Change
#7201 John Deere Compact Track Loader, with Rotary Cutter and Scrap Grapple	2020	Purchased	\$83,500	No Change
#7195 2021 International HV507 SFA 4x2 with RDS & Plow	2021	Purchased	\$181,657	No Change
#7194 2021 International HV507 SFA 4x2 with Plow & Spreader	2021	Purchased	\$158,847	No Change
#7196 Chevy Silverado 2500 Truck 1GC3YLE79LF291175	2020	Purchased	\$28,544	No Change
#7336 2023 Chevy Silverado 3500 Crew 4WD	2023	Purchased	\$49,756	No Change
#7334 2023 Chevy Silverado 2500 4WD	2023	Purchased	\$36,545	No Change
#7335 2022 Caterpillar 926M w/ Wheel Loader	2022	Purchased	\$202,906	No Change
Hyster Forklift #1587W	1999	Purchased	\$16,000	No Change
Ford F250 XL Crew 4X4	2019	Purchased	\$28,750	No Change
#7193 Chevy Silverado with upfit	2020	Purchased	\$63,464	No Change
#7202 Chevy Silverado 3500 truck with upfit	2020	Purchased	\$59,992	No Change
#7245 International HV507 single axle dump truck with spreader & plow	2022	Purchased	\$160,457	No Change
#7200 John Deere 1025R Tractor	2019	Purchased	\$18,650	No Change
Int'l Dump Truck & Snow Plow	2009	Purchased	\$100,912	No Change
International 7300 SFA 4x2 dump truck	2013	Purchased	\$114,616	No Change



Bureau of Local Systems
Ames, IA 50010

City Street Finance Report

Fiscal Year 2026

Marshalltown

8/28/2026 11:12:13 AM

Description	Model Year	Usage Type	Cost	Purchased Status
Ford 3/4 ton pickup #15049	2011	Purchased	\$21,635	No Change
Case Tractor #11490096	1985	Purchased	\$10,657	No Change
O'Halloran Dump truck & plow #33339	2011	Purchased	\$30,646	No Change
Chev Dump Truck w/ snow equip #25692	2000	Purchased	\$73,177	No Change
Leeboy Asphalt Paver #L1000 T-959	1989	Purchased	\$34,052	Sold
Chev Basket Truck #110497	1987	Purchased	\$69,842	No Change
Ford Expedition 4 x 4	2012	Purchased	\$32,316	No Change
Norstar Ironbull 102"x22'	2026	Purchased	\$11,995	New
International Dump Truck	2026	Purchased	\$221,789	New
International Dump Truck	2026	Purchased	\$221,789	New



Bureau of Local Systems
Ames, IA 50010

City Street Finance Report

Fiscal Year 2026

Marshalltown

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Street Projects

Project Description	Contract Price	Final Price	Contractor Name
2025 PCC Patch Repair Project	\$305,476	\$472,648	Cedar Falls Construction Co



Bureau of Local Systems
Ames, IA 50010

City Street Finance Report

Fiscal Year 2026

Marshalltown

8/28/2026 11:12:13 AM

Summary

	General Fund Streets (001)	Road Use (110)	Other Special Revenues	Debt Service (200)	Capital Projects (300)	Utilities (600 & U0)	Grand Total
Begining Balance	\$0	\$12,070,510	\$0	\$0	\$17,974,310	\$0	\$30,044,820
SubTotal Expenses (-)	\$2,030,403	\$1,784,650		\$4,608,503	\$5,474,182		\$13,897,738
Transfers Out (-)		\$1,246,765	\$2,479				\$1,249,244
Subtotal Revenues (+)	\$808,638	\$4,499,407	\$3,315	\$4,608,503		\$0	\$9,919,863
Transfers In (+)	\$1,221,765	\$2,479	\$25,000				\$1,249,244
Ending Balance	\$0	\$13,540,981	\$25,836	\$0	\$12,500,128	\$0	\$26,066,945

Resolution Number: 2026-157

Execution Date: Monday, September 14, 2026

Signature: Cole S. O'Donnell



**MARSHALLTOWN
MORE THAN EVER**

**Mike Ladehoff, Mayor
Carol Webb, City Administrator
24 North Center Street
Marshalltown, IA 50158
PH 641.754.5701 • FX 641.754.5717**

To: Mayor and City Council
From: Cole O'Donnell, Finance Director
Meeting Date: September 14, 2026
Re: Resolution Approving the Fiscal Year 2026 Annual Financial Report

Strategic Plan Objective:

N/A

Recommended:

Staff recommends approval of the resolution and authorizes the Mayor to sign the report for publication and submission to the Iowa Department of Management.

Budget Impact:

Timely submission of the report insures the City will not be restricted on certain revenues by the State of Iowa.

Description/Background:

The Iowa Annual Financial Report is completed on a cash basis and is a report of actual revenue and expenditures for Fiscal Year 2026. The report also compares actuals to amended budget to ensure that the City did not exceed expenditure programs. A report summary is required to be published once the City Council has reviewed and approved the report.

Revenues:

- Governmental revenues were \$56,766,927.
 - Funds included are all General, Special Revenue, Debt Service, and Capital funds.
- Proprietary revenues were \$12,476,538
- Total revenues were \$69,243,456.
- Budgeted total revenues were \$90,173,348.
- All totals include transfers.

Staff is uncertain as to the reason for the variance of actual to budget. It appears that Charges for Services were budgeted almost \$10 million more than receipts. A check of charges in the proprietary funds indicates that actual revenues were very close to budget. It may be that amended amounts submitted to the Department of Management in April of this year were

inflated to ensure actuals were within budgeted amounts, though revenues are allowed to exceed budget. Approximately \$8 million of revenue difference can be attributed to how current staff reports transfers between Fund 611 WCPC Revenue and other sewer funds. The transfers from 611 to other accounts and the transfers into those accounts were not reported. Those transfers were within the WCPC funds and equal the expenses of the receiving funds. All WCPC funds are considered as same funds.

Expenditures:

- Governmental expenditures were \$47,739,026.
 - Funds included are all General, Special Revenue, Debt Service, and Capital funds.
- Proprietary expenses were \$9,970,995.
- Total expenses, excluding transfers, were \$22,058,161.
- Budgeted expenditures were \$80,349,827.
- No program areas were exceeded.

Actual expenditures were very close to amended budget in almost every program area. Capital Projects actuals were approximately \$5 million less than budget and proprietary actuals were approximately \$12 million less. It is probable that certain capital projects budgeted for FY 26 were not completed as expected which is common and explains the difference. A large portion of the difference in proprietary is related to transfers and the way current staff reports the transfers out of Fund 611 WCPC to other WCPC funds.

Attachments:

1. 2026-09-14_2026-158_Resolution to Approve FY 26 AFR
2. FY 26 Iowa AFR UNSIGNED

RESOLUTION APPROVING THE FISCAL YEAR 2026 ANNUAL FINANCIAL REPORT

WHEREAS, the City of Marshalltown, Iowa, is required to file an annual financial report of all revenues, expenditures, and debt service; and

WHEREAS, the Annual Financial Report for Fiscal Year 2026 is complete;

WHEREAS, said report is now submitted for review and approval.

THEREFORE, IT IS HEREBY RESOLVED BY THE COUNCIL OF THE CITY OF MARSHALLTOWN, to approve the Fiscal Year 2026 Annual Financial Report and its submission to the Iowa Department of Management upon the publication of notice and signature of the Mayor.

Passed this 14th day of September 2026, and signed this _____ day of September 2026.

CITY OF MARSHALLTOWN, IOWA

Mike Ladehoff, Mayor

ATTEST:

Alicia Hunter, CMC, City Clerk

STATE OF IOWA 2026 FINANCIAL REPORT FISCAL YEAR ENDED JUNE 30, 2026 CITY OF MARSHALLTOWN, IOWA DUE: December 1, 2026	16206400800000
	CITY OF MARSHALLTOWN
	24 N Center Street
	MARSHALLTOWN IA 50158-4912
	POPULATION: 27591

NOTE - The information supplied in this report will be shared by the Iowa State Auditor's Office, the U.S. Census Bureau, various public interest groups, and State and federal agencies.

ALL FUNDS

	Governmental (a)	Proprietary (b)	Total Actual (c)	Budget (d)
Revenues and Other Financing Sources				
Taxes Levied on Property	14,345,334		14,345,334	15,047,595
Less: Uncollected Property Taxes-Levy Year	0		0	0
Net Current Property Taxes	14,345,334		14,345,334	15,047,595
Delinquent Property Taxes	514		514	0
TIF Revenues	1,315,636		1,315,636	1,420,514
Other City Taxes	6,854,875	0	6,854,875	6,739,138
Licenses and Permits	678,512	15,956	694,468	396,650
Use of Money and Property	1,965,691	1,356,359	3,322,050	2,916,100
Intergovernmental	11,233,605	877,339	12,110,944	15,890,329
Charges for Fees and Service	1,563,703	9,672,433	11,236,136	21,688,387
Special Assessments	0	0	0	0
Miscellaneous	1,668,477	12,492	1,680,969	1,881,417
Other Financing Sources	83,750	8,548	92,298	88,377
Transfers In	17,056,830	533,411	17,590,241	24,104,841
Total Revenues and Other Sources	56,766,927	12,476,538	69,243,465	90,173,348
Expenditures and Other Financing Uses				
Public Safety	12,411,307		12,411,307	13,005,137
Public Works	4,100,328		4,100,328	5,681,967
Health and Social Services	1,527,535		1,527,535	2,405,065
Culture and Recreation	3,949,402		3,949,402	5,199,932
Community and Economic Development	3,974,887		3,974,887	4,736,955
General Government	1,832,853		1,832,853	2,096,600
Debt Service	7,312,168		7,312,168	7,312,168
Capital Projects	12,630,546		12,630,546	17,853,842
Total Governmental Activities Expenditures	47,739,026	0	47,739,026	58,291,666
BUSINESS TYPE ACTIVITIES		9,970,995	9,970,995	22,058,161
Total All Expenditures	47,739,026	9,970,995	57,710,021	80,349,827
Other Financing Uses	0	0	0	0
Transfers Out	16,536,463	1,053,778	17,590,241	24,104,841
Total All Expenditures/and Other Financing Uses	64,275,489	11,024,773	75,300,262	104,454,668
Excess Revenues and Other Sources Over (Under) Expenditures/and Other Financing Uses	-7,508,562	1,451,765	-6,056,797	-14,281,320
Beginning Fund Balance July 1, 2025	54,145,856	33,028,831	87,174,687	87,174,687
Ending Fund Balance June 30, 2026	46,637,294	34,480,596	81,117,890	72,893,367

NOTE - These balances do not include the following, which were not budgeted and are not available for city operations:

Non-budgeted Internal Service Funds	Pension Trust Funds
1,719,935	Agency Funds

Private Purpose Trust Funds	
Indebtedness at June 30, 2026	Amount
General Obligation Debt	45,682,000
Revenue Debt	86,315,000
TIF Revenue Debt	269,000
General Obligation Debt Limit	
	108,967,285

CERTIFICATION

The forgoing report is correct to the best of my knowledge and belief

Publication	
Signature of Preparer	Phone Number
Printed name of Preparer	641-754-5791
Cole S. O'Donnell	
Signature of Mayor or Mayor Pro Tem (Name and Title)	Date Signed
PLEASE PUBLISH THIS PAGE ONLY	

CITY OF MARSHALLTOWN
REVENUE AND OTHER FINANCING SOURCES FOR YEAR ENDED JUNE 30, 2026

NON-GAAP/CASH BASIS

Item Description	General (a)	Special Revenue (b)	TIF Special Revenue (c)	Debt Service (d)	Capital Projects (e)	Permanent (f)	Total Governmental (Sum of (a) through (f)) (g)	Proprietary (h)	Grand Total (Sum of (g) and (h)) (i)
Section A - Taxes	1								1
Taxes levied on property	2	8,340,329	3,267,929	2,136,215	600,861		14,345,334		14,345,334
Less: Uncollected Property Taxes - Levy Year	3						0		0
Net Current Property Taxes	4	8,340,329	3,267,929	2,136,215	600,861	0	14,345,334		14,345,334
Delinquent Property Taxes	5	302	130	60	22		514		514
Total Property Tax	6	8,340,631	3,268,059	2,136,275	600,883	0	14,345,848		14,345,848
TIF Revenues	7		1,315,636				1,315,636		1,315,636
Other City Taxes									
Utility Tax Replacement Excise Taxes	8	950,501	372,322	235,329	68,630		1,626,782		1,626,782
Utility Franchise Tax (Chapter 364.2, Code of Iowa)	9	104,257					104,257		104,257
Parimutuel Wager Tax	10						0		0
Gaming Wager Tax	11						0		0
Mobile Home Tax	12	6,898	2,708	1,700	498		11,804		11,804
Hotel / Motel Tax	13	687,463					687,463		687,463
Other Local Option Taxes	14		4,424,569				4,424,569		4,424,569
Total Other City Taxes	15	1,749,119	4,799,599	237,029	69,128	0	6,854,875	0	6,854,875
Section B - Licenses and Permits	16	675,287	3,225				678,512	15,956	694,468
Section C - Use of Money and Property	17								17
Interest	18	321,540	884,171	62,135	671,301		1,965,691	1,312,418	3,278,109
Rents and Royalties	19						0	43,941	43,941
Other Miscellaneous Use of Money and Property	20						0	0	0
	21						0	0	0
Total Use of Money and Property	22	321,540	884,171	62,135	671,301	0	1,965,691	1,356,359	3,322,050
Section D - Intergovernmental	24								24
Federal Grants and Reimbursements	26								26
Federal Grants	27		1,915,551		1,017,029		2,932,580	473,123	3,405,703
Community Development Block Grants	28						0	0	0
Housing and Urban Development	29		1,394,835				1,394,835		1,394,835
Public Assistance Grants	30						0	0	0
Payment in Lieu of Taxes	31						0	0	0
	32						0	0	0
Total Federal Grants and Reimbursements	33	0	3,310,386	0	1,017,029	0	4,327,415	473,123	4,800,538
	33								33

CITY OF MARSHALLTOWN
REVENUE AND OTHER FINANCING SOURCES FOR YEAR ENDED JUNE 30, 2026

NON-GAAP/CASH BASIS

Item Description	General (a)	Special Revenue (b)	TIF Special Revenue (c)	Debt Service (d)	Capital Projects (e)	Permanent (f)	Total Governmental (Sum of (a) through (f)) (g)	Proprietary (h)	Grand Total (Sum of (g) and (h)) (i)
Section D - Intergovernmental - Continued	41								41
State Shared Revenues	43								43
Road Use Taxes	44	3,885,109					3,885,109		3,885,109
Other state grants and reimbursements	48								48
State grants	49	143,842					143,842	119,241	263,083
Iowa Department of Transportation	50	45,831			106,949		152,780	284,975	437,755
Iowa Department of Natural Resources	51						0		51
Iowa Economic Development Authority	52				5,960		5,960		5,960
CEBA grants	53						0	0	53
C&I Replacement and Tier I Business Tax Replacement	54	369,161	144,605	91,398	26,655		631,819		631,819
Property Tax Credits	55	280,272	109,992	69,648	20,223		480,135		480,135
	56						0		56
	57						0		57
	58						0		58
	59						0		59
Total State	60	793,275	4,185,537	0	159,787	0	5,299,645	404,216	5,703,861
Local Grants and Reimbursements									
County Contributions	63	45,225	183,927		1,290,933		1,520,085		1,520,085
Library Service	64						0		64
Township Contributions	65						0		65
Fire/EMT Service	66						0		66
Rec Program MCSD	67	86,460					86,460		86,460
	68						0		68
	69						0		69
Total Local Grants and Reimbursements	70	131,685	183,927	0	1,290,933	0	1,606,545	0	1,606,545
Total Intergovernmental (Sum of lines 33, 60, and 70)	71	924,960	7,679,850	0	161,046	0	11,233,605	877,339	12,110,944
Section E - Charges for Fees and Service	72								72
Water	73						0		73
Sewer	74						0	8,006,002	8,006,002
Electric	75						0		75
Gas	76						0		76
Parking	77	95,996					95,996		95,996
Airport	78	10,944					10,944		10,944
Landfill/garbage	79	144,773					144,773	98,717	243,490
Hospital	80						0		80

CITY OF MARSHALLTOWN
REVENUE AND OTHER FINANCING SOURCES FOR YEAR ENDED JUNE 30, 2026

NON-GAAP/CASH BASIS

Item Description	General (a)	Special Revenue (b)	TIF Special Revenue (c)	Debt Service (d)	Capital Projects (e)	Permanent (f)	Total Governmental (Sum of (a) through (f)) (g)	Proprietary (h)	Grand Total (Sum of (g) and (h)) (i)
Section E - Charges for Fees and Service - Continued	81								81
Transit	82						0	117,628	117,628
Cable TV	83						0		0
Internet	84						0		0
Telephone	85						0		0
Housing Authority	86						0		0
Storm Water	87						0	1,397,317	1,397,317
Other:	88								88
Nursing Home	89						0		0
Police Service Fees	90	217,387					269,029		269,029
Prisoner Care	91						0		0
Fire Service Charges	92	163,714					163,714		163,714
Ambulance Charges	93						0		0
Sidewalk Street Repair Charges	94						0		0
Housing and Urban Renewal Charges	95	210,328			12,974		223,302		223,302
River Port and Terminal Fees	96						0		0
Public Scales	97						0		0
Cemetery Charges	98						0		0
Library Charges	99	5,801					5,801		5,801
Park, Recreation, and Cultural Charges	100	453,347	100				453,447	52,769	506,216
Animal Control Charges	101						0		0
Prints and Copies	102	18,470					18,470		18,470
Administrative Service Charges	103	178,227					178,227		178,227
Total Charges for Service	104	1,333,242	217,487	0	12,974	0	1,563,703	9,672,433	11,236,136
Section F - Special Assessments	106						0		0
Section G - Miscellaneous	107								107
Contributions	108	1,259,769			5,604		1,265,373		1,265,373
Deposits and Sales/Fuel Tax Refunds	109						0		0
Sale of Property and Merchandise	110	3	5,596				5,599		5,599
Fines	111						0		0
Internal Service Charges	112						0		0
Refunds & Reimbursements	113	78,624	282,163		36,718		397,505	12,492	409,997
	114						0		0
	115						0		0
	116						0		0
	117						0		0
	118						0		0
	119						0		0
Total Miscellaneous	120	78,627	1,547,528	0	42,322	0	1,668,477	12,492	1,680,969
	120								120

CITY OF MARSHALLTOWN
REVENUE AND OTHER FINANCING SOURCES FOR YEAR ENDED JUNE 30, 2026

NON-GAAP/CASH BASIS

Item Description		General (a)	Special Revenue (b)	TIF Special Revenue (c)	Debt Service (d)	Capital Projects (e)	Permanent (f)	Total Governmental (Sum of (a) through (f) (g)	Proprietary (h)	Grand Total (Sum of (g) and (h)) (i)	
Total All Revenues (Sum of lines 6, 7, 15, 16, 22, 71, 104, 106, and 120)	121	13,423,406	18,399,919	1,342,180	2,596,485	3,864,357	0	39,626,347	11,934,579	51,560,926	121
Section H - Other Financing Sources	123										123
Proceeds of capital asset sales	124	12,970	30,723			40,057		83,750	8,548	92,298	124
Proceeds of long-term debt (Excluding TIF internal borrowing)	125							0	0	0	125
Proceeds of anticipatory warrants or other short-term debt	126							0		0	126
Regular transfers in and interfund loans	127	7,606,637	212,633		4,403,778	4,351,178		16,574,226	533,411	17,107,637	127
Internal TIF loans and transfers in	128	201,154			281,450			482,604		482,604	128
	129							0		0	129
	130							0		0	130
Total Other Financing Sources	131	7,820,761	243,356	0	4,685,228	4,391,235	0	17,140,580	541,959	17,682,539	131
Total Revenues Except for Beginning Balances (Sum of lines 121 and 131)	132	21,244,167	18,643,275	1,342,180	7,281,713	8,255,592	0	56,766,927	12,476,538	69,243,465	132
Beginning Fund Balance July 1, 2025	134	7,980,223	21,886,811	676,868	180,551	23,421,403		54,145,856	33,028,831	87,174,687	134
Total Revenues and Other Financing Sources (Sum of lines 132 and 134)	136	29,224,390	40,530,086	2,019,048	7,462,264	31,676,995	0	110,912,783	45,505,369	156,418,152	136

CITY OF MARSHALLTOWN
EXPENDITURES AND OTHER FINANCING USES FOR FISCAL YEAR ENDED JUNE 30, 2026

NON-GAAP/CASH BASIS

Item Description	Line	General (a)	Special Revenue (b)	TIF Special Revenue (c)	Debt Service (d)	Capital Projects (e)	Permanent (f)	Total Governmental (Sum of cols. (a) through (f)) (g)	Proprietary (h)	Grand Total (Sum of col. (g) (i)	Line
Section A - Public Safety	1										1
Police Department/Crime Prevention	2	6,142,881	445,389					6,588,270		6,588,270	2
Jail	3							0		0	3
Emergency Management	4	41,822						41,822		41,822	4
Flood control	5							0		0	5
Fire Department	6	4,178,858	53,322					4,232,180		4,232,180	6
Ambulance	7							0		0	7
Building Inspections	8	572,814						572,814		572,814	8
Miscellaneous Protective Services	9							0		0	9
Animal Control	10	91,362						91,362		91,362	10
Other Public Safety	11		284,072					284,072		284,072	11
Rental Inspections	12	200,880						200,880		200,880	12
Code Enforcement	13	399,907						399,907		399,907	13
Total Public Safety	14	11,628,524	782,783		0		0	12,411,307		12,411,307	14
Section B - Public Works	15										15
Roads, Bridges, Sidewalks	16	1,178,529	1,221,843					2,400,372		2,400,372	16
Parking Meter and Off-Street	17	72,882						72,882		72,882	17
Street Lighting	18	85,313	230,202					315,515		315,515	18
Traffic Control Safety	19	94,470	136,581					231,051		231,051	19
Snow Removal	20	187,155	134,749					321,904		321,904	20
Highway Engineering	21	403,695	47,534					451,229		451,229	21
Street Cleaning	22		26,449					26,449		26,449	22
Airport (if not an enterprise)	23	134,699						134,699		134,699	23
Garbage (if not an enterprise)	24	113,451	9,004					122,455		122,455	24
Other Public Works	25		18,774					18,774		18,774	25
Tree Removal	26	4,998						4,998		4,998	26
	27							0		0	27
Total Public Works	28	2,275,192	1,825,136		0		0	4,100,328		4,100,328	28
Section C - Health and Social Services	29										29
Welfare Assistance	30							0		0	30
City Hospital	31							0		0	31
Payments to Private Hospitals	32							0		0	32
Health Regulation and Inspections	33		1,527,535					1,527,535		1,527,535	33
Water, Air, and Mosquito Control	34							0		0	34
Community Mental Health	35							0		0	35
Other Health and Social Services	36							0		0	36
	37							0		0	37
	38							0		0	38
Total Health and Social Services	39	0	1,527,535		0		0	1,527,535		1,527,535	39
Section D - Culture and Recreation	40										40
Library Services	41	1,443,023	682,607					2,125,630		2,125,630	41
Museum, Band, Theater	42							0		0	42
Parks	43	729,104	107,496					836,600		836,600	43
Recreation	44	744,445	47,231					791,676		791,676	44
Cemetery	45							0		0	45
Community Center, Zoo, Marina, and Auditorium	46							0		0	46
Other Culture and Recreation	47							0		0	47
Veteran's Coliseum	48	195,496						195,496		195,496	48
	49							0		0	49
Total Culture and Recreation	50	3,112,068	837,334		0		0	3,949,402		3,949,402	50

CITY OF MARSHALLTOWN
EXPENDITURES AND OTHER FINANCING USES FOR FISCAL YEAR ENDED JUNE 30, 2026 -- Continued

NON-GAAP/CASH BASIS

Item description	Line	General (a)	Special Revenue (b)	TIF Special Revenue (c)	Debt Service (d)	Capital Projects (e)	Permanent (f)	Total Governmental (Sum of cols. (a) through (f)) (g)	Proprietary (h)	Grand Total (Sum of col. (g)) (i)	Line
Section E - Community and Economic Development	51										51
Community beautification	52	16,960	66,844					83,804		83,804	52
Economic development	53	200,463	282,286					482,749		482,749	53
Housing and urban renewal	54	378	1,418,597					1,418,975		1,418,975	54
Planning and zoning	55	85,243	121,744					206,987		206,987	55
Other community and economic development	56	365,217	175,000					540,217		540,217	56
TIF Rebates	57			1,242,155				1,242,155		1,242,155	57
	58							0		0	58
Total Community and Economic Development	59	668,261	2,064,471	1,242,155	0	0	0	3,974,887		3,974,887	59
Section F - General Government	60										60
Mayor, Council and City Manager	61	266,064	5,000					271,064		271,064	61
Clerk, Treasurer, Financial Administration	62	885,307						885,307		885,307	62
Elections	63	3,303						3,303		3,303	63
Legal Services and City Attorney	64	56,151						56,151		56,151	64
City Hall and General Buildings	65	297,128	35,166					332,294		332,294	65
Tort Liability	66							0		0	66
Other General Government	67	5,957						5,957		5,957	67
Human resources	68	156,782						156,782		156,782	68
IT	69	121,995						121,995		121,995	69
Total General Government	70	1,792,687	40,166		0	0	0	1,832,853		1,832,853	70
Section G - Debt Service	71							0		0	71
PRINCIPAL	72				5,840,000			5,840,000		5,840,000	72
INTEREST & FEES	73				1,472,168			1,472,168		1,472,168	73
Total Debt Service	74	0	0	0	7,312,168	0	0	7,312,168		7,312,168	74
Section H - Regular Capital Projects - Specify	75										75
Various Capital Projects	76	518,478				12,112,068		12,630,546		12,630,546	76
	77							0		0	77
Subtotal Regular Capital Projects	78	518,478	0	0	0	12,112,068	0	12,630,546		12,630,546	78
TIF Capital Projects - Specify	79										79
	80							0		0	80
	81							0		0	81
Subtotal TIF Capital Projects	82	0	0	0	0	0	0	0		0	82
Total Capital Projects	83	518,478	0	0	0	12,112,068	0	12,630,546		12,630,546	83
Total Governmental Activities Expenditures (Sum of lines 14, 28, 39, 50, 59, 70, 74, 83)	84	19,995,210	7,077,425	1,242,155	7,312,168	12,112,068	0	47,739,026		47,739,026	84
	85										85

TIF Rebates are expended out of the TIF Special Revenue Fund within the Community and Economic Development program's activity "Other"

CITY OF MARSHALLTOWN
EXPENDITURES AND OTHER FINANCING USES FOR FISCAL YEAR ENDED JUNE 30, 2026 -- Continued

NON-GAAP/CASH BASIS

Item description	Line	General (a)	Special Revenue (b)	TIF Special Revenue (c)	Debt Service (d)	Capital Projects (e)	Permanent (f)	Total Governmental (Sum of cols. (a) through (f)) (g)	Proprietary (h)	Grand Total (Sum of col. (g)) (i)	Line
Section I - Business Type Activities	87										87
Water - Current Operation	88									0	88
Capital Outlay	89									0	89
Debt Service	90									0	90
Sewer and Sewage Disposal - Current Operation	91								4,836,439	4,836,439	91
Capital Outlay	92								1,373,500	1,373,500	92
Debt Service	93								1,683,255	1,683,255	93
Electric - Current Operation	94									0	94
Capital Outlay	95									0	95
Debt Service	96									0	96
Gas Utility - Current Operation	97									0	97
Capital Outlay	98									0	98
Debt Service	99									0	99
Parking - Current Operation	100									0	100
Capital Outlay	101									0	101
Debt Service	102									0	102
Airport - Current Operation	103									0	103
Capital Outlay	104									0	104
Debt Service	105									0	105
Landfill/Garbage - Current operation	106								32,618	32,618	106
Capital Outlay	107									0	107
Debt Service	108									0	108
Hospital - Current Operation	109									0	109
Capital Outlay	110									0	110
Debt Service	111									0	111
Transit - Current Operation	112								1,087,261	1,087,261	112
Capital Outlay	113									0	113
Debt Service	114									0	114
Cable TV, Telephone, Internet - Current Operation	115									0	115
Capital Outlay	116									0	116
Housing Authority - Current Operation	117									0	117
Capital Outlay	118									0	118
Debt Service	119									0	119
Storm Water - Current Operation	120								900,563	900,563	120
Capital Outlay	121									0	121
Debt Service	122									0	122
Other Business Type - Current Operation	123								57,359	57,359	123
Capital Outlay	124									0	124
Debt Service	125									0	125
Internal Service Funds - Specify	126										126
	127									0	127
	128									0	128
Total Business Type Activities	129								9,970,995	9,970,995	129

CITY OF MARSHALLTOWN
EXPENDITURES AND OTHER FINANCING USES FOR FISCAL YEAR ENDED JUNE 30, 2026 -- Continued

NON-GAAP/CASH BASIS

Item description	Line	General (a)	Special Revenue (b)	TIF Special Revenue (c)	Debt Service (d)	Capital Projects (e)	Permanent (f)	Total Governmental (Sum of cols. (a) through (f)) (g)	Proprietary (h)	Grand Total (Sum of col. (g)) (i)	Line
Subtotal Expenditures (Sum of lines 84 and 129)	130	19,995,210	7,077,425	1,242,155	7,312,168	12,112,068	0	47,739,026	9,970,995	57,710,021	130
Section J - Other Financing Uses Including Transfers Out	131										131
Regular transfers out	132	715,859	10,226,775			5,111,225		16,053,859	1,053,778	17,107,637	132
Internal TIF loans/repayments and transfers out	133			482,604				482,604		482,604	133
	134							0		0	134
Total Other Financing Uses	135	715,859	10,226,775	482,604	0	5,111,225	0	16,536,463	1,053,778	17,590,241	135
Total Expenditures and Other Financing Uses (Sum of lines 130 and 135)	136	20,711,069	17,304,200	1,724,759	7,312,168	17,223,293	0	64,275,489	11,024,773	75,300,262	136
	137										137
Ending fund balance June 30, :	138										138
Governmental:	139										139
Nondisposable	140							0		0	140
Restricted	141	4,826,283	23,225,886	294,289	150,096	622,196		29,118,750		29,118,750	141
Committed	142					13,831,506		13,831,506		13,831,506	142
Assigned	143							0		0	143
Unassigned	144	3,687,038						3,687,038		3,687,038	144
Total Governmental	145	8,513,321	23,225,886	294,289	150,096	14,453,702	0	46,637,294		46,637,294	145
Proprietary	146								34,480,596	34,480,596	146
Total Ending Fund Balance June 30,	147	8,513,321	23,225,886	294,289	150,096	14,453,702	0	46,637,294	34,480,596	81,117,890	147
Total Requirements (Sum of lines 136 and 147)	148	29,224,390	40,530,086	2,019,048	7,462,264	31,676,995	0	110,912,783	45,505,369	156,418,152	148

OTHER P10

Intergovernmental Expenditures
Part III Please report below expenditures made to the State or to other local governments on a reimbursement or cost sharing basis. Include these expenditures in part II. Enter amount.

Purpose	Amount paid to other local governments		Amount paid to State	
	Purpose		Highways All other	
Correction				
Health				
Highways			163,761	
Transit Subsidies				
Libraries				
Police protection				
Sewerage				
Sanitation	110,364			
All other	53,397			

Part IV

Wages & Salaries
Report here the total salaries and wages paid to all employees of your government before deductions of social security, retirement, etc. Include also salaries and wages paid to employees of any utility owned and operated by your government, as well as salaries and wages of municipal employees charged to construction projects.

YOU ARE REQUIRED TO ENTER SALARY DOLLARS IN THE Amount areas FOR SALARIES AND WAGES PAID			Amount	
Total Salaries and Wages Paid			13,590,577	

Part V Debt Outstanding, Issued, and Retired

Transit subsidies

A. Long-Term Debt

Debt During the Fiscal Year		Debt Outstanding JUNE 30, 2026						
Purpose	Line	Debt Outstanding JULY 1, 2025	Issued	Retired	General Obligation	TIF Revenue	Revenue	Other
Water Utility	1.	4,309,000	65,000,000	354,000	0	0	68,955,000	0
Sewer Utility	2.	19,990,000	0	2,630,000	0	0	17,360,000	0
Electric Utility	3.	0	0	0	0	0	0	0
Gas Utility	4.	0	0	0	0	0	0	0
Transit-Bus	5.	0	0	0	0	0	0	0
Industrial Revenue	6.	0	0	0	0	0	0	0
Mortgage Revenue	7.	0	0	0	0	0	0	0
TIF Revenue	8.	545,000	0	276,000	0	269,000	0	0
Other Purposes / Miscellaneous	9.	0	0	0	0	0	0	0
GO	10.	49,141,000	0	4,854,000	44,287,000	0	0	0
Parking	11.	0	0	0	0	0	0	0
Airport	12.	1,610,000	0	215,000	1,395,000	0	0	0
Stormwater	13.	0	0	0	0	0	0	0
Section 108	14.	0	0	0	0	0	0	0
Total Long-Term		75,595,000	65,000,000	8,329,000	45,682,000	269,000	86,315,000	0

B. Short-Term Debt

Outstanding as of July 1, 2025	77,827,174
Outstanding as of JUNE 30, 2026	69,498,174

Part VI DEBT LIMITATION FOR GENERAL OBLIGATIONS

Actual valuation -- January 1, 2024

Amount	
2,179,345,717	x.05 = \$ 108,967,285.85

Part VII CASH AND INVESTMENT ASSETS AS OF JUNE 30, 2026

Type of asset		Amount		
Cash and investments - Include cash on hand, CD's, time, checking and savings deposits, Federal securities, Federal agency securities, State and local government securities, and all other securities. Exclude value of real property.	Bond and interest funds (a)	Bond construction funds (b)	Pension/retirement funds (c)	All other Funds (d)
	150,096	14,733,245	368,892	67,585,592
				82,837,825

If you budget on a NON-GAAP CASH BASIS, the amount in the Total above SHOULD EQUAL the above summed amounts on

CITY DEBT DETAIL - LT DEBT1

Debt Series Name	Type of Debt	Date of Issuance	Debt Resolution	Rate Range	Voted	Amount of Issue	Principal Outstanding July 1, 2025	Fiscal Year Principal Paid	Fiscal Year Interest Paid	Tied to Other Debt	Purpose of Debt	Projects Funded by Debt
TIF Agreements	1 TIF Agreement	06-30-2026	TIF	0	No Vote - Non- GO	1,480,982	0	1,480,982	0		TIF Revenue	DEVELOPER AGREEMENTS, ECONOMIC DEVELOPMENT, DEBT SERVICE
2013 SEWER REVENUE	2 Revenue	06-18-2013	2013-096	2.09 - 2.09	No Vote - Non- GO	3,700,000	860,000	281,000	16,511		Sewer Utility	SEWER IMPROVEMENTS
WW-SRF FS-64-16-DW/SRF-007	3 Revenue	07-29-2016	MWW#530	1.75 - 1.75	No Vote - Essential GO	7,833,531	4,309,000	354,000	75,407		Water Utility	WATER TREATMENT PLANT UPGRADES
2016A STORM WATER	4 GO	08-19-2016	2016-147	2.00 - 2.00	No Vote - Essential GO	2,965,000	1,275,000	170,000	25,500		General Obligation (GO)	VARIOUS STORM WATER PROJECTS
2016 B GO PD/FD	5 GO	12-01-2016	2016-228	0.00 - 20.00	Voted	4,780,000	1,955,000	475,000	39,100		General Obligation (GO)	POLICE AND FIRE STATION
2017 GO PD/FD	6 GO	10-10-2017	2017-246	3.00 - 3.00	Voted	12,720,000	9,850,000	350,000	295,500		General Obligation (GO)	POLICE AND FIRE STATION
2018 GO STREETS/SIDEWALKS	7 GO	12-03-2018	2018-201	3.00 - 3.00	No Vote - Essential GO	1,900,000	1,580,000	375,000	47,400		General Obligation (GO)	STREETS & SIDEWALKS
2018 GO PARKING LOT	8 GO	12-03-2018	2018-201	0.00 - 0.00	No Vote - Below Threshold	500,000	0	0	0		General Obligation (GO)	MUNICIPAL PARKING LOT
2019 GO GOVERNMENTAL	9 GO	12-10-2019	2019-312	2.00 - 2.00	No Vote - Essential GO	5,610,000	3,220,000	725,000	64,400		General Obligation (GO)	STREETS, BRIDGES, PARKS
2019 GO SEWER	10 GO	12-10-2019	2019-312	2.00 - 2.00	No Vote - Essential GO	3,220,000	495,000	495,000	9,900		Sewer Utility	VARIOUS SEWER PROJECTS
2020 SEWER REVENUE	11 Revenue	12-13-2019	2019-339	1.96 - 1.96	No Vote - Non- GO	5,065,000	1,970,000	555,000	38,612		Sewer Utility	SEWER PROJECTS REFUNDING
2020 A TIF	12 TIF Revenue	09-28-2020	2020-257	1.00 - 1.00	No Vote - Essential GO	912,500	545,000	276,000	5,450		TIF Revenue	REFUNDING FOR STREETS
2020 A GOVERNMENTAL	13 GO	09-28-2020	2020-257	1.00 - 1.00	No Vote - Essential GO	3,731,000	3,146,000	559,500	31,460		General Obligation (GO)	FIRE TRUCK, STREETS, SIDEWALKS
2020 A STORMWATER	14 GO	09-28-2020	2020-257	1.00 - 1.00	No Vote - Essential GO	3,360,000	1,820,000	335,000	17,450		General Obligation (GO)	VARIOUS STORM WATER PROJECTS
2020 A ESSENTIAL- BELOW THRESHOLD	15 GO	09-28-2020	2020-257	1.00 - 1.00	No Vote - Below Threshold	1,586,500	245,000	104,500	2,090		General Obligation (GO)	RR QUIET ZONE, TENNIS COURTS, TRAILS
2020 B AIRPORT	16 GO	09-28-2020	2020-258	1.00 - 1.35	No Vote - Essential GO	2,030,000	1,610,000	215,000	18,025		Airport	AIRPORT IMPROVEMENTS HANGARS AND TERMINAL
2021 SEWER REVENUE	17 Revenue	03-22-2021	2021-070	1.23 - 1.23	No Vote - Non- GO	4,335,000	1,690,000	556,000	20,787		Sewer Utility	REFUND SERIES 2015 SEWER REVENUE
2021 A SRF C1015R-WRR	18 Revenue	09-13-2021	2021-242	0.86 - 0.86	No Vote - Non- GO	3,790,000	2,941,000	181,000	25,292		Sewer Utility	MANHOLE & POINT PROJECT
2021 GO	19 GO	12-14-2021	2021-334	2.00 - 2.00	No Vote - Essential GO	8,930,000	7,125,000	725,000	142,500		General Obligation (GO)	STREET REPAIRS, VIADUCT, PARKING LOT, PARKS, SIDEWALKS, DEMO/RESOTRATION OF DANGEROUS/DIPLAIDATED PROPERTY
2022 A GO	20 GO	12-13-2022	2022-326	4.00 - 4.20	No Vote - Essential GO	8,900,000	8,372,334	376,333	330,100		General Obligation (GO)	SPLASH PAD, PARK IMPROVEMENTS, STREET REPAIRS, SIDEWALKS

CITY DEBT DETAIL - LT DEBT2

Debt Series Name	Type of Debt	Date of Issuance	Debt Resolution	Rate Range	Voted	Amount of Issue	Principal Outstanding July 1, NaN	Fiscal Year Principal Paid	Fiscal Year Interest Paid	Tied to Other Debt	Purpose of Debt	Projects Funded by Debt
2022 A GO ESSENTIAL- NO VOTE	21	12-13-2022	2022-326	4.00 - 4.20	No Vote - Below Threshold	655,000	567,666	43,667	31,059		General Obligation (GO)	TRAILS, MUNICIPAL PARKING LOT
2022 B D&D	22	12-13-2022	2022-327	4.80 - 4.80	No Vote - Essential GO	610,000	390,000	125,000	18,720		General Obligation (GO)	AQUISITION, RETORATION, DEMOLITION OF DELAPIDATED/DANGEROUS PROPERTY
2023 SRF C1332R	23	01-09-2023	2023-007	1.75 - 1.75	No Vote - Non-GO	13,125,000	12,034,000	562,000	210,595		Sewer Utility	CIPP AND HEADWORKS PROJECTS
2023 GO	24	12-11-2023	2023-246	4.00 - 4.25	No Vote - Essential GO	9,140,000	8,923,350	455,700	360,107		General Obligation (GO)	STREET REPAIR/SIDEWALKS
2023 GO ESSENTIAL NO VOTE	25	12-11-2023	2023-246	4.00 - 4.25	No Vote - Below Threshold	700,000	671,650	34,300	27,104		General Obligation (GO)	DOWNTOWN STREETSCAPE
WW-SRF-FS-64-23-DW-SRF-079	26	11-18-2025	MWW#656	3.01 - 3.01	No Vote - Essential GO	22,750,000	0	0	78,374		Water Utility	WATERTREATMENT PLANT ENGINEERING AND UPGRADES
WW-SRF-FS-64-23-DW-SRF-079 TAXABLE	27	11-18-2025	MWW#657	3.89 - 3.89	No Vote - Essential GO	42,250,000	0	0	189,655		Water Utility	WATERTREATMENT PLANT ENGINEERING AND UPGRADES
	28	-			-						-	-
	29	-			-						-	-
	30	-			-						-	-
	31	-			-						-	-
	32	-			-						-	-
	33	-			-						-	-
	34	-			-						-	-
	35	-			-						-	-
	36	-			-						-	-
	37	-			-						-	-
	38	-			-						-	-
	39	-			-						-	-
	40	-			-						-	-



**MARSHALLTOWN
MORE THAN EVER**

**Mike Ladehoff, Mayor
Carol Webb, City Administrator
24 North Center Street
Marshalltown, IA 50158
PH 641.754.5701 • FX 641.754.5717**

To: Mayor and City Council
From: Carol Webb, City Administrator
Meeting Date: September 14, 2026
Re: Resolution Approving an Agreement with Mechdyne Corporation for the City Council Chambers Audiovisual System and South-Wall Small Meeting Area

Strategic Plan Objective:

Continually improve and sustain the City's infrastructure, organization, and services. (Integrate technology)

Recommended:

Staff recommends approval.

Budget Impact:

The total cost of the agreement is \$82,909.91 and will be funded from fund 030.

Description/Background:

The City issued a performance-based request for proposals on June 19, 2026, for a complete audiovisual system in the City Council Chambers. The current system requires multiple computers and manual steps to conduct, livestream, and record meetings. The project is intended to simplify operation, improve audio and video quality, support hybrid participation, and provide dependable livestreaming, recording, and fallback options. The City received three responses to the RFP.

After reviewing the RFP criteria, staff recommends Mechdyne's base system. The QSC Q-SYS platform consolidates audio, video routing, camera control, streaming inputs, USB bridging, and room controls while reusing selected equipment where practical. Staff is also including an optional package to install AV equipment for the south wall small meeting area located within the Council Chambers.

Attachments:

1. 2026-09-14_2026-160_Resolution approving contract with Mechdyne
2. Mechdyne Quote

3. Marshalltown City Council Chambers SOW
4. Council Chambers AV Performance Specifications RFP

**RESOLUTION APPROVING AN AGREEMENT WITH MECHDYNE CORPORATION
FOR THE CITY COUNCIL CHAMBERS AUDIOVISUAL SYSTEM**

WHEREAS, the City of Marshalltown seeks to replace and substantially improve the audiovisual system in the City Council Chambers to simplify meeting operation, improve audio and video quality, support hybrid participation, and provide reliable livestreaming and recording; and

WHEREAS, the City issued a Request for Proposal for the City Council Chambers Audiovisual System on June 19, 2026, with proposals due July 22, 2026; and

WHEREAS, Mechdyne Corporation submitted a proposal consisting of a Scope of Work for a turnkey QSC Q-SYS-based audiovisual system; and

WHEREAS, staff has reviewed the proposal under the evaluation considerations stated in the Request for Proposal and recommends approval of Mechdyne's base system in the amount of \$73,923.36 and AV for a south wall small meeting area in the amount of \$8,986.55; and

WHEREAS, the automated camera preset recall option and new projector option are not included in the recommended award; and

WHEREAS, the City Council finds that approval of the base system and the south wall small meeting area is in the best interests of the City and will improve the reliability, accessibility, and operation of official public meetings.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF MARSHALLTOWN, IOWA:

Section 1. Approval. The agreement with Mechdyne Corporation is approved for the base City Council Chambers audiovisual system and the south wall small meeting area described in the following contract documents, which are incorporated by reference: (a) the City's Request for Proposal issued June 19, 2026; (b) Mechdyne Quote No. M-Town City CC-AP-MD-2026-08-10 dated August 10, 2026; and (c) the Mechdyne Scope of Work dated August 10, 2026.

Section 2. Authorized Amount and Scope. The total authorized amount shall not exceed \$82909.91. This approval is limited to the base system and the south wall small meeting area option. The automated camera preset recall option and new projector option are expressly excluded.

Section 3. Controlling Terms and Final Acceptance. In the event of a conflict among the contract documents, the Request for Proposal shall control. The system shall not be considered complete until the City has conducted and approved final acceptance testing, and Mechdyne has corrected deficiencies identified during that testing. Final payment is contingent upon such completion and acceptance.

Section 4. Conditions Before Execution. Execution and commencement of work are subject to: (a) final review and approval as to form by the City Attorney; (b) receipt of the insurance certificate required by the Request for Proposal, including additional-insured status for the City under the applicable liability coverage; (c) written confirmation that the quoted pricing remains valid through execution; and (d) confirmation of available funds and applicable tax-exempt treatment.

Section 5. Authority to Execute and Administer. The Mayor and City Clerk are authorized to execute the agreement and related documents on behalf of the City. The City Administrator is authorized to administer the agreement and approve non-material clarifications consistent with this Resolution and the City's purchasing procedures.

Section 6. Changes and Additional Costs. No option, change in scope, additional trip, tariff, tax not otherwise exempt, or other additional charge may increase the authorized amount unless approved in writing in accordance with the City's purchasing procedures and applicable law.

Section 7. Effective Date. This Resolution shall be effective immediately upon its passage and approval.

Passed this 14th day of September 2026, and signed this _____ day of September 2026.

CITY OF MARSHALLTOWN, IOWA

Mike Ladehoff, Mayor

ATTEST:

Alicia Hunter, City Clerk



System Quote

All pricing is in US Dollars.

ITEM	QTY	COST/UNIT	EXTENDED
Main Base Package			
• OFE Existing Projectors, Reuse Existing Projectors	2	\$0.00	\$0.00
• OFE Da-Lite Screen, OFE Screen, 16:9, 104" wide by 58" tall, 119" Diagonal	2	\$0.00	\$0.00
• Extron DA6 HD 4K PLUS, Six Output 4K/60 HDMI DA	1	\$1,053.33	\$1,053.33
• OFE Dais Monitors, Existing Tabletop Monitors on the Dais	6	\$0.00	\$0.00
• OFE Control Desk Equipment, Owner-Furnished Monitor, Keyboard, and Mouse for Control Desk Station	1	\$0.00	\$0.00
• QSC NV-21-HU, 4K60 4:4:4 Network Video Endpoint for Q-SYSEcosystem, software configurable as Encoder or Decoder. 1 HDMI 2.0 Input, 1 USB-C Input, 1 HDMI 2.0 output.	8	\$1,826.34	\$14,610.72
• QSC NC-12x80, 12x Optical Zoom 80° Horizontal Field of View, PTZ Network Camera, PoE, with HDMI and SDI output	2	\$3,960.00	\$7,920.00
• QSC PTZ-CMB1, Accessory Ceiling Mount Bracket for PTZ Camera	2	\$132.80	\$265.60
• QSC Core 24f, Q-SYS Core Processor with 24 local audio I/O channels, 160x160 total network I/O channels with 8x8 Software-based Dante license included, USB AV bridging, dual Ethernet ports for network redundancy plus two auxiliary Ethernet ports, two RS232 ports, 8x8 GPIO, 24 next-generation AEC processors, 1RU. Includes Scripting/UCI functionality.	1	\$5,132.00	\$5,132.00
• QSC QIO-ML4i, Q-SYS peripheral providing 4 mic/line inputs. Up to 4 devices daisy-chainable. 1U-1/4W	3	\$649.60	\$1,948.80
• QSC QIO-ML2x2, Q-SYS peripheral providing 2 mic/line inputs and 2 line outputs. Up to 4 devices daisychainable. 1U-1/4W	1	\$608.00	\$608.00
• QSC SPA2-200, 1/2 RU 2 Channel ENERGY STAR amplifier / Stereo Operation 200 watts into 8Ω & 4Ω, Bridged operation 400 watts into 8Ω & 4Ω, and 350 watts into 70v and 100v / 100-240 VAC Operation	1	\$740.00	\$740.00
• QSC AD-C6T-LPZB-WH, 6.5" Two-way ceiling speaker, 70/100V transformer with 16Ωbypass, zero bezel design, low profile, 135° conical DMT coverage, includes C-rign and rails for blind mount installation. Priced individually, sold in pairs. White	2	\$276.00	\$552.00
• QSC AD-C6T-LPZB-WH, 6.5" Two-way ceiling speaker, 70/100V transformer with 16Ωbypass, zero bezel design, low profile, 135°	6	\$276.00	\$1,656.00
• OFE Dais Mics, Reuse Existing Dais Mics	12	\$0.00	\$0.00
• Shure MX418/C, Cardioid-18" Gooseneck Condenser Microphone, Attached Preamp with XLR, Shock Mount, Flange Mount, Snap-Fit Foam Windscreen	2	\$294.67	\$589.34

• QSC TSC-710t-G3, Table top mounting accessory for TSC-70-G3 and TSC-101-G3	1	\$390.40	\$390.40
• QSC TSC-101-G3, Q-SYS 10.1" PoE Touch Screen Controller for In-Wall Mounting., Black Only	1	\$2,772.00	\$2,772.00
• OFE Networking Equipment, Client to provide and configure all network switches for all AV Equipment	1	\$0.00	\$0.00
• Existing Rack, Reuse Existing Rack Frame	1	\$0.00	\$0.00
• Middle Atlantic TBD, Rack Accessories including Basic Power Distribution, Rack Shelves, Thermal and Cable Management for Visualization Systems	1	\$1,333.33	\$1,333.33
• Mechdyne Cabling, Consumables & Adapters	1	\$2,000.00	\$2,000.00
• Liberty 24-4P-P-L6SH-BLK, CABLE, Category 6E UTP, Plenum, Shielded, Black	2000	\$1.00	\$2,000.00
• Liberty 12-2C-P-BLK, CABLE, Speaker, Plenum, 12 AWG, Black	1000	\$0.93	\$933.30
• Mechdyne Design and Integration:			\$28,254.54
• AV Design			
• Mechanical Design			
• AV Engineering			
• Mechanical Engineering			
• AE Design			
• Project Management			
• Installation			
• Staging			
• Mechdyne Shipping and Handling:	1	\$1,164.00	\$1,164.00

Maintenance Support

• Pricing for Year 1	1	\$5,241	\$5,241
• In-Kind Donation of 1 Year Support	1	-\$5,241	-\$5,241
		Total:	\$0

• 20 Retainer Hours		Included	Included
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Retainer Hours are a set of prepaid hours that may be used to perform Preventative Maintenance and Service Support tasks. Retainer hours are requested on an ad-hoc basis

- The Service Desk is available 24/7/365 to answer calls and open Cases. Remote Support is available during normal business hours 8am - 5pm (CST) excluding Mechdyne holidays.
- Priority repair service- Priority service is provided to our contract clients. This means you will be serviced before those who do not have contracts.
- Discounted labor rates- Maintenance contract clients receive discounted labor rates for any work provided that is not covered under the maintenance contract.

- Maintenance included in this quote does not cover client negligence, including the effects of the presence of significant dust and dirt.
- Other exclusions, limitations, terms, and conditions may apply to the Mechdyne Service and Warranty solutions. Final terms and services are governed by the signed Service Agreement. Please speak with your account representative for a comprehensive support proposal.

Total	\$73,923.36
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Automated Camera Preset Recall Option

• QSC VSA-100, VisionSuite AI Accelerator, enterprise AI processing unit, 1RU; requires purchase of VisionSuite software licenses SLVS-AI-P and SLVS-3YR. For VisionSuite Native (VisionSuite Designer), one VSA-100 per Core is supported.	1	\$7,344.00	\$7,344.00
• QSC SLVS-AI-P, Perpetual VisionSuite license; supports audience and presentation space tracking. One license required per room running VisionSuite. SLVS-AI-3YR required for the first 3 years to receive ongoing updates and support. VSA-100 AI Accelerator required.	1	\$2,504.00	\$2,504.00
• QSC SLVS-AI-3YR, VisionSuite SLVS-AI-3YR update and support license; bundled with every SLVS-AI-P license. One license required per VSA-100. Upon expiring, VisionSuite will continue to operate as is without the ability to update to new VisionSuite and Q-SYS Designer features. VSA-100 AI	1	\$3,760.00	\$3,760.00
• Mechdyne Cabling, Consumables & Adapters	1	\$1,333.33	\$1,333.33
• Mechdyne Design and Integration:			\$13,903.91
		Option Total	\$28,845.24

New Projectors Option

• Sharp XP-P701U-W, WUXGA 7000 Lumen Laser Projector - White	2	\$4,713.33	\$9,426.66
• Chief Mfg. RPMAU, Small Universal Projector Mount, Black (Up to 50 lbs)	2	\$288.04	\$576.08
• Existing Support Structure, Reuse Existing Pole and installed ceiling structure - Assumes existing structure can support new projectors	2	\$0.00	\$0.00
• Mechdyne Design and Integration:			\$4,467.27
		Option Total	\$14,470.01

Small Meeting Area Option

• Samsung QB65C, 65-inch Commercial 4K UHD Display, 350 NIT, 16/7	1	\$1,237.12	\$1,237.12
• Barco Clickshare Bar Pro, Barco ClickShare All-in-One Video Bar Pro with Two Buttons	1	\$4,304.61	\$4,304.61
• Chief Mfg. XTM1U, X-Large Fusion Micro-Adjustable Tilt Wall Mount	1	\$504.64	\$504.64
• Mechdyne Design and Integration:			\$2,940.18

NOTE: Pricing proposed is only valid as shown. This price is lower than what would be charged if the same items were sold separately. If you wish to purchase a line item or portion of this proposal, an updated quote is required.

TERMS AND CONDITIONS

Taxes	Not Included will bill actuals.
Import Duties, Tariffs, VAT, etc.	Not Included will bill actuals.
Shipping and Handling	Domestic. Standard ground shipping included to client's location. Client will pay all costs of any insurance requested by Client. Client, at its expense, will make and negotiate any claims against carrier or insurer. Incoterms (2010) are CPT.
Travel and Living	Included.
Travel Conditions	Mechdyne Corporation will not require business travel to a country if there are US, Canadian, British, or other local foreign government travel warnings or alerts that strongly advise against travel or advise against non-essential travel. Human resources, the Director of Operations, and the executive vice president may also defer an employee's travel at their discretion.
Payment Terms	50/50 - 50% upon receipt of purchase order, 50% upon completion of installation. Client will be provided a temporary system license; permanent system license will be issued upon final payment. A 1% surcharge will be added on balances older than 30 days.
Time to Deliver	Determined on receipt of PO.
Site Conditions	If a trip can not be completed because the project site does not meet the conditions set forth in the Mechdyne <i>Facilities Recommendations Document</i> , Mechdyne has the option to repeat the trip, reschedule future trips, and charge for any repeated trips and/or cost of rescheduling trips.
Site Cleanliness	Dust and dirt can have a serious detrimental impact on the quality and functionality of advanced display system electronics and support hardware. This quote assumes that the facilities renovation work by other contractor trades will be fully completed, signed-off, and thoroughly cleaned prior to Mechdyne beginning the installation of the system. If the client chooses to require the Mechdyne team to install the system in unfinished facility conditions, this will require additional return trips for cleaning and final system alignment at a significant extra charge to the client not included in this installation quote or maintenance support. The definition of "unfinished facility conditions" will be at the sole discretion of the Mechdyne Installation Manager and Project Manager. Mechdyne will bill any such return trips to the client as change orders. Acceptance of this quote will represent acknowledgment on the part of the client that the client understands and accepts these conditions.
Changes in Scope of Work	Costs resulting from changes in the scope of this project or additional requirements applied to Mechdyne by Client will be added to or subtracted from the system price, depending on the changes. Once Mechdyne is aware of a change, we will submit a Change Order for review and approval by Client before continuing with the project.
Insurance and Liability	Delivery will be deemed complete and risk of loss or damage to the Products will pass to Client upon delivery to the carrier. Client will pay all costs of any insurance requested by Client. All Products shall be deemed accepted by Client upon shipment.

Client Purchase Order

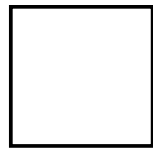
Mechdyne Corporation
Attn: Sales Administration
11 East Church Street, 4th Floor
Marshalltown, IA 50158
Phone: 641-754-4649
Fax: 641-754-4650
Emails: PurchaseOrders@mechdyne.com

Quote is valid for 30 days.

This Proposal is the property of Mechdyne Corporation. It contains engineering data developed specifically by Mechdyne for this Proposal and is proprietary to Mechdyne. The information contained herein is strictly for the purpose of Proposal evaluation by CLIENT and must not be disclosed, copied, loaned or circulated to any third party without prior written permission of Mechdyne Corporation. Unforeseen events including changes in government policy may affect the availability and/or pricing of technologies included in this solution. Should this proposal be affected, the Mechdyne team will make any necessary modifications in order to present an update or the best possible alternative

Submitted by:

Luke Sponsler
Account Manager



Mechdyne
ENABLING DISCOVERY

Technical Specification

City of Marshalltown – City Council Chambers Audiovisual System

August 10th, 2026

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1 Project Summary

The City of Marshalltown (the “City”) is seeking to replace and substantially improve the audiovisual system in its City Council Chambers. The existing system requires multiple computers and several manual steps to conduct, livestream, and record meetings, and no longer delivers the audio clarity, video quality, reliability, or ease of use expected for official public meetings. Mechdyne proposes a complete turnkey solution – including design, equipment, installation, programming, integration, testing, training, documentation, warranty service, and support – that consolidates meeting operation onto a single, unified platform.

The proposed design is built on the QSC Q-SYS ecosystem, an integrated audio, video, and control platform that reduces reliance on multiple separate computers and manual workarounds. The system is engineered to support City Council meetings, board and commission meetings, public presentations, public comment, hybrid participation, remote participation, livestreaming, and meeting recording, all operated from a simplified, centralized command station. Reliability and sensible fallback options are incorporated throughout so that meetings can continue in the event of equipment or connectivity issues.

Wherever appropriate, the design reuses suitable existing hardware – including the room’s projection and display infrastructure and equipment rack – to reduce cost and installation time while maximizing performance.

2 Existing System Review and Integration

As required by the RFP, Mechdyne has reviewed the existing audiovisual system and identified equipment recommended for replacement, equipment that may be reused, and equipment that may be retained only as backup. Final determinations will be confirmed during the vendor site visit. The City’s current system includes, but is not limited to:

AMX NX-3200 NetLinx NX Integrated Controller and 10.1” Modero G5 tabletop touch panel

AMX PR01-0808 presentation switcher and AMX Precis 4x1+1 4K60 HDMI windowing processor

BSS BLU800M / BLU320M signal processors with AEC, mic/line, and USB peripheral cards

JBL CSA2120 amplifier with transformer kit and four JBL Control 16C/T ceiling speakers

Eleven AKG CGN321 gooseneck dais microphones and one AKG gooseneck podium microphone

Two PTZOptics PT20X-SDI conferencing cameras

Two ceiling-mounted projectors, five dais tabletop monitors (HDMI splitters), and separate GoToMeeting and OBS streaming PCs

Recommended for replacement: the AMX control system, BSS signal processing, AMX HDMI windowing processor, JBL amplifier and speakers, AKG microphones, and PTZOptics cameras are replaced by the unified Q-SYS platform to eliminate manual input switching, multiple operator PCs, and the blue-screen/switching delay currently seen in-room and on the stream.

Recommended for reuse (Owner-Furnished Equipment): the two existing ceiling projectors and existing motorized screen, the existing dais tabletop monitors, the existing equipment rack frame, and the existing council dais and lectern microphones may be retained. City IT will continue to provide and configure all network switching for the AV system. Any reused equipment will be inspected and tested prior to final integration; the City does not guarantee reuse and final reuse decisions will be confirmed on site.

By consolidating audio, video, streaming, and control onto Q-SYS, the new system removes the multiple computers and workflows staff must manage today, while integrating cleanly with the reused display and rack infrastructure.

3 Desired Outcomes and Solution Features

- Unified Single-Platform Architecture
 - A single Q-SYS Core processor handles audio, video routing, streaming I/O, USB bridging, and control, eliminating the need for multiple computers and manual switching steps to run a meeting.
- Simplified, Centralized Control
 - A Q-SYS TSC-101-G3 touch screen at the staff command station provides one-touch preset operating modes with clearly labeled, intuitive controls.
- High-Quality Audio Capture and Reinforcement
 - New Shure gooseneck microphones at the dais and lectern, Q-SYS acoustic echo cancellation, feedback suppression, and new ceiling loudspeakers deliver clear, intelligible speech for in-room, remote, and livestream audiences, directly addressing current podium microphone quality issues.
- Dependable Livestreaming and Recording
 - Q-SYS network video encode/decode and a driverless USB bridge feed a single streaming/recording workflow with clear on-air indication, simple start/stop control, and local recording fallback if internet or platform connectivity is lost.
- Hybrid and Remote Participation

- AV-to-USB bridging presents room audio and camera video to common virtual meeting platforms so remote participants hear and are heard clearly, and remote audio/video is integrated into the livestream and recording.
- Multi-Camera Video Coverage
 - QSC PTZ cameras with recallable presets provide clear views of Council members and the public comment podium, with automated intelligent tracking available as an option.
- Presenter and Device Connectivity
 - Reliable options for presenters to connect City or personal devices, including a wired laptop input and optional wireless presentation, coordinated with City IT.
- Accessibility Support
 - The system supports captioning workflows and improved speech intelligibility to expand access for the public in the room, online, and participating remotely.
- Reuse of Existing Infrastructure
 - The design reuses the existing projectors, screen, dais monitors, and equipment rack to reduce cost, installation time, and disruption.
- Reliability and Fallback
 - Dual-network Core connectivity, simplified signal paths, and local recording provide reasonable fallback so meetings can continue if a component or connection fails.

4 Scope of Work

4.1 Council Chambers – Base System

Mechdyne will design, furnish, install, program, integrate, test, and commission a complete Q-SYS-based audiovisual system in the City Council Chambers as described below. All work includes cabling, mounting hardware, configuration, labeling, testing, and cleanup.

Video, Cameras, and Displays:

- Reuse the two existing ceiling-mounted projectors and the existing motorized projection screen for primary in-room display.
- Reuse the existing dais tabletop monitors for Council member viewing.
- Reuse the dais tabletop microphones for Council Member Audio Capture
- Provide one Extron DA6 HD 4K PLUS six-output 4K/60 HDMI distribution amplifier to feed the projectors and dais monitors.

- Provide two QSC NC-12x80 12x optical-zoom PTZ network cameras with ceiling mount brackets (PTZ-CMB1) for clear views of the Council dais and the public comment podium.
- Provide Three QSC Q-SYS NV-21-HU units set to encoder mode for
 - The in-rack PC (with USB Connection)
 - Lectern PC (with USB Connection)
 - Lectern HDMI/USB-C connections for a guest laptop connection
- Provide Five QSC Q-SYS NV-21-HU units set to decoder mode for
 - 2x Existing Projectors
 - HDMI feed distributed to existing Dais Monitors
 - Lectern Monitor
 - Control Desk Monitor, Keyboard, and Mouse to control in-room PC's

Audio:

- Provide one QSC Q-SYS Core 24f processor as the central DSP and system core, with acoustic echo cancellation, feedback suppression, and USB AV bridging.
- Provide Q-SYS mic/line peripherals: three QIO-ML4i (four-input) at the dais for existing microphones and one QIO-ML2x2 (two-input / two-output) device at the lectern for microphone connectivity.
- Mechdyne will reuse the 12 existing dais microphones.
- Provide two new Shure MX418/C 18" gooseneck microphones for the lectern/podium.
- Provide one QSC SPA2-200 two-channel ENERGY STAR amplifier and eight QSC AD-C6T-LPZB 6.5" two-way ceiling loudspeakers for even, intelligible in-room reinforcement.

Livestreaming, Recording, and Hybrid Participation:

- USB Connections on all of the Q-Sys NV-series encoders support AV bridging for livestreaming, recording, and conferencing functionality.
- Route remote-participant audio and video into the in-room system, livestream, and recording for true hybrid meetings compatible with commonly used virtual meeting platforms.
- In the event of internet or streaming-platform failure, the system will continue local recording so the meeting is captured and can be published afterward.

Control and Command Station:

- Provide one QSC Q-SYS TSC-101-G3 10.1" PoE touch screen controller with TSC-710t-G3 tabletop mount at the staff command station.

- Program intuitive preset operating modes that reduce the number of steps to operate a meeting.
- Provide staff a single point from which to monitor and control the meeting, audio levels, camera selection/presets, sources, and streaming/recording status.
- Provide a Q-Sys NV-21-HU Decoder that will provide an HDMI video output to display on an owner-furnished monitor and utilize an owner-furnished keyboard and mouse for controlling any of the in-room PC's.

Infrastructure, Rack, and Cabling:

- Reuse the existing equipment rack frame; provide Middle Atlantic rack accessories including basic power distribution, rack shelves, and thermal and cable management.
- Provide all required cabling and consumables, including Category 6E shielded plenum data cable (approximately 2,000 ft), 12 AWG plenum speaker cable (approximately 1,000 ft), and connectors/adapters.
- City IT will provide and configure all network switches for the AV equipment; Mechdyne will supply detailed network requirements (IP addressing, ports, VLAN/security considerations) for coordination.

4.2 Optional Packages

The following packages are offered as options and can be added to the base system. Each is described here for scope; pricing is provided separately.

- Option 1 – Intelligent Camera Tracking (QSC VisionSuite AI)
 - Adds a QSC VSA-100 VisionSuite AI accelerator with SLVS-AI-P perpetual license and SLVS-AI-3YR update/support license (plus associated cabling) to provide automated audience and presenter tracking and intelligent camera framing synchronized with the Q-SYS audio system, further reducing operator workload.
- Option 2 – New Laser Projectors
 - Replaces the reused projectors with two Sharp XP-P701U-W WUXGA 7,000-lumen laser projectors on Chief RPMAU universal mounts, reusing the existing pole and installed ceiling support structure (assuming the existing structure supports the new projectors) for brighter, longer-life, maintenance-free projection.

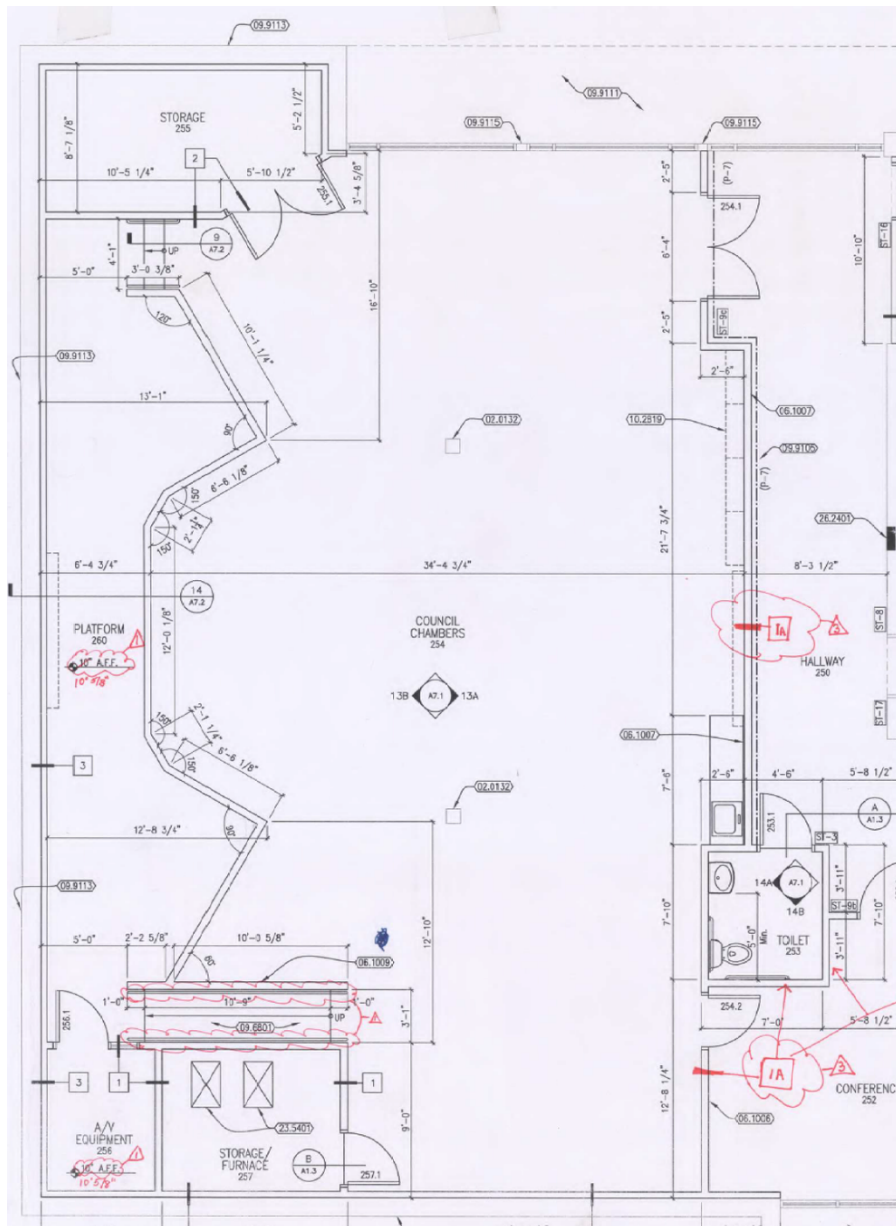
4.3 Alternate Bid – South Wall Conference Room

As requested in the RFP, Mechdyne will provide, as an alternate bid item, a conference-room-style audiovisual setup on the south wall of the Council Chambers to support smaller meetings,

staff meetings, virtual meetings, and presentations that do not require the full Council configuration. Mechdyne is proposing a 65-inch Samsung QB65C display with a Barco Clickshare Bar Pro all-in-one video conferencing bar. Barco Clickshare is the same wireless technology Mechdyne installed at the Marshalltown Public Library for wireless presentation and conferencing in the large divisible space, as well as the smaller conference rooms.

5 Plan View

A system connectivity drawing and room plan view will be developed and provided during the design phase following contract award and the confirming site visit. The detailed engineering package will include signal-flow diagrams, rack elevations, device locations, and the network requirements needed for City IT coordination and installation.



6 Assumptions

- All facilities work – including power outlets, conduit and cable pathways, backerboard/blocking, furniture modifications, and network connections – will be provided by others (the City).
- All Owner-Furnished Equipment (OFE) to be reused will be available and in place on the first day of installation. Delays with reused equipment could cause scheduling delays.

- All reused equipment (projectors, screen, dais monitors, rack, existing microphones) is assumed to be in good working order and “like-new” mounting condition. Mechdyne will visually inspect and test reused equipment and notify the City of any items that should be replaced. Mechdyne is not responsible for the condition of existing equipment except in the case of negligence.
- City IT will provide, configure, and maintain all network switches and network services for the AV system. Mechdyne will provide network requirements (IP addressing, ports, firewall/security, and firmware/update procedures); the quoted system assumes no network configuration issues. Network issues discovered during installation could result in a change order.
- The AV system may reside on a dedicated/closed VLAN as determined by City IT. The City will provide any credentials, user accounts, or administrative access required for control, streaming, and remote-support equipment.
- The City will provide full, unimpeded access to the Council Chambers and applicable spaces, and will coordinate installation scheduling around meetings to minimize disruption.
- The City will provide accurate floor-plan and existing-conditions information and will make its facilities staff available to consult on any ceiling, mounting, or cabling restrictions.
- The existing rack power distribution and building electrical service can provide suitable power for all specified equipment.
- The existing projectors and screen are capable of the required brightness and image size; if the new laser projectors option is not selected, image quality is limited by the condition and specification of the reused projectors.
- The City will provide an on-site waste/packaging disposal container.
- Prior to project start, Mechdyne will provide an AV Engineer, a Mechanical Engineer, and an Application Engineer to perform a thorough site visit to confirm design constraints, connectivity, and system operation with City staff.
- Mechdyne will provide an AV Engineer to design and provide system connectivity drawings and the detailed engineering data necessary for installation, delivered during the design phase.
- Mechdyne will provide a Mechanical Engineer to specify mechanical/mounting components and provide facility documentation as applicable.
- Mechdyne will provide a dedicated Project Manager as the single point of contact, responsible for deliverables, schedule, documentation, and regular progress updates with the City.

- Mechdyne will stage applicable systems prior to installation to reduce time on site, arrange shipment of all equipment to the City site, run required cabling, and connect all systems as designed.
- During installation, Mechdyne will complete professional-quality projector alignment and image adjustment, and professional-quality audio tuning, DSP programming using appropriately trained staff.
- Prior to project sign-off, Mechdyne will test all functionality, train City staff on system controls and operation, and record all installed equipment serial numbers. Final as-built drawings and complete documentation (equipment list, control instructions, user/quick-start guide, and warranty and support information) will be delivered.
- The system will not be considered complete until final acceptance testing has been conducted and approved by the City; Mechdyne will correct any deficiencies identified during acceptance testing.
- Mechdyne will not change agreed functionality or connectivity during installation unless the City approves a change order.
- Decommissioned equipment removed from service will be handed to the City for repurposing or disposal unless otherwise directed. Unused abandoned cabling will be removed to the extent physically practical.

City of Marshalltown Representative (please print)

City of Marshalltown Representative (signature)

Mechdyne Project Manager (please print)

Mechdyne Project Manager (signature)



REQUEST FOR PROPOSAL

City Council Chambers Audiovisual System

Responses Due

Wednesday, July 22nd, 10 AM

To the following:

City of Marshalltown
Attn: City Clerk
24 N. Center St.
Marshalltown, IA 50158

1. Project Overview

The City of Marshalltown (hereinafter referred to as “the City”) is seeking proposals from qualified audiovisual vendors to design, furnish, install, configure, test, train staff on, and support a complete audiovisual system for the City Council Chambers.

The system must support City Council meetings, board and commission meetings, public presentations, hybrid participation, livestreaming, recording, and general public meeting use. The completed system should be reliable, easy to operate, accessible, and appropriate for official public meetings.

The City’s goal is to replace or substantially improve the current audiovisual system with a simplified, integrated, and user-friendly system that reduces operational complexity, improves audio and video quality, supports hybrid meeting participation, and provides dependable livestreaming and recording capabilities.

2. Existing System Summary

The City currently operates an audiovisual system in the Council Chambers that requires multiple computers and several separate steps to conduct, livestream, and record meetings. The current system has become operationally cumbersome and does not consistently provide the level of audio clarity, video quality, reliability, or ease of use desired for official public meetings.

Current challenges include, but are not limited to:

- Multiple computers are required to operate the system.
- Staff must manage several pieces of equipment and workflows during meetings.
- Audio quality, including podium microphone quality, needs improvement.
- The system should better support hybrid participation, livestreaming, and recording.
- Meeting controls should be simplified and centralized.
- The system should provide more reliable fallback options in the event of equipment or internet failure.
- Staff need a clear command station from which the meeting can be monitored and controlled.

The selected vendor shall review the existing system, identify equipment that may be reused if appropriate, and recommend a complete solution that meets the City's performance requirements.

3. Existing Hardware Inventory

Current hardware includes, but is not limited to:

Parts list:

AMX NX-3200 NetLinx NX Integrated Controller (FG2106-03)

AMX 10.1" Modero G5 Tabletop Touch Panel (FG5969-47)

AMX PR01-0808 PR01-0808 PERP (FG1020-800)

4K HDMI TO USB CAPTURE 4K HDMI CTRLR TO USB CAPTURE (AMX-UVC1-4K)

Signal Processing:

BSS BLU800M & BSS BLU320M Signal Processors (BSSBLU800M-US & BSSBLU320M-US

w/ 3x BSS BLU 4CHNL AEC INPUT PERP BSS BLU 4CHNL AEC INPUT CARD (BSSBLUAECIN-M)

1x BSS BLU 4CHNL MIC/LIN INPUT PERP BSS BLU 4CHNL MIC/LIN INPUT (BSSBLUCARDIN-M)

1x BSS BLU 4CHNL LIN OUTPUT PERP BSS BLU 4CHNL LIN OUTPUT CARD (BSSBLUCARDOUT-M)

3x BSS BLU-USB BSS BLU-USB 8X8 USBPERP TO BLU LINK (BSSBLU-USB-M-US)

Amp & Speakers:

JBL Commercial CSA2120 Amplifier - 240 W RMS - 2 Channel (NCSA2120R-U-US)

NCST2120-X 2-CHANNEL ACCS TRANSFORMER KIT FOR CSA2120 Transf (NCST2120-X)

4x JBL Professional /T 2-way Ceiling Mountable Speak (CONTROL 16C/T-BK)

Mics:

11x AKG CGN321 STS Wired Condenser Microphone (2966H00010)

1x AKG High-performance gooseneck microphone DAM set (2765H00500)

Video

2x PTZOptics Video Conferencing Camera - 2.1 Me (PT20X-SDI-GY-G2)
AMX Precis 4x1+1 4K60 HDMI Windowing Processor (AMX-PR-WP-412)

Audio setup:

Input is taken from the 11x council dais mics, the podium mic, a mini-PC (NUC) mounted to the back of the monitor on the podium and another PC used for GoToMeeting attendees and fed into the BSS BLU Signal processors. Output from the BSS BLU is sent to the AMX Amplifier for in-room audio, back to the GoToMeeting PC for attendee audio as well as to a streaming PC for use with OBS Studio.

Video setup:

Input is taken from a computer at the podium & 2x ceiling mounted cameras, one facing the council dais, and the other facing the podium for speakers and run through the AMX HDMI Window Processor. Inputs are manually switched via the tabletop touch panel that is connected via ethernet in the back of the council chambers. The input switching has a delay and shows a blue screen on the output in the room and stream to YouTube.

Output from the AMX HDMI Window Processor is sent to 2x projectors in the room as well as 5x monitors on the council dais, that are connected via HDMI splitters. The output is also sent to a PC that captures the video stream and audio output from the BSS BLU signal processors using OBS studio. That is recorded locally as well as streamed to YouTube and the City Web Site.

Photos of the current system are attached to this RFP.

The vendor shall evaluate the existing hardware and identify:

- Equipment recommended for replacement
- Equipment that may be reused
- Equipment that may be retained only as backup
- Equipment that is obsolete or incompatible with the proposed system
- Any infrastructure limitations that may affect the proposed design

The City does not guarantee that existing equipment will be suitable for reuse. Any proposed reuse of existing equipment must be clearly identified in the vendor's proposal.

4. General System Requirements

The audiovisual system shall be a turnkey solution. The vendor shall be responsible for all design, equipment, installation, programming, integration, testing, training, documentation, warranty service, and support necessary to provide a fully operational system.

The system shall be designed for public meeting environments and shall support:

- City Council meetings
- Board and commission meetings

- Public presentations
- Public comment
- Hybrid meetings
- Remote participation
- Livestreaming
- Meeting recording
- Staff-controlled operation
- Use by presenters with City or personal devices
- Accessibility-related functionality, including support for captioning

The system shall be intuitive enough for trained City staff to operate without requiring specialized technical expertise during each meeting.

5. Audio Performance Requirements

The system shall provide clear, intelligible, and reliable speech reinforcement and capture throughout the Council Chambers.

At a minimum, the audio system shall clearly capture and reproduce speech from:

- Council members
- Mayor or presiding officer
- City staff
- Presenters
- Public commenters at the podium
- Remote participants
- Any designated staff or operator station

The podium microphone must provide clear and understandable audio without crackling, distortion, excessive background noise, or frequent signal loss.

The system must have the ability to capture audio from a PC at the podium.

The system shall be designed to minimize feedback, echo, hum, distortion, and uneven sound levels. Audio should be suitable for both in-room listening and remote/livestream audiences.

The vendor shall recommend appropriate microphones, speakers, processors, mixers, and related equipment necessary to provide reliable audio performance for official meetings.

6. Video and Display Performance Requirements

The system shall include cameras, displays, switching, and related equipment sufficient to allow the public, Council, staff, remote participants, and online viewers to clearly see speakers, presentations, meeting materials, and other relevant visual content.

The video system shall support:

- Clear camera views of Council members and staff
- Clear camera views of the public comment podium
- Clear display of presentations and meeting materials
- Viewing by in-room attendees
- Viewing by remote participants
- Viewing by livestream audiences
- Recording of meeting video and presentation content

Camera placement, switching, presets, or automation should be designed to support typical public meeting workflows. The City is open to vendor recommendations regarding fixed cameras, PTZ cameras, automated camera tracking, preset camera views, or other solutions that improve usability and meeting quality.

Displays shall be located and sized to allow Council, staff, presenters, and the public to reasonably view meeting content.

7. Livestreaming and Recording Requirements

The system shall support livestreaming and recording of public meetings using a simple and reliable workflow.

Staff shall be able to start, stop, and confirm livestreaming and recording from a centralized control interface. The system should clearly indicate when a meeting is being recorded and/or livestreamed.

The system shall support the ability to start and stop streaming within the same recording workflow when feasible, or otherwise provide a simple and reliable method for managing meeting recordings and livestreams.

The vendor shall identify the proposed livestreaming and recording workflow, including:

- How meetings are started
- How recordings are confirmed
- How streaming status is displayed
- How recordings are saved
- How files are accessed or transferred
- How staff can verify that a meeting was successfully captured
- What happens in the event of internet failure or streaming platform failure

8. Hybrid and Virtual Meeting Requirements

The system shall support hybrid meetings and virtual participation. Remote participants shall be able to hear in-room participants clearly, and in-room participants shall be able to hear remote participants clearly.

The system shall support people calling in or otherwise connecting remotely to participate in meetings. The system should be compatible with commonly used virtual

meeting platforms and should allow the City to conduct meetings with both in-person and remote participants.

The system shall provide a practical method for integrating remote participant audio and video into the meeting, livestream, and recording.

9. Control System and User Interface

The system shall include a simple centralized control interface for City staff.

The control system should allow staff to operate the meeting from a single point, preferably from a designated command station. The command station should allow staff to see relevant screens, monitor meeting operation, and control the audiovisual system.

The control interface shall include preset operating modes, such as:

- Council Meeting
- Hybrid Meeting
- Presentation
- Audio Only / Simple Meeting
- System Off

The interface should be intuitive, clearly labeled, and designed to reduce the number of steps required to operate a meeting.

The City's preference is to simplify the system and reduce the number of computers needed to run meetings. The proposed system should reduce reliance on multiple separate computers and manual workarounds.

10. Presenter and Device Connectivity

The system shall support a presenter's need to connect their own device.

The vendor shall provide a reliable method for presenters to connect laptops or other devices for presentations. The system may include wired and/or wireless presentation options, provided the solution is secure, reliable, and coordinated with City IT.

Presenter connectivity shall be easy to use and shall allow presentation content to be displayed in the room and, when appropriate, included in the livestream and recording.

11. Accessibility Requirements

The system shall include or support accessibility-related features appropriate for public meetings.

At a minimum, the system shall support captioning workflows or integration with captioning services or platforms. The vendor shall identify how the proposed system supports accessibility, including any options for captioning, assisted listening, improved speech intelligibility, or other accessibility features.

The system shall be designed to improve access for members of the public attending in person, watching online, or participating remotely.

12. Network and IT Coordination

Any network-connected audiovisual equipment must be coordinated with City IT.

The vendor shall identify all equipment requiring network access, including equipment used for control, livestreaming, recording, remote participation, wireless presentation, firmware updates, or remote support.

The vendor shall provide City IT with information regarding:

- Network requirements
- IP addressing needs
- Firewall or port requirements
- Security considerations
- User accounts or administrative access
- Remote access requirements, if any
- Software, licensing, or subscription requirements
- Firmware and update procedures

The City reserves the right to reject equipment or configurations that do not meet City IT security, reliability, or support requirements.

13. Reliability and Backup Requirements

The system shall be reliable enough for official public meetings.

The vendor shall design the system with reasonable backup or fallback options in the event of equipment or connectivity failure. The proposal shall describe how the system will continue to function, or how staff can reasonably respond if any of the system components fail.

14. Installation Requirements

The vendor shall be responsible for complete installation of the audiovisual system.

Installation shall include all necessary equipment, cabling, mounting hardware, programming, configuration, labeling, testing, and cleanup. Work shall be performed in a professional manner appropriate for a public meeting space.

The vendor shall coordinate installation scheduling with the City to minimize disruption to Council meetings, board and commission meetings, and other scheduled uses of the Council Chambers.

The vendor shall identify any required City responsibilities, including electrical work, network connections, furniture modifications, conduit, wall penetrations, or other related work.

15. Training, Documentation, and Support

The vendor shall provide staff training before final acceptance of the system.

The vendor shall provide complete system documentation, including as-built drawings, an equipment list, control system instructions, user guide or quick-start guide, warranty information, and support contact information.

The vendor shall also identify ongoing support options, including warranty support, service agreements, remote support availability, and response times.

16. Testing and Final Acceptance

The system shall not be considered complete until final acceptance testing has been conducted and approved by the City.

Acceptance testing shall include demonstration of all major system functions.

The vendor shall correct any deficiencies identified during acceptance testing before the project is considered complete.

17. Vendor Site Visit

The City will schedule a time for interested vendors to visit the Council Chambers, review the existing system, inspect the room layout, and ask questions.

Attendance at the site visit is strongly encouraged. Vendors shall be responsible for verifying existing conditions and identifying any issues that may affect their proposal.

18. Alternate Bid: South Wall Conference Room Setup

As an alternate bid item, vendors shall provide pricing and a recommended approach for installing a conference room-style audiovisual setup on the south wall of the Council Chambers.

The alternate setup should support smaller meetings, staff meetings, virtual meetings, presentations, and other uses that may not require the full Council Chambers meeting configuration.

19. Submission Requirements

In order to facilitate the analysis of responses to this RFP, vendors are required to prepare their proposals in accordance with the instructions outlined in this section. Proposals that deviate from these instructions may be considered non-responsive and may be disqualified at the discretion of the City. All costs incurred for the preparation of this proposal will be the responsibility of the vendor.

The vendor shall submit three (3) original proposals and one (1) electronic copy. Vendor proposals should include the following:

- Description of proposed system design
- Explanation of how the proposed system meets each performance requirement

- Equipment list with manufacturer and model numbers
- Identification of any reused existing equipment
- System diagrams or conceptual layout
- Description of control interface and preset modes
- Description of livestreaming and recording workflow
- Description of hybrid meeting workflow
- Description of accessibility features
- Description of backup or fallback options
- Network and IT requirements
- Installation approach and schedule
- Training plan
- Documentation to be provided
- Warranty information
- Ongoing support options
- Base bid cost
- Alternate bid cost for south wall conference room setup
- Any exclusions, assumptions, or required City responsibilities
- At least two references from former clients for previously installed systems.

20. Evaluation Considerations

In general, the proposals will be evaluated on the following factors:

- Qualifications and experience
- Responsiveness to the performance specification
- Quality and reliability of proposed equipment
- Simplicity of operation
- Audio and video performance
- Livestreaming and recording workflow
- Hybrid meeting functionality
- Accessibility features
- Network and IT compatibility
- Backup and fallback options
- Vendor qualifications and experience
- Training, documentation, warranty, and support
- Total project cost
- Long-term maintainability
- Ability to complete the project within the City's desired schedule

The City reserves the right to select the proposal that best meets the City's needs, which may not be the lowest-cost proposal.

21. RFP Timeline (subject to change)

Name of Proposal	City Council Chambers Audiovisual System
Date of Issuance	Friday, June 19 th
Onsite tour of Current AV System	Monday, June 29 th , 10:00 AM
Deadline for Questions	Tuesday, July 7 th , 5:00 PM
City's Response to Questions	Friday, July 10 th
Deadline for Proposal	Wednesday, July 22 nd , 10AM
Evaluation of Proposals	Week of July 27 th
Recommendation to Council and Award	August 10 th
Contact Person, Title	Carol A Webb, City Administrator 24 N. Center St., Marshalltown, IA 50158 cwebb@marshalltown-ia.gov, 641-754-5799

Any proposes received after the due date will be rejected and not considered. A public opening of proposals will not be held.

22. General Terms and Conditions

- **Contract:** Any award of a contract resulting from this RFP will be made only by written authorization from City of Marshalltown upon approval by the City of Marshalltown City Council. The contract between City of Marshalltown and the Vendor shall consist of (1) the Request for Proposal (RFP) and any amendments thereto and (2) the proposal submitted by the Vendor in response to the RFP. In the event of a conflict in language between these two documents, the provisions and requirements set forth and/or referenced in the RFP shall govern. The City also reserves the right to clarify any contractual relationship in writing with the concurrence of the Vendor, and such written clarification shall govern in case of conflict with the applicable requirements stated in the RFP or the Vendor's proposal. In all other matters not affected by the written clarifications, if any, the RFP shall govern. The City reserves the right to amend the contract to include any Federal requirements specifically associated with the funding allocation and program compliance.
- **Compliance with Laws:** In connection with the furnishing of supplies or performance of work under the contract, the Vendor agrees to comply with the Fair Labor Standard Act, Equal Opportunity Employment Act, and all other applicable Federal and State laws, regulations, and executive orders to the extent that the same may be applicable, and further agrees to insert the foregoing provision in all subcontracts awarded hereunder.

- Incurred Expenses: This RFP does not commit the City to award a contract, nor shall the City be responsible for any cost or expense that may be incurred by the Vendor in preparing and submitting the proposal called for in this RFP, or any cost or expense incurred by the Vendor prior to the execution of a contract agreement.
- Insurance: The successful bidder must provide the City a certificate of insurance with the following coverage limits and maintain said coverages at all times during the term of a Contract. The City shall be names as an additional insured under the liability policy required above.
 - Comprehensive General Liability \$1,000,000 per occurrence/\$2,000,000 aggregate
 - Worker's Compensation as required by law
 - Professional Liability for Errors and Omissions \$2,000,000
- Independent Contractor: Nothing contained in this RFP is intended or should be construed as creating the relationship of co-partners or joint ventures within the City. The Contractor shall remain an independent contractor, and all employees of the Contractor or its subcontractors shall remain the employees of the Contractor or subcontractor and shall not become the employees of the City.
- Nondiscrimination: All Contractors agree that during the life of the contract, the Contractor shall not discriminate against any employee or applicant for employment because of race, color, creed, national origin, sex, marital status, disability, sexual orientation, age, religion, or status with regard to public assistance, and shall intend a similar provision in all subcontracts entered into for the performance thereof.













**MARSHALLTOWN
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Mike Ladehoff, Mayor
Carol Webb, City Administrator
24 North Center Street
Marshalltown, IA 50158
PH 641.754.5701 • FX 641.754.5717

To: Mayor and City Council
From: Sadie Weekley, Captain
Meeting Date: September 14, 2026
Re: Resolution Approving Interlocal Grant Agreement for the Iowa/Byrne-Justice Assistance Grant Program (JAG) \$17,605.00 Split 50% with Marshall County, and Approval of Memorandum of Understanding to Share Grant Funds with Marshall County

Strategic Plan Objective:

Continually improve and sustain the City's infrastructure, organization, and services. Partner with citizen's, for-profit, non-profit, and others to improve quality of life.

Recommended:

Staff recommends Council accept the FY26 Byrne JAG award and authorize the Chief of Police to submit all necessary application documents to secure this federal funding. Additionally, staff recommends the Council authorize the Chief of Police to enter into a Memorandum of Understanding to share these grant funds with Marshall County.

Budget Impact:

The Police Department's share of this grant award is \$8,802.50. The department will utilize forfeiture dollars or general fund dollars to cover any project costs about the \$8,802.50 grant award.

Description/Background:

On August 25, 2026 the police department received email notification from the federal government notifying us that the City has been allocated \$17,605.00 in grant funding from the Edward Byrne Memorial Justice Assistance Grant (JAG) Program. JAG legislation requires cities and counties to partner and share funds allocated as part of this federal program. These funds are traditionally split evenly with Marshall County. Consequently, the City of Marshalltown's share is \$8,802.50. These funds can be used for equipment or programming expenditures for FY26. These funds cannot supplant funding already in place for law enforcement programming or equipment purchase plans. While the grant award has already been announced, there is still an application and review process. As part of this process, we are required to approve a budget and spending plan via city council action.

Attachments:

1. 2026-09-14_2026-161_Resolution Accepting JAG Award
2. 2026 MOU

**RESOLUTION APPROVING INTERLOCAL GRANT AGREEMENT FOR THE
IOWA/BYRNE-JUSTICE ASSISTANCE GRANT PROGRAM (JAG) \$17,605.00 SPLIT 50%
WITH MARSHALL COUNTY, AND APPROVAL OF MEMORANDUM OF
UNDERSTANDING TO SHARE GRANT FUNDS WITH MARSHALL COUNTY**

WHEREAS, the City of Marshalltown, Iowa has negotiated an Agreement with the STATE OF IOWA to provide a grant award of \$17,605.00, through the Edward Byrne Memorial Justice Assistance Grant (JAG) Program; and

WHEREAS, the City Council of the City of Marshalltown finds that this Agreement is in the best interest of the Council; and

WHEREAS, a public meeting was held, notifying the public of the grant award and proposed use of federal funds; and

WHEREAS, said Agreement should be approved and ratified by the Council of the City of Marshalltown, Iowa.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF MARSHALLTOWN, IOWA:

Section 1. That the attached Agreement relating to the Edward Byrne Memorial Justice Assistance Grant (JAG) Program for FY26 is hereby approved and ratified with the understanding it is shared equally with Marshall County and used to assist with law enforcement programming or equipment purchases.

Section 2. The council authorizes the Police Chief for the City of Marshalltown to enter into a Memorandum of Understanding with Marshall County to share the grant funds.

Section 3. That the Police Chief for the City of Marshalltown is hereby authorized and directed to execute said Agreements and submit all necessary documents to secure this federal funding on behalf of the City of Marshalltown.

Section 4. This Agreement and this resolution shall be in full force and effect from and after its passage and signature as by law provided.

Passed this 14th day of September 2026, and signed this _____ day of September 2026.

CITY OF MARSHALLTOWN, IOWA

Mike Ladehoff, Mayor

ATTEST:

Alicia Hunter, City Clerk

THE STATE OF IOWA

COUNTY OF MARSHALL

**INTERLOCAL AGREEMENT
BETWEEN THE CITY OF MARSHALLTOWN, IOWA AND COUNTY OF MARSHALL, IOWA**

2026 BYRNE JUSTICE ASSISTANCE GRANT (JAG) PROGRAM AWARD

This Agreement is made and entered into this day of September 14, 2026, by and between The COUNTY of Marshall, acting by and through its governing body, the Board of Supervisors, hereinafter referred to as COUNTY, and the CITY of MARSHALLTOWN, acting by and through its governing body, the City Council, hereinafter referred to as CITY, both of MARSHALL County, State of IOWA, witnesseth:

WHEREAS, this Agreement is made under the authority of Section 28E, Iowa State Code: and

WHEREAS, each governing body, in performing governmental functions or in paying for the performance of governmental functions hereunder, shall make that performance or those payments from current revenues legally available to that party: and

WHEREAS, each governing body finds that the performance of this Agreement is in the best interests of both parties, that the undertaking will benefit the public, and that the division of costs fairly compensates the performing party for the services or functions under this agreement: and

WHEREAS, with a total grant award of \$17,605, the CITY agrees to provide the COUNTY \$8,802.50 from the JAG award for the purchasing of equipment in support of law enforcement in Marshall County and the City of Marshalltown agrees to retain \$8,802.50 for the purchasing of equipment in support of law enforcement services in the City of Marshalltown: and

WHEREAS, the CITY and COUNTY believe it to be in their best interests to reallocate the JAG funds.

NOW THEREFORE, the COUNTY and CITY agree as follows:

Section 1.

CITY agrees to pay COUNTY a total of \$8,802.50 of JAG funds.

Section 2.

COUNTY agrees to use \$8,802.50 for the 2026 JAG Grant Program until the programs end date.

Section 3.

Nothing in the performance of this Agreement shall impose any liability for claims against COUNTY other than claims for which liability may be imposed by the Tort Claims Act.

Section 4.

Nothing in the performance of this Agreement shall impose any liability for claims against CITY other than claims for which liability may be imposed by the Tort Claims Act.

Section 5.

Each party to this agreement will be responsible for its own actions in providing services under this agreement and shall not be liable for any civil liability that may arise from the furnishing of the services by the other party.

Section 6.

The parties to this Agreement do not intend for any third party to obtain a right by virtue of this Agreement.

Section 7.

By entering into this Agreement, the parties do not intend to create any obligations express or implied other than those set out herein; further, this Agreement shall not create any rights in any party not a signatory hereto.

CITY OF MARSHALLTOWN, IOWA

COUNTY OF MARSHALL, IOWA

Chief of Police
Christopher Jones

Marshall County Sheriff
Joel Phillips

Mayor
Michael Ladehoff

Chairman Board of Supervisors
Jarret Heil



**MARSHALLTOWN
MORE THAN EVER**

**Mike Ladehoff, Mayor
Carol Webb, City Administrator
24 North Center Street
Marshalltown, IA 50158
PH 641.754.5701 • FX 641.754.5717**

To: Mayor and City Council
From: Heather Thomas, Public Works Director, Kevin Pigors, Transit Director
Meeting Date: September 14, 2026
Re: Resolution Approving the 2026 Update of the FTA Title VI Program for Marshalltown Municipal Transit (MMT)

Strategic Plan Objective:

None of the Top or High Priority Goals identified in the 2025 Strategic Plan are directly related to this item. During the 2026-2028 Goal Setting Report, Strategy 3 noted to continually improve and sustain the City's infrastructure, organization, and services. Title VI is a necessary and required aspect of the services we provide.

Recommended:

Approval of the proposed 2026 updates to Marshalltown Municipal Transit's FTA Title VI Program.

Budget Impact:

None.

Description/Background:

Iowa DOT periodically reviews Title VI Programs for small urban and regional transit systems, typically every three years. Iowa DOT reviewed Marshalltown's plan in 2023, and we updated our policies with a revision in 2024. In reviewing our current FTA Title VI program, we are proposing additional updates, including:

- a. General formatting of the program.
- b. Updated to reflect the current requested information to be included in the program.
The program incorporates requested information throughout the program in lieu of solely through Appendices and Attachments, as done in previous years' programs.
- c. Updated Limited English Proficiency (LEP) date. The 1,000 persons threshold is still met; therefore, we will provide key MMT documents in Spanish, to provide assistance to the estimated 3,463 LEP persons in our service area where Spanish is their primary language. There are an estimated total of 4,679 LEP persons in our service area.
- d. Updated System-wide Service Standards in relation to our fleet and routes.
- e. Updated System-wide Service Amenities in relation to access to ticket/passes and our fleet.

- f. Updated System-wide Vehicle Assignment Policy in relation to our fleet.

Following council approval, the declarations will be signed; the city council approval resolution will be added to the program; and these updates will be submitted to Iowa DOT, updated on our website, and the new Notices will be posted.

Attachments:

1. Resolution Adopting MMT Title VI Updates
2. 2026 FTA Title VI Program

**RESOLUTION APPROVING THE 2026 UPDATE OF THE FTA TITLE VI PROGRAM
FOR MARSHALLTOWN MUNICIPAL TRANSIT (MMT)**

WHEREAS, the City Council of Marshalltown, Iowa, adopted the 2024 FTA Title VI program for Marshalltown Municipal Transit (Resolution 2024-177) on the 12th day of August 2024; and

WHEREAS, there is herewith submitted to the City Council of Marshalltown, Iowa, a proposed 2026 Update to the 2024 FTA Title VI program for Marshalltown Municipal Transit; and

WHEREAS, this program and associated policies shall replace in their entirety those adopted in 2024, as part of Resolution 2024-177.

WHEREAS, the City Council finds this program and policies to be within the best interest of the City.

NOW, THEREFORE, BE IT RESOLVED BY THE COUNCIL OF THE CITY OF MARSHALLTOWN, IOWA, AS FOLLOWS:

Section 1. That the updated Title VI Program for Marshalltown Municipal Transit is hereby adopted and is effective September 15, 2026.

Passed this 14th day of September 2026 and signed this _____ day of September 2026.

CITY OF MARSHALLTOWN, IOWA

Mike Ladehoff, Mayor

ATTEST:

Alicia Hunter, CMC, City Clerk



**MARSHALLTOWN
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FTA Title VI Program

Date: September 2026

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Subrecipient Profile

Subrecipient: Marshalltown Municipal Transit

Administrative Head: Kevin Pigors

Subrecipient Title VI Coordinator: Heather Thomas

Address: 905 East Main Street

City/State/Zip Code: Marshalltown, Iowa 50158

Phone: 641-754-5719

Email: hthomas@marshalltown-ia.gov

Website: www.marshalltown-ia.gov

Has the subrecipient signed and submitted its Title VI Assurances? Yes

General Requirements

- ✓ Attach a copy of Title VI notice to the public. The Title VI notice should include:
 - A statement that the agency operates programs without regard to race, color, or national origin
 - A description of the procedures that members of the public should follow in order to request additional information on the Title VI obligations.
 - A description of the procedures that members of the public shall follow in order to file a Title VI discrimination complaint against the recipient.
- ✓ Include a list of the locations where the notice is posted: **All buses, Public Works & City Hall vestibules, City's website**
- ✓ Attach a copy of the instructions to the public regarding how to file a Title VI discrimination complaint, including a copy of the complaint form.
- ✓ Provide the link to the transit agency website where Title VI complaint procedure and the complaint form are posted. **www.marshalltown-ia.gov/381/Policies-Application-Forms**
- ✓ List and describe all public transportation-related Title VI investigations, complaints or lawsuits filed in the last three years. Please only include only those that pertain to allegations of discrimination on the basis of race, color, and/or national origin.³

Title VI Complaints, Investigations, and Lawsuits

Investigations	Date Filed	Summary	Status	Actions Taken
0				
0				
Complaints	Date Filed	Summary	Status	Actions Taken
0				
0				
Lawsuits	Date Filed	Summary	Status	Actions Taken
0				
0				

- ✓ Attach a public participation plan that includes an outreach plan to engage minority and limited English proficient populations. Include a summary of outreach efforts made in the last three years. **Public events such as Healthy Family Fair at the Library**
- ✓ Attach a copy of the plan for providing language assistance to persons with limited English proficiency, based on the DOT LEP Guidance.
<https://www.transportation.gov/civil-rights/civil-rights-awareness-enforcement/dots-lep-guidance>
 - What steps has the agency taken to ensure meaningful access to the benefits services, and other important components of its programs and services to persons with limited English proficiency?
- ✓ List all non-elected committees and councils, the membership of which is selected by the agency:
- ✓ Describe the process the agency uses to encourage the participation of minorities on such committees:

Racial/Ethnic Breakdown of the Non-Elected Committees and Councils:

Group	Number
Male	N/A
Female	N/A
White	N/A
Black or African American	N/A
American Indian or Alaskan Native	N/A
Asian	N/A
Native Hawaiian or other Pacific Islander	N/A
Other	N/A

- ✓ If the transit agency has subcontractors, describe the efforts made to ensure subcontractors are complying with Title VI. Include a schedule of Title VI Program submissions from that subcontractor. **Periodic compliance reviews.**
- ✓ If the transit agency has constructed a facility, such as a vehicle storage facility, maintenance facility, operation center, etc., include a copy of the Title VI equity analysis conducted during the planning stage with regard to the location of the facility to ensure the location is selected without regard to race, color, or national origin. **N/A**
- ✓ Attach a copy of board meeting minutes, resolution, or other documentation showing the board of directors or appropriate governing entity has reviewed and approved the Title VI Program.

Requirements for Fixed Route Transit Providers

- ✓ System-wide service standards for each mode of service provided, whether existing or new. These standards and policies must address how service is distributed across the transit system, and must ensure that the manner of the distribution affords users access to these assets.
 - Vehicle load -Can be expressed as the ratio of passengers to the total number of seats on a vehicle. A vehicle load standard is generally expressed in terms of peak and off-peak times. The standard may be different for each mode.
 - Vehicle headway - The amount of time between two vehicles traveling in the same direction on a given line or combination of lines. A shorter headway corresponds to more frequent service. Vehicle headways are measured in minutes. Vehicle headway is one component of the amount of travel time expended by a passenger to reach his/her destination. A vehicle headway standard is generally expressed for peak and off-peak service as an increment of time. Transit providers may set different vehicle headway standards for different modes of transit service.
 - On-time performance -A measure of runs completed as scheduled. Define what is considered on-time. On-time performance can be measured against route origins and destinations only, or against origins and destinations as well as specified time points along the route.
 - Service availability - A general measure of the distribution of routes within a transit provider's service area.
- ✓ System-wide service policies ensure service design and operations practices do not result in discrimination on the basis of race, color, or national origin.
 - Distribution of transit amenities for each mode - Transit amenities refer to items of comfort, convenience, and safety that are available to the general riding public. Fixed route transit providers must set a policy to ensure equitable distribution of transit amenities across the system.
 - Seating

- Bus shelters
 - Information
 - Escalators
 - Elevators
 - Waste receptacles
- Vehicle assignments for each mode - Refers to the process by which transit vehicles are placed into service in depots and on routes throughout the transit provider's system. Policies for vehicle assignment may be based on the age of the vehicle, where age would be a proxy for condition.

Attachments

Notice of Rights Under Title VI and Assurance of Nondiscrimination

As a landmark piece of legislation, the Civil Rights Act of 1964 outlawed major forms of discrimination. Marshalltown Municipal Transit uses the Civil Rights Act as a basis to enforce a strict nondiscrimination policy.

Marshalltown Municipal Transit operates its programs and services without regard to race, age, disability (physical or cognitive), religion, creed, color, gender, sexual orientation, marital status, national origin, veteran status or any other basis in accordance with Title VI of the Civil Rights Act.

For more information on Marshalltown Municipal Transit's civil rights program and the procedures to file a complaint, contact MMT at 641-754-5719; email Transit@marshalltown-ia.gov; or visit www.marshalltown-ia.gov.

If a person believes that he or she has been excluded from participation in, denied the benefits of, or subjected to discrimination, they should file a written complaint with Marshalltown Municipal Transit's Transportation Administrator:

Transit Administrator
905 East Main Street
Marshalltown, IA 50158

A complaint must be filed within 180 days after the date of the alleged discrimination.

All complaints will be investigated promptly. Reasonable measures will be undertaken to preserve any information that is confidential. At a minimum, the inquiry will identify and review all relevant documents, practices and procedures, and identify and interview persons with knowledge of the civil rights violation. A written statement of findings and proposed remedies will be provided to the complainant by the transit administrator within thirty business days of receipt of the complaint.

A complainant may file a complaint directly with the Federal Transit Administration by filing a complaint with the Office of Civil Rights:

Title VI Program Coordinator
East Building, 5th Floor-TCR
1200 New Jersey Ave., SE
Washington, DC 20590

If information is needed in another language, contact 641-754-5719

Si necesita información en otro idioma, llame al 641-754-5719

Aviso De Derechos Bajo El Título VI Y

Garantía De No Discriminación

Como pieza legislativa histórica, la Ley de Derechos Civiles de 1964 prohibió las principales formas de discriminación. El Tránsito Municipal de Marshalltown utiliza la Ley de Derechos Civiles como base para hacer cumplir una estricta política de no discriminación.

El Tránsito Municipal de Marshalltown opera sus programas y servicios sin tener en cuenta la raza, la edad, la discapacidad (física o cognitiva), la religión, el credo, el color, el género, la orientación sexual, el estado civil, el origen nacional, la condición de veterano o cualquier otra base de acuerdo con el Título VI de la Ley de Derechos Civiles.

Para obtener más información sobre el programa de derechos civiles de El Tránsito Municipal de Marshalltown y los procedimientos para presentar una queja, comuníquese con MMT al 641-754-5719; envíe un correo electrónico a Transit@marshalltown-ia.gov; o visite www.marshalltown-ia.gov.

Si una persona cree que ha sido excluida de participar, se le han negado los beneficios o ha sido objeto de discriminación, debe presentar una queja por escrito ante el Administrador de Transporte de El Tránsito Municipal de Marshalltown:

Transit Administrator
905 East Main Street
Marshalltown, IA 50158

La queja debe presentarse dentro de los 180 días posteriores a la fecha de la presunta discriminación.

Todas las quejas se investigarán de inmediato. Se tomarán medidas razonables para preservar cualquier información que sea confidencial. Como mínimo, la investigación identificará y revisará todos los documentos, prácticas y procedimientos relevantes, e identificará y entrevistará a las personas con conocimiento de la violación de los derechos civiles. El administrador de tránsito proporcionará al denunciante una declaración escrita de los hallazgos y las soluciones propuestas dentro de los treinta días hábiles posteriores a la recepción de la queja.

Se puede presentar una queja directamente ante la Administración Federal de Tránsito presentando una queja ante la Oficina de Derechos Civiles:

Title VI Program Coordinator
East Building, 5th Floor-TCR
1200 New Jersey Ave., SE
Washington, DC 20590

Si necesita información en otro idioma, llame al 641-754-5719

Title VI Complaint Process

A person can receive a copy of the complaint form by contacting the transit administrator, Kevin Pigors, by either calling 641-754-5719, by faxing the request via fax machine at 641-754-4148 or by mailing in the request to the administrator at 905 East Main Street, Marshalltown, Iowa 50158.

Once the document is received by the transit administrator:

- Enter and record the tracking/document number
- The complaint document is reviewed to ensure that it has been filled out correctly and completely.
- If it is not, contact will be attempted with the complainant to fill out the form more completely.
- A fact-finding investigation around the event will be pursued, including confirmation that the transit employee allegedly involved was actually at work that day, on the specific route or run.
- The security camera footage will be removed from the bus, reviewed and saved on a SD card.
- The GPS data for the specific bus will be checked to confirm that it was near the scene of the event.
- There will be an interview with the complainant, the accused employee and witnesses.
- The information will be compiled, reviewed, followed up and then reviewed again.
- There will be a "Letter of Finding" issued within thirty calendar days of confirmation of all information received.

Marshalltown Municipal Transit

Title VI Complaint Form

Title VI of the 1964 Civil Rights Act requires that "No person in the United States shall, on the ground of race, color or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance."

The following information is necessary to assist us in processing your complaint. Should you require any assistance in completing this form, please contact the Transit Administrator, Kevin Pigors, at (641) 754-5719.

Complete and return this form to: Marshalltown Municipal Transit, Transit Administrator, 905 E Main St, Marshalltown, IA 50158.

1. Complainant's Name _____
2. Address _____
3. City _____ State _____ Zip _____
4. Telephone (home) _____ (cell) _____
5. Person discriminated against (if someone other than the complainant):
Name _____
Address _____
City _____ State _____ Zip _____
6. Which of the following best describes the reason you believe the discrimination took place? Was it because of your (please circle one):
A. Race/Color B. National Origin C. Age
D. Gender E. Income
7. What date did the alleged discrimination take place? _____
8. In your own words, describe the alleged discrimination. Explain what happened and who you believe was responsible. If you need more room please use the back of this sheet. _____

9. Have you filed this complaint with any other federal, state, or local agency, or with any federal or state court? Yes_____No_____

If yes, please circle each one that applies:

Federal Agency

Federal Court

State Agency

State Court

Local Agency

10. Please provide information about a contact person at the agency/court where the complaint was filed

Name_____

Address_____

City_____State_____Zip_____

Telephone Number_____

11. Please sign below. You may attach any written materials or other information that you think is relevant to your complaint.

Complainant's Signature

Date

Public Participation Plan

1) The goal of Marshalltown Municipal Transit's Public Participation Plan is to get meaningful input from the public, including LEP (Limited English Proficiency) persons when making major decisions effecting Marshalltown's city bus system.

2) Public Notification:

MMT will put a notice in the newspaper, the Times Republican, pertaining to service changes. Notices will also be posted in the buses and at the bus shelters. In an effort to reach the LEP population, these notices will also be posted in Spanish. Included in the notice will be the topic, date, time and location of the meeting. For those planning to attend that need assistance with getting to the meets, or special accommodations during the meetings, please contact the transit administrator so that your involvement can be as positive as possible. For those wanting to provide input but cannot attend, you can mail, fax or call the transit office. We value your thoughts, so please be involved. MMT will provide reasonable opportunities for public involvement in the transportation planning process at key points. If you require special assistance in getting to or participating in these meetings please call the transit office one or two days ahead of time to allow us to best accommodate you.

3) Public Participation Process:

MMT will meet at various times, dates, locations, different meeting sizes and formats to make it as convenient and inviting as possible for anyone from the public, including LEP persons to be able to participate in the decision-making process and to give their input on major changes with the transit system. Public meetings are held whenever there are fare increases, service reductions, and at the annual public hearing. MMT will encourage faith, cultural and social service-based organizations to be involved in this community wide decision-making process.

4) Public Outreach:

MMT has met with local human services groups and local radio stations to provide education on how to ride public transit. Larger, easier to read maps have been created to help individuals better understand the routes and are posted at each bus shelter. MMT has attended public events such at the Healthy Family Fair where families are connected with various social services. The representative who attends local events usually speaks Spanish to accommodate the LEP community.

Language Assistance Plan

A.) Purpose:

The purpose of this Language Assistance Plan is to meet the Federal Transit Administration's requirements to comply with Title VI of the Civil Rights Act of 1964, which prohibits discrimination on the basis of race, color or national origin. As a sub recipient of FTA funding, Marshalltown Municipal Transit has pledged to take reasonable steps to provide meaningful access to its transit services for persons who do not speak English as their primary language and who have a limited ability to read, speak or understand English. The FTA refers to these persons as Limited English Proficient (LEP) persons.

The U.S. Department of Transportation, Federal Transit Administration Office of Civil Rights' publication "Implementing the Department of Transportation's Policy Guidance Concerning Recipients' Responsibilities to Limited English Proficient Persons – A Handbook for Public Transportation Providers" was used in the preparation of this plan.

B.) Content:

This plan includes:

1. A needs assessment based on the four-factor analysis
2. Language assistance measures
3. A staff training plan
4. Methods for notifying LEP persons about available language assistance
5. Methods for monitoring, evaluating and updating this plan

B.1) - LEP Needs Assessment – the Four-factor Analysis

B.1.A.) Factor 1 - The number or proportion of LEP persons in our service area who may be served or are likely to encounter a transit program, activity or service.

MMT assessed the following information (as checked) about LEP persons to determine the number or proportion of LEP persons who might use or want to use our transit services:

☐ GIS map showing the transit service area and concentrations of LEP persons

☒ 2020 US Census data

☒ 2024 ACS Language Spoken at Home

☐ Local school district data

☐ Human Services Dept. data

2024 ACS:

The total number of LEP persons in our service area: 4,676

Spanish: 3,463 (13.3%)

Other Asian, Pacific Island, and Indo-European Languages: 1,213 (4.7%)

The total eligible population in our service area: 26,078

The proportion of LEP persons to the total eligible service population: 17.9%

B.1.B.) Factor 2 – The frequency with which LEP persons come in contact with our transit services, programs and activities.

We do not have any data regarding requests from LEP persons; however, since the transit routes serve a large portion of the City of Marshalltown, as well as a number of non-profit agencies, it is likely that we are providing services to LEP persons.

The main language spoken by LEP persons in Marshalltown is Spanish.

B.1.C.) Factor 3 – The nature and importance of services, programs or activities provided to the LEP population.

MMT considers our transit services to be an important and essential service for many people living in our service area.

B.1.D.) Factor 4 – The resources available to our transit system and the overall cost to provide language assistance.

MMT's creates marketing material for our community with LEP persons in their language about transit services that are available to them. We also have key documents available in Spanish. Since it's done in-house the cost is minimal. Google Translate is available for each driver.

B.2) – Language Assistance Measures

Language measures currently used and planned to be used by MMT to address the needs of LEP persons include:

- X Translating key documents into the following language(s): Spanish
- X Arranging for availability of oral translators whenever possible
- X Communicating with LEP persons' groups about transit services
- X Posting notices in appropriate languages informing LEP persons of available services

___ Other – Describe:

B.3) – Staff Training

To ensure effective implementation of this plan, MMT will schedule training at orientations for new staff and annually for all employees with contact with the public on how to handle verbal requests for transit services in a foreign language.

B.4) – Notice to LEP Persons about Available Language Assistance

MMT plans to notify LEP persons in their own language about the language assistance available to them without cost by using the following methods:

- X brochures
- X sending information to local organizations that work with LEP persons
- X website notices

___ Other, describe:

B.5) – Monitoring, Evaluating and Updating This Plan

MMT will review this plan annually by:

Assessing the sufficiency of staff training and budget for language assistance.

Reviewing current sources for assistance to ensure continuing availability.

Reviewing any complaints, comments and suggestions from LEP persons, or agencies that serve them, that were received during the past year.

This plan will be reviewed annually by MMT staff. Revisions of this plan will be approved by the transit administrator and dated accordingly.

C – Dissemination of Plan

C.1) This Language Assistance Plan is available on our website at marshalltown-ia.gov

This plan is also available at no cost in English or Spanish upon request by telephone, fax, mail, e-mail or in person.

If requested to be provided in another language and it is feasible to have it translated, it shall be provided at no cost to the requester.

D) – Contact Information

Questions or comments about this plan may be submitted to:

Name: Kevin Pigors

Title: Transit Administrator

Address: 905 East Main Street, Marshalltown, Iowa 50158

Telephone Number: 641-754-5719

Fax Number: 641-754-4148

Place holder for City Council minutes and resolution

System-wide Service Standards

Vehicle Load Standard:

Vehicle Type	Average Passenger Capacities			
	Seated	Standing	Total	Maximum Load Factor
29' Gillig	23	20	42	1.8
40" Gillig Low Floor	38	45	83	2.1
214" Glaval LF	17	0	17	1

The average of all loads during the peak operating period should not exceed vehicles' achievable capacities, which are 42 passengers for the Gillig 29' vehicles, 76 Passengers for the Gillig 40' vehicles, and 17 passengers for the Glaval Cut-away.

Vehicle Headway Standard:

Tabular Format:

Policy Headways and Periods of Operation		
Fixed Route Service	Runs	Minutes
Early Morning	2	75
Weekday	32	30
Seasonal AM	1	50
Seasonal PM	2	50

Written Format:

The first fixed route runs of each weekday takes seventy-five minutes. The rest of the fixed route runs for each day take thirty minutes. Service begins at 7:05 AM and ends at 5:00 PM

Complementary Paratransit service trip length will be the same or less than a similar trip would be using the fixed route system.

On-Time Performance Standard:

95% of Marshalltown Municipal Transit's fixed routes will complete

their established runs no more than five minutes early or late in comparison to the published schedule timetables.

95% of Marshalltown Municipal Transit's paratransit service will deliver passengers by their scheduled appointment time.

Service Availability Standard:

The listed bus stops will not be more than thirteen blocks apart on the primary fixed routes. However, we do have bus stop signs at intersections along the paths at closer intervals. Also, it is the written policy that MMT will pick up or drop off any passengers at any street corner along the fixed routes. The Complementary Paratransit service covers anywhere within city limits.

System-wide Service Policies:

The Vehicle Assignment Policy is a document that explains why specific buses are assigned to specific driving tasks, whether fixed or subscription service routes.

System-wide Service Amenities

(Required before purchase of vehicle without access features required in 49 CFR, Part 38)

When viewed in its entirety, the demand-responsive passenger transportation program of Marshalltown Municipal Transit provides disabled persons with access equal to that afforded to any other persons in terms of the following criteria.

- 1) Response time
- 2) Fares
- 3) Geographic area of service
- 4) Hours and days of service
- 5) Restrictions based on trip purpose
- 6) Availability of information and reservations capabilities
- 7) Constraints on capacity or service availability

Please complete the ADA Needs Analysis for Demand Response Public Transit information.

Americans with Disabilities Act (ADA) Needs Analysis for Demand Responsive Public Transit

The ADA requires demand-responsive public transit systems to provide program accessibility for persons with disabilities. Such features and services of your transit system must be provided in the most integrated manner possible. Unlike fixed-route systems, a demand-responsive system is not required to buy only accessible vehicles, but may purchase non-accessible transit vehicles once it has reached the point where it can assure that an individual with a disability calling in for service on any part of the system can be transported via an accessible vehicle as quickly as a nondisabled person requesting service in the same area. Trip purpose restrictions, advance reservations requirements, etc., are allowable so long as they do not impact disabled persons any differently than they do others.

Although the vehicle accessibility standards are probably the most noticeable of the ADA access requirements, for the demand-responsive system access to the ride-request/dispatch function is every bit as critical and must be considered a priority in programming. An analysis should be completed documenting how ride requests/ reservations are handled for all parts of the public transit system. (For brokered systems such an analysis must cover all vehicles purchased with U.S. DOT funding plus any other vehicles for which statistics are counted for funding purposes). In each case, access to phone-in facilities must be provided for hearing impaired persons and access to face-to-face reservation facilities must be provided for persons with mobility impairments, whether these requirements are currently met and, if not, how they will be met in the future including a listing of any capital improvements needed to accomplish that. (It may not always be necessary for the transit system to own telephone equipment for hearing impaired persons, but arrangements must be made which do not involve considerably more effort.)

Access to system information is also a critical need under ADA. Any alternate phone number(s) for hearing disabled persons must be prominently featured in system literature. All literature must also be available in Braille or taped cassette formats for visually impaired persons. (Remember that all system services must be described in system literature and that such literature must include the information that **these services are open to the public, including persons with disabilities, without discrimination**).

Outlets for ticket/pass sales or locations for obtaining eligibility identification cards must be accessible to all persons with disabilities. The analysis should identify any such outlets/locations for the system. For each, an assessment should be made of whether it is currently accessible or, if not, what will need to be done to provide access. (Remember that sometimes it is more sensible to change the location than to do any kind of major retrofitting of a facility.)

Access to public transit vehicles by disabled persons is the heart of the ADA's transportation title. As mentioned earlier, fixed-route transit systems must buy only vehicles that are accessible to persons with a wide array of disabilities that would prevent their usage of today's (or yesterday's) "standard buses." Demand-responsive transit systems must also buy only accessible vehicles, unless they can already provide accessible service to any disabled person requesting to ride on any part of the system just as quickly as a nondisabled person.

At first reading this would appear to have little impact on Iowa's demand-responsive public transit systems because most have had significant numbers of "lift-equipped" vehicles in their fleets to carry persons in wheelchairs. The ADA rules, however, set a higher standard of accessibility that most existing vehicles do not meet. Under ADA, to be considered accessible vehicles must have longer platforms on their lifts so that they can carry the popular three-wheel scooter mobility devices as well as traditional wheelchairs. They must have a double handrail on lift to support standees throughout the operation of the lift process.

The lifts are used to carry persons unable to comfortably climb stairs, but not yet using a wheelchair. They must transport the mobility devices in a forward or rearward facing orientation, instead of the more dangerous but cheaper side-facing positions, and the securement systems used must provide better protection than most of those currently in use. They must also allow either 56 or 68 inches of headroom from the lift to the securement location. There are also other minor new requirements.

The first step in analyzing whether vehicles to be purchased by a demand-responsive transit provider must be accessible is to evaluate the existing fleet. How many existing vehicles meet the accessibility standards? Are there any others, which can with only minor changes be brought into compliance?

Next, the various services provided under the auspices of the system should be examined. In each case an assessment should be made whether the service is currently provided with an accessible vehicle, and if it is not, whether there is some other accessible vehicle available to provide the service if someone in a scooter, for instance, might request a ride. The assessment may involve programming a retrofit of existing vehicles to meet the accessibility standard, but prior to the system programming purchase of any non-accessible vehicles. The assessment should document the way by which the system is able to respond to a request for accessible transportation on any of its services in a way that matches the response time for nondisabled ride requests.

Other facets of the transit program are also affected by ADA. All transit board meetings, advisory meetings, planning meetings, etc., are required to be open to the public. The meeting locations must be fully accessible to persons with disabilities. Such access must include access to water fountains, restrooms, vending machines or other amenities available to others involved in the meeting. As with other functions such as ticket sales, etc., the remedy need not involve changes to the current site, but could instead merely involve scheduling the meetings at a different location where accessibility features are available. Thought should also be given to scheduling meetings when accessible transit service is available or providing special service for persons wishing to attend the meetings.

Even once all transit functions, which involve interfacing with the public, are made accessible to persons with disabilities there may still remain workplace accessibility concerns under ADA. This might be especially true if some of the public functions have been made accessible by relocating them to a different site. Workplace accessibility for both office and garage facilities becomes a factor if any new construction, additions or modifications are anticipated. The new areas must be designed for full accessibility and with additions or modifications, to the extent that cost is not disproportionate to the overall project total. It is required that restrooms, drinking fountains, etc., serving the new or remodeled areas must also be made accessible. Even in the absence of any planned additions or remodeling, the employment provisions of ADA require that reasonable accommodations be made in existing work sites to allow a qualified employment candidate with disability to access the workplace and perform their job duties.

Access to vehicle dispatch/ride reservations

What arrangements have been made to allow access to dispatch service by persons with hearing impairments? (Examples: equipping dispatch with a Telecommunications Device for the Deaf (TDD), having calls relayed by other agency with TDD, etc.)

Do the above-described arrangements cover all transportation services provided as part of the transit program and do they avoid imposing any greater cost or inconvenience on such disabled persons than on other riders? (i.e., toll call vs. toll-free call or shorter hours). [The complementary paratransit service is open to the public the same hours as the fixed routes.](#)

Are these arrangements prominently publicized in all system literature or media advertising? [We display it on system literature.](#)

Describe any special outreach conducted to inform hearing-impaired persons of this access to the dispatch function. [None recently.](#)

Access to system information

What efforts have been undertaken to make system information (such as brochures, schedules, etc.) accessible to persons with visual impairments (examples: audiotape version available, Braille version available, large print version available)? [MMT has large print and available upon request.](#)

Does all literature/advertising include information that all services are **open to the general public, including persons with disabilities**? [Yes, this includes bus signage, bus schedules, city council meeting agendas and our passenger handbooks.](#)

Describe any special outreach conducted to inform various segments of the disabilities community of service accessibility. [The transit administrator has met with persons with disabilities and the agencies that work with them, throughout the year.](#)

Access to ticket/token/pass/identification (ID) outlets

If your system allows or requires users to pay fares or obtain ID's at any location other than aboard a transit vehicle, describe each such location, what function it is used for, and whether the site itself is accessible to persons with disabilities as well as whether any public restrooms, drinking fountains, etc., serving the site are accessible.

Location	Public Transit Function(s)	Site Accessible	Amenities Available	Public amenities available
City Hall	Ticket Outlet	Ramp & electric door	Drinking fountain, restrooms, chairs	The Same
Hy-Vee	Ticket Outlet	Automatic doors	Drinking fountain, restrooms, chairs and vending machines	The Same
Marshalltown High School	Ticket Outlet	Automatic doors	Drinking fountain, restrooms, chairs and vending machines	The Same
Lenihan Intermediate School	Ticket Outlet	Automatic doors	Drinking fountain, restrooms, chairs and vending machines	The Same
Miller Middle School	Ticket Outlet	Automatic doors	Drinking fountain, restrooms, chairs and vending machines	The Same

Fleet Accessibility

List all passenger vehicles in the public transit fleet, including both vehicles bought with state or federal transit funds and vehicles bought with any other funds that are used to provide services counted toward public transit formula funding. For each, list ID number and length, then indicate whether the vehicle meets the various ADA standards for accessibility (see Appendix M in your Agreement Binder).

Fleet ID#	101	109	121	131
Vehicle Length	29'	29'	29'	29'
Lift	No	No	No	No
Ramp	Lift-U LU11-08-04	Lift-U LU11-06-02	Lift-U LU11-08-05	Lift-U LU18-02-03
Headroom	78"	78"	78"	78"
Securement Locations	Two / Same Side	Two / Same Side	Two / Same Side	Two / Same Side
Securement Systems	Q-Straint	Q-Straint	Q-Straint	Q-Straint
Lighting	Yes	Yes	Yes	Yes
Priority Seating	Yes	Yes	Yes	Yes
Handrails	Yes	Yes	Yes	Yes

Fleet ID#	181	014	191
Vehicle Length	29'	40'	28'
Lift	No	No	No
Ramp	Lift-U LU18-02-09	Lift-U LU5-02-03	Ricon BR2E
Headroom	78"	78"	78"
Securement Locations	Two / Same Side	Two / Opposite Each Other	Three / Two Same Side, One Opposite Side
Securement Systems	Q-Straint	Q-Straint	Q-Straint
Lighting	Yes	Yes	Yes
Priority Seating	Yes	Yes	Yes
Handrails	Yes	Yes	Yes

Service accessibility

List each distinct service provided by the public transit program (i.e., all services performed by vehicle listed previously). This should include a separate listing for each contract, and if a contract involves different services provided by different vehicles or covers different service areas serviced by different vehicles, these should be broken out. For each service element listed, indicate whether it is currently provided by an existing ADA accessible vehicle. For each service element that is not served by an ADA accessible vehicle, indicate, if possible, how you would be able to respond to a request to carry a 48-inch long scooter, or an individual with a walker needing lift assistance, on such service with a response time and fare matching those available for current riders.

Service	Accessible vehicle	Means for providing access	Accessible amenities
Fixed Routes	ADA Compliant	Ramps and lifts	Benches and ADA Compliant Shelters, Route Maps and Schedules
Seasonal Routes	ADA Compliant	Ramps and lifts	Benches and ADA Compliant Shelters, Route Maps and Schedules
Complimentary Para Transit Subscription	ADA Compliant	Ramps and lifts	
Complimentary Para Transit Service	ADA Compliant	Ramps and lifts	

Transit meeting access

List all meetings relating to the transit program such as board meetings, transit advisory meetings, planning advisory meetings, budget meetings, public hearings, etc., and their normal location. For each location, note whether the site itself is accessible to persons with disabilities and whether any amenities (restrooms, drinking fountains, vending areas, etc.) available to persons attending the meetings at the site are accessible.

Meeting	Location	Accessible Site	Accessible amenities
Typical Business Meetings	Public Works Facility	Yes	ADA access to front door, restrooms and drinking fountain
Board Meetings	City Hall Council Chambers	Yes	ADA front door, elevator, restrooms and drinking fountain
Public Hearings	City Hall Council Chambers	Yes	ADA front door, elevator, restrooms and drinking fountain
Planning Advisory Meetings	Courthouse, second floor	Yes	ADA front door, elevator, restrooms and drinking fountain

Access to workplace

List all locations where persons involved in any aspects of providing the transportation services listed previously work. This would include administrative offices, dispatching areas, driver staging areas, vehicle maintenance areas, purchasing offices, coordinator or outreach offices if supported by transit, etc. For each, note whether the persons working at this site are employees of the transit system or employees of subcontractors, then note whether the site is accessible to persons with disabilities and whether the amenities available at the site for people working there are accessible.

Worksite	System employee or contractors	Site accessible	Amenities accessible
Administrative Offices	Employees and contractor	Yes, ADA front door	Restrooms, drinking fountain, chairs
Dispatcher / Office Assistant	Employees and Contractor	Yes, ADA front door	Restrooms, drinking fountain, chairs
Conference Room	Employees, Contractors and General Public	Yes, ADA front door	Restrooms, drinking fountain, chairs
Driver Staging	Employees Only	Yes, ADA front door	Restrooms, drinking fountain, chairs
Maintenance Area	Employees Only	Yes, ADA front door	Restrooms, drinking fountain, chairs

Transit Amenities Policy

The decision of where to place amenities is decided by the decision-making authority of the property. For example, ticket outlets are not owned by MMT. Amenities, such as benches and shelters, that are placed on terraces owned by the City, are strategically placed based on pedestrian traffic and passenger demand along bus routes.

System-wide Service: Vehicle Assignment Policy

All vehicles are able to run any service MMT offers. When assigning buses to different routes there are a several things to take into consideration:

- 1) Mileage
- 2) Preventative Maintenance
- 3) Bus Capacity
- 4) Ramp style & accessibility
- 5) Personnel/Operator Disabilities (ADA)
- 6) Break-downs

It is essential to our fleet to maintain the mileage of daily use; ensuring that all buses are getting the fiscal miles met for the year end. In doing so it is easier to keep track of our preventative maintenance procedures in knowing which buses are ready to be pulled into the maintenance shop.

Knowing the routes and which bus to send on the routes per the capacity of the buses available is crucial considering the safety of the passengers. Capacities to allow for are: walk-on, standing and mobility devise segments in each type/style of bus. In our current fleet we have 1 - Low Floor Glaval and 6 - Low Floor Gilligs.

Again, knowing the routes, the ramp or lift style, and accessibility of the buses for our disabled patrons is another vital key to vehicle assignment. Most vehicles in our fleet have a 2-position capacity for mobility devises.

Also, a key component in vehicle assignment is the accommodations made for our Operators per the Americans with Disabilities Act. The ADA requires that our Marshalltown Municipal Transit system make reasonable accommodations to allow our drivers to operate the vehicles with minimal incident.

Finally, unexpected break-downs cause the vehicle assignments to shift from time-to-time.

Declaration of the Respondent

I declare that I have provided information as part of the Title VI Program to the best of my knowledge and believe it to be true, correct and complete.

Signature of Respondent:

Date:

Declaration of the Administrative Head

I declare that I have reviewed and approved the information provided in the Title VI Program and to the best of my knowledge believe it to be true, correct and complete.

Signature of Respondent:

Date:



**MARSHALLTOWN
MORE THAN EVER**

**Mike Ladehoff, Mayor
Carol Webb, City Administrator
24 North Center Street
Marshalltown, IA 50158
PH 641.754.5701 • FX 641.754.5717**

To: Mayor and City Council
From: Heather Thomas, Public Works Director, Bob Ranson, WPCP Superintendent
Meeting Date: September 14, 2026
Re: Resolution Ordering Construction of the Flow Equalization Improvements for Industrial Pretreated Wastewater, Project #WPC25002, Setting Public Hearing on Proposed Plans, Specifications, Form of Contract, and Opinion of Probable Cost, and Directing Publication of Notice to Bidders

Strategic Plan Objective:

None of the Top or High Priority Goals identified in the 2025 Strategic Plan are related to this item, but a continuing goal is related to Wastewater Capacity Improvements. This project does not increase the overall treatment capacity of the plant; however, it will allow us to coordinate with an industrial sewer user to better coordinate on getting industrial waste to the SBR industrial treatment trains and potentially reduce bypassing to the domestic treatment trains and sanitary sewer collection system. Additionally, failure to operate our treatment facility with minimal bypassing and compliance violations would result in issues from Iowa DNR and EPA.

Recommended:

Staff recommends ordering construction and setting the public hearing.

Budget Impact:

This project was included in the most recent approval of the Capital Improvement Plan. The opinion of probable construction cost is \$1,891,000. We have sufficient sanitary sewer enterprise funds on hand, which are generated through sewer utility rates. During our next utility rate review, we will be including this project, other capital improvements, and operating/maintenance costs in analyzing rates for both domestic and industrial rates. This project accounting will run through Fund 615.

Description/Background:

The city operates a 13 MGD wastewater treatment facility with five treatment trains. Two of the treatment trains primarily serve industrial pretreated wastewater. Industrial pretreated wastewater is currently conveyed by gravity to the city's facility through privately owned conveyance piping. The hydraulic design of the private gravity line and wastewater characteristics result in insufficient gravity flow in the pipe at times, which causes our pumps that lift the wastewater from the gravity line to our SBR basins to cavitate. This results, at times,

in the need for the industry to bypass some of their wastewater into the city's domestic sewer collection and conveyance system.

In coordination and collaboration with Industry, it was determined that the private gravity conveyance piping needed to become a conveyance force main where the industry will pump wastewater to the city's treatment facility. The City issued the industry a compliance schedule in relation to the necessary private infrastructure upgrades. In order to accommodate the required private infrastructure upgrades, the city will need to install flow equalization at our facility so that the industrial wastewater can be accepted from a private force main and continue to be pumped by the City to our SBR basins.

This project was designed by HR Green.

We proposed calendar dates for completion, with substantial completion on or before August 31, 2027 and full completion on or before September 30, 2027.

Liquidated damages have been set at \$1,000 / calendar day for completion.

The bid timeline is as follows:

- Ordering construction at the September 14th, 2026 council meeting
- Public Hearing at the September 28th, 2026 council meeting
- Receiving/Opening Bids at 10:00 AM, Tuesday, October 26th, 2026 @ City Hall
- Awarding Bid at the October 12th, 2026 council meeting

Attachments:

1. Resolution Order Construction WPC25002_Flow Equalization
2. WPC25002 WPC Flow EQ_Plans
3. WPC25002 WPC Flow EQ_Project Manual
4. WPC25002 WPC Flow EQ_Cost Opinion
5. WPC25002 WPC Flow EQ_Notice of Public Hearing
6. WPC25002 WPC Flow EQ_Notice to Bidders

**RESOLUTION ORDERING CONSTRUCTION OF THE FLOW EQUALIZATION
IMPROVEMENTS FOR INDUSTRIAL PRETREATED WASTEWATER, PROJECT
#WPC25002, SETTING PUBLIC HEARING ON PROPOSED PLANS,
SPECIFICATIONS, FORM OF CONTRACT AND OPINION OF PROBABLE COST
AND DIRECTING PUBLICATION OF NOTICE TO BIDDERS**

WHEREAS, there is now on file in the office of the City Clerk proposed plans, specifications, form of contract, and opinion of probable costs for the Flow Equalization Improvements for Industrial Pretreated Wastewater Project, in the City of Marshalltown, Iowa, as is fully set forth in the plans and specifications for Project No WPC25002; and

WHEREAS, the cost of the said improvement is in excess of \$25,000 and a public hearing on the plans, specifications, form of contract and the opinion of probable cost of said improvement is required by law and that notice thereof shall be given as required by law; and

WHEREAS, it is intended that the cost of said improvement shall be paid from such funds as the City may legally use for such purposes or from the proceeds from the issuance of such bonds as may be legally issued for said purposes or any combination of the above methods of financing.

NOW, THEREFORE, BE IT RESOLVED BY THE COUNCIL OF THE CITY OF MARSHALLTOWN, IOWA:

Section 1. This Council does hereby order the construction of the Flow Equalization Improvements for Industrial Pretreated Wastewater Project, in the City of Marshalltown, Iowa, which public improvement is fully and particularly described in the plans and specifications for Project No. WPC25002, now on file in the office of the City Clerk of Marshalltown, Iowa.

Section 2. That the method of construction shall be by contract in accordance with the plans and specifications and general stipulations for the said improvement approved by the City Council.

Section 3. The Contractor will be paid in monthly estimates for work completed as set out in the specifications. The project shall begin on or near the appropriate starting date as specified on the form of proposal and shall be completed within the specified number of calendar days also indicated thereon.

Section 4. That the said improvements shall be paid for from such funds of the City as may be legally used for such purposes, or from the proceeds of the issuance of such bonds as may be legally issued for such purposes or from any combination of such methods of financing and will be paid in accordance with the Notice to Bidders duly published in connection therewith. The Finance Director shall establish on the books a Flow Equalization Improvements for Industrial Pretreated Wastewater Project fund and the bond proceeds or such funds of the City as may be legally used for such purposes are hereby appropriated to pay all costs of the improvements including legal publication, bond, design, engineering, survey and inspection, contract and contingency cost as estimated by the Engineer. The Finance Director is directed to advance all sums necessary from the project fund, and to set up on the books the obligations and receivables of the fund.

Section 5. The City Clerk is hereby directed to publish notice of hearing on plans, specifications, and form of contract and opinion of probable cost in the manner provided by law for the public improvement outlined herein and that any person interested therein may appear and make objections thereto, if any he has. This Council will meet in the Council Chamber, Second Floor, 10 West State Street at Marshalltown, Iowa, at 5:30 P.M., local time on September 28, 2026, for the purpose of hearing all of said objections so made and for taking final action upon the plans, specifications, and form of contract now on file.

Section 6. Staff is further directed to advertise for bids in the manner provided by law for the construction of said improvements, setting forth in said notice such necessary pertinent information as will advise prospective bidders thereof together with the proposed manner of payment of the work to be constructed and that such bids be filed and received in the office of the City Clerk of Marshalltown, Iowa, up to 10:00 A.M., local time, on October 6, 2026. The bids will be opened, read, and tabulated by the Public Works Director or their designate at that time and will be acted upon by the City Council of said City at a meeting to be held in the Council Chambers, Second Floor, 10 West State Street, Marshalltown, Iowa, at 5:30 P.M., local time, on October 12, 2026, or at such later time and place as may then be fixed for considering such bids as shall be filed in connection with the improvement herein ordered and in compliance with the notice of taking bids therein, hereby ordered to be published.

Passed this 14th day of September 2026, and signed this _____ day of September 2026.

CITY OF MARSHALLTOWN, IOWA

Mike Ladehoff, Mayor

ATTEST:

Alicia Hunter, CMC, City Clerk

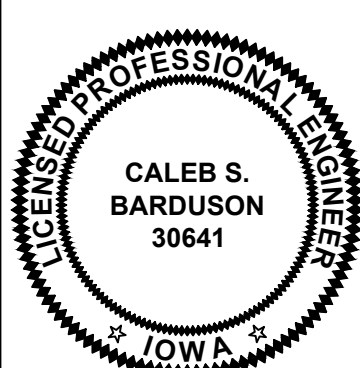
FLOW EQUALIZATION IMPROVEMENTS INDUSTRIAL PRETREATED WASTEWATER CITY OF MARSHALLTOWN

MARSHALLTOWN, IOWA

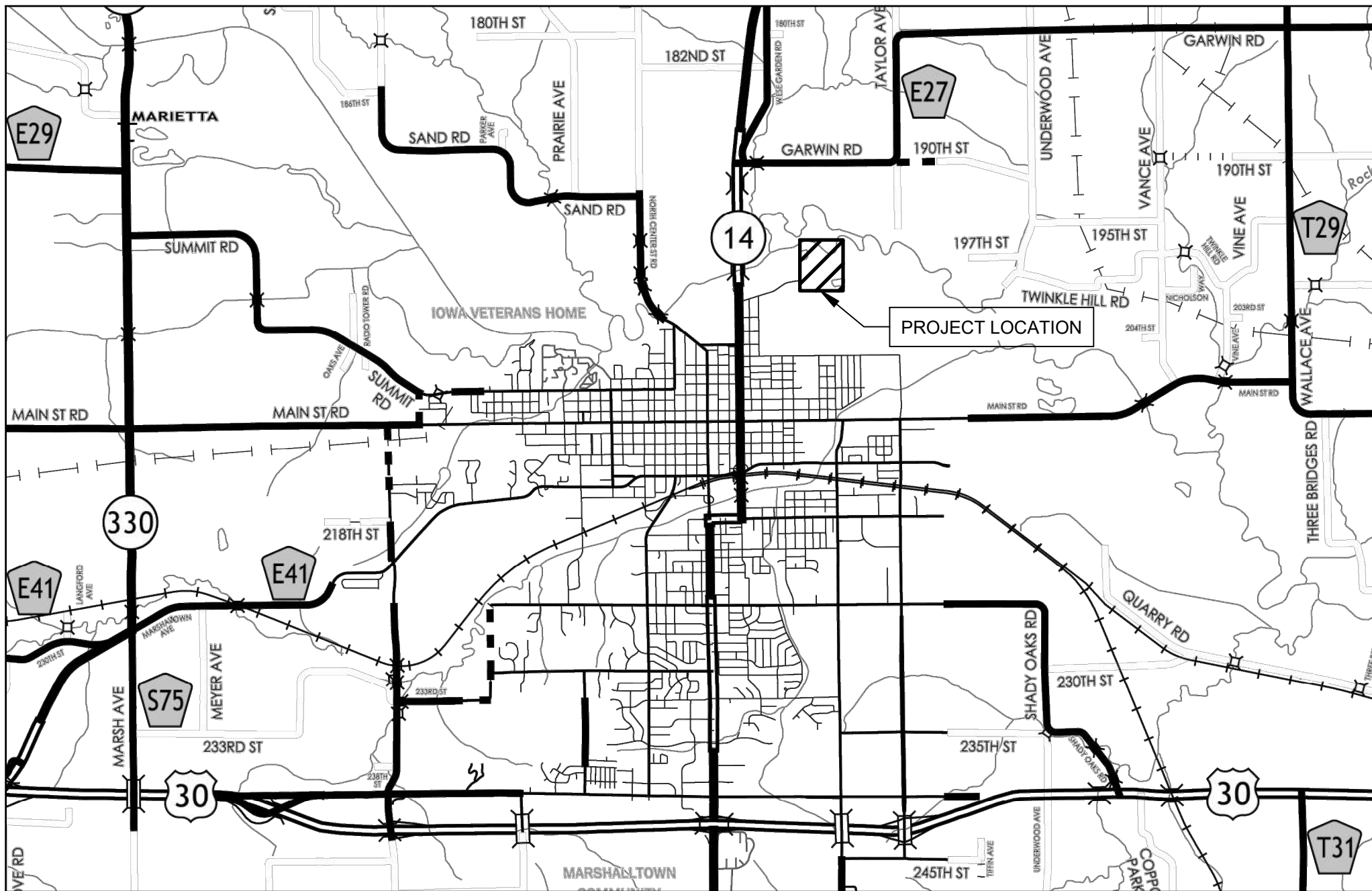
2026

CITY PROJECT NUMBER: WPC25002

CERTIFICATION

	I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa. <i>Joseph P. Frankl</i> 09-09-2026 JOSEPH P. FRANKL, P.E. DATE License Number: 23145 My license renewal date is December 31, 2026. Pages or sheets covered by this seal: ALL G-SHEETS, C-SHEETS & P-SHEETS
	I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa. <i>Derek J. Matthies</i> 09-09-2026 DEREK J. MATTHIES, P.E. DATE License Number: 23006 My license renewal date is December 31, 2026. Pages or sheets covered by this seal: ALL S-SHEETS
	I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa. <i>Caleb S. Barduson</i> 09-09-2026 CALEB S. BARDUSON, P.E. DATE License Number: 30641 My license renewal date is December 31, 2027. Pages or sheets covered by this seal: -

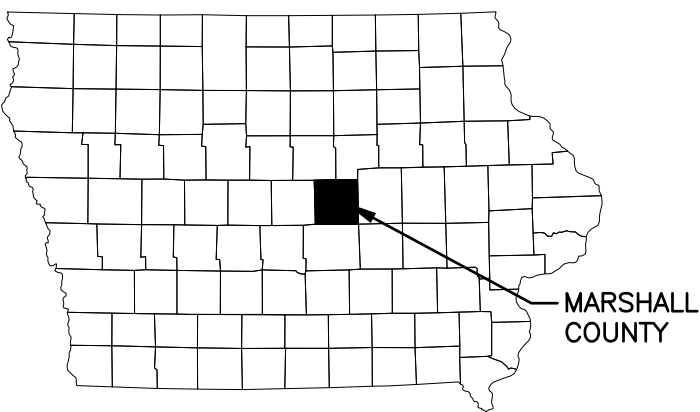
LOCATION MAP



SHEET INDEX

Sheet Number	Sheet Title
G-GENERAL	
G.001	COVER SHEET
G.002	OVERALL SITE PLAN & GENERAL NOTES
C-CIVIL	
C.000	CIVIL LEGEND
C.001	SITE LAYOUT
C.101	GRADING & FENCING PLAN
C.102	SITE PAVING PLAN
C.103	YARD PIPING PLAN
C.401	INFLUENT PIPING PROFILES
C.402	EFFLUENT PIPE PROFILE
C.501	CIVIL DETAILS
C.502	CIVIL DETAILS
C.503	VALVE VAULT DETAILS
C.504	VALVE VAULT DETAILS
S-STRUCTURAL	
S.100	STRUCTURAL NOTES
S.101	TANK FOUNDATION PLAN
S.102	TANK WALL PLAN
S.103	TANK SLAB PLAN
S.201	SECTION & DETAILS
P-PROCESS	
P.001	PROCESS LEGEND & ABBREVIATIONS
P.101	TANK PIPING PLAN - LOWER LEVEL
P.102	TANK PIPING PLAN - UPPER LEVEL
P.103	TANK PIPING SECTION & DETAILS
P.201	MONFORT PIPING & VALVE MODIFICATIONS
P.301	SBR PUMP BUILDING PIPING MODIFICATIONS
P.501	PROCESS DETAILS
E-ELECTRICAL	
E.001	ELECTRICAL LEGEND & ABBREVIATIONS
E.100	OVERALL SITE PLAN
E.101	ELECTRICAL SITE PLAN
E.102	ELECTRICAL PLAN - TANK & MONFORT STRUCTURE
E.103	ELECTRICAL PLAN - SBR BUILDING
E.501	ELECTRICAL DETAILS
E.601	SCHEDULES

BID SET



5525 MERLE HAY ROAD, SUITE 200 | JOHNSTON, IOWA 50131
Phone: 515.278.2913 | Toll Free: 800.728.7805 | Fax: 713.965.0044 | HRGreen.com

DRAWN BY: BDB JOB DATE: 2026 SCALE: ViewportScale
APPROVED: JPF JOB NUMBER: 2503420
CAD DATE: 9/9/2026 10:33 AM
CAD FILE: 2503420-G-COVER-G001.dwg

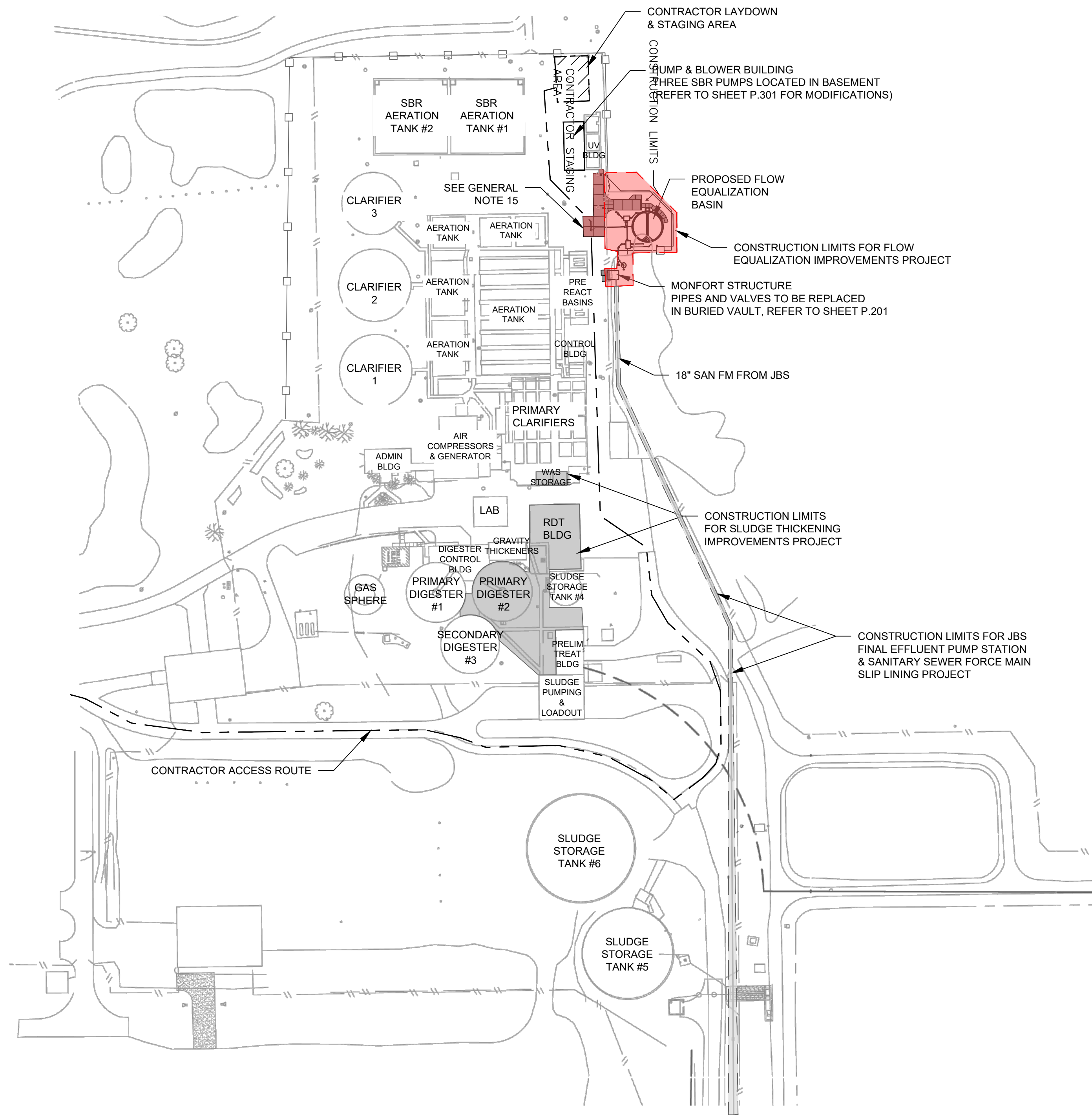
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FLOW EQUALIZATION IMPROVEMENTS
CITY OF MARSHALLTOWN
MARSHALLTOWN, IOWA

G-GENERAL
COVER SHEET

SHEET NO.
G.001



1 OVERALL SITE PLAN
SCALE: 0 100
1" = 100'



GENERAL NOTES:

- "SCREENED" (LIGHT) DELINEATION SHOWN IN THIS SHEET DENOTES EXISTING CONDITIONS (UNLESS NOTED OTHERWISE). "SCREENED" INFORMATION WAS TAKEN FROM PREVIOUS CONSTRUCTION DRAWINGS AND FIELD SURVEY, IS FOR REFERENCE ONLY, AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO ORDERING OF MATERIALS AND BEGINNING CONSTRUCTION. "BOLD" DELINEATION IS NEW WORK TO BE CONSTRUCTED UNDER THIS CONTRACT.
- THE SITE SHALL BE KEPT ORDERLY AND REASONABLY CLEAN AT ALL TIMES DURING CONSTRUCTION. AT THE CONCLUSION OF CONSTRUCTION, THE SITE SHALL BE CLEANED THOROUGHLY OF ALL WASTE, RUBBLE, DEBRIS, AND UNUSED MATERIALS.
- CONTRACTOR RESPONSIBLE TO CLEAN ALL TRACKED DIRT FROM PAVED SURFACES AT THE END OF EACH WORK DAY. CONTRACTOR RESPONSIBLE TO SWEEP HAUL AND STAGING ROUTE AS NECESSARY TO KEEP CLEAR OF DIRT AND DEBRIS. WATER SHALL BE USED DURING STREET SWEEPING EXCEPT DURING FREEZING CONDITIONS.
- CONTRACTOR SHALL NOT BE REQUIRED TO HAUL ANY EXCESS EXCAVATION OFF-SITE. CONTRACTOR SHALL COORDINATE WITH THE OWNER FOR STOCKPILE LOCATIONS.
- CONTRACTOR SHALL COORDINATE WITH OWNER FOR CONSTRUCTION STAGING AND STORAGE AREAS. STAGING AND STORAGE AREAS MAY BE LIMITED DUE TO OTHER ONGOING CONSTRUCTION PROJECTS.
- CONTRACTOR IS RESPONSIBLE FOR SECURITY OF THEIR PROJECT AREA. OWNER IS NOT RESPONSIBLE FOR SECURED/UNSECURED MATERIALS STORED ONSITE.
- ALL DISTURBED GRASSY AREAS SHALL BE SEEDED UNLESS OTHERWISE NOTED. SEEDED AREAS SHALL RECEIVE 3" TOP SOIL, SEED, MULCH, AND WATER IN ACCORDANCE WITH SPECIFICATION SECTION 32 9219.
- REFER TO SPECIFICATION SECTION 01 1000 FOR SEQUENCING REQUIREMENTS.
- ONE WEEK PRIOR TO COMMENCING CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY:
 - CITY OF MARSHALLTOWN
 - ALL UTILITY COMPANIES
 - ENGINEER
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR RECORDING "AS-BUILT" INFORMATION FOR ALL NEW CONSTRUCTION. RECORD DRAWINGS SHALL BE MAINTAINED BY THE CONTRACTOR AND KEPT UP TO DATE AS THE WORK PROGRESSES. THE ORIGINAL RECORD DRAWINGS SHALL BE PROVIDED TO THE ENGINEER UPON COMPLETION OF CONSTRUCTION.
- THE CONTRACTOR SHALL VIDEO RECORD THE ENTIRE PROJECT AREA PRIOR TO BEGINNING CONSTRUCTION. ACTIVITIES FOR THE PURPOSE OF DOCUMENTING EXISTING CONDITIONS. THE CONTRACTOR SHALL PROVIDE ONE COPY TO THE CITY AND ONE COPY TO THE ENGINEER. THE CONTRACTOR SHALL LEAVE THE EXISTING ELEMENTS AND FACILITIES IN EQUAL OR BETTER-THAN-ORIGINAL CONDITION AND TO THE SATISFACTION OF THE ENGINEER.
- CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ACCESS TO THE SITE THROUGHOUT CONSTRUCTION, INCLUDING SNOW REMOVAL AS APPLICABLE.
- THE GRADING LIMITS FOR THE WORK SITE IN THIS CONTRACT ARE WITHIN THE LIMITS WHICH DO NOT REQUIRE APPLICATION AND FILING OF A "NOTICE OF INTENT" FOR A PERMIT TO DISCHARGE STORM WATER UNDER IOWA GENERAL PERMIT NO. 2. EVEN THOUGH A GENERAL PERMIT NO. 2 NOTICE OF INTENT MAY NOT BE NEEDED, THE CITY REQUIRES THAT "BEST MANAGEMENT PRACTICES" FOR EROSION CONTROL BE FOLLOWED. THE CONTRACTOR SHALL DETERMINE THE LOCATION AND INSTALL SILT FENCE, FILTER SOCK, AN/OR ANY OTHER EROSION CONTROL MEASURES THAT ARE TYPICALLY USED IN EROSION CONTROL TO MEET BEST MANAGEMENT PRACTICES OR AS REQUIRED BY OWNER/ENGINEER.
- PROJECTS CURRENTLY AND ANTICIPATED TO BE UNDERWAY AT THE MARSHALLTOWN WPCP WHICH MAY REQUIRE COORDINATION FOR COMPLETION OF THE WORK INCLUDE THE FOLLOWING LIST BELOW. THE LIST MAY NOT BE ALL-INCLUSIVE AND DATES AND INFPRMATION MAY BE SUBJECT TO CHANGE:
 - SLUDGE THICKENING IMPROVEMENTS: CURRENTLY UNDER CONSTRUCTION AND ANTICIPATED TO BE COMPLETED BY JUNE 2027.
 - JBS FINAL EFFLUENT PUMP STATION @SANITARY SEWER FORCE MAIN SLIP LINING PROJECT: CONSTRUCTION ANTICIPATED TO START IN 2027.
- CONTRACTOR TO COORDINATE WITH CITY ON INTERFERENCES TO WPCP VEHICLE ACCESS PATH. VEHICLE ACCESS INTERRUPTION SHALL BE COORDINATED WITH AND APPROVED BY OWNER.

BID SET

DRAWN BY: BDB JOB DATE: 2026 SCALE: ViewportScale
APPROVED: JPF JOB NUMBER: 2503420
CAD DATE: 9/9/2026 2:27 PM
CAD FILE: 2503420-G-SITE-G002.dwg

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FLOW EQUALIZATION IMPROVEMENTS
CITY OF MARSHALLTOWN
MARSHALLTOWN, IOWA

G-GENERAL
OVERALL SITE PLAN & GENERAL NOTES

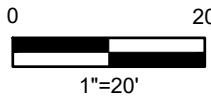
SHEET NO.
G.002

CIVIL LEGEND

	BENCHMARK, CONTROL POINT, ELEVATION INDICATOR		GAS METER
	CONCRETE MONUMENT		CURB INTAKE
	IRON PIN FOUND		HANDICAP
	IRON PIN SET		INTAKE
	OPEN PIPE		LIGHT POLE
	ROW RAIL		SANITARY MANHOLE
	SECTION CORNER		MONITORING WELL
	CHISELED X		POST
	AREA INTAKE		RAILROAD SIGN
	EXISTING FIRE HYDRANT		SOIL BORING
	PROPOSED FIRE HYDRANT		YARD LIGHT
	GUY WIRE		BURIED VALVE
	MAILBOX		PROPOSED WATER VALVE
	POWERPOLE		EXISTING WATER VALVE
	CONIFEROUS TREE		
	DECIDUOUS TREE		
	CORNER MONUMENT		
	CABLE BOX		
	CLEAN OUT		
	ELECTRIC METER		
	ELECTRIC BOX		



TRUE NORTH ARROW

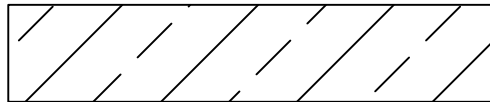


CIVIL SCALE BAR

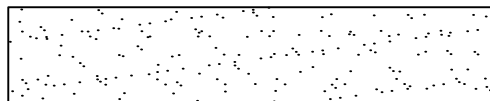
1 BLDG DETAIL OR SECTION

SCALE: TO SCALE

1 BLDG PLAN/DETAIL/SECTION
NOT TO SCALE OR CIVIL
NTS



PROPOSED PAVEMENT DEMOLITION



EXISTING GRAVEL



EXISTING PAVING

NOTE:

NOT ALL SYMBOLS SHOWN IN THESE LISTS MAY BE USED IN THIS PROJECT. CONTACT ENGINEER FOR CLARIFICATION OF ANY DISCREPANCIES.

UTILITY NOTES

WHERE PUBLIC UTILITY FIXTURES ARE SHOWN AS EXISTING ON THE PLANS OR ENCOUNTERED WITHIN THE CONSTRUCTION AREA, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE OWNERS OF THOSE UTILITIES PRIOR TO THE BEGINNING OF ANY CONSTRUCTION. THE CONTRACTOR SHALL AFFORD ACCESS TO THESE FACILITIES FOR NECESSARY MODIFICATION OF SERVICES. UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS AND RECORDS, AND THEREFORE THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. IT IS POSSIBLE THERE MAY BE OTHERS, THE EXISTENCE OF WHICH PRESENTLY NOT KNOWN OR SHOWN. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THEIR EXISTENCE AND EXACT LOCATION AND TO AVOID DAMAGE THERETO. NO CLAIMS FOR ADDITIONAL COMPENSATION WILL BE ALLOWED TO THE CONTRACTOR FOR ANY INTERFERENCE OR DELAY CAUSED BY SUCH WORK.

THE CONTRACTOR IS REQUIRED TO UTILIZE THE UTILITY ONE-CALL SERVICE AT (800) 292-8989 AT LEAST 48 HOURS PRIOR TO EXCAVATING ANYWHERE ON THE PROJECT.

	EXISTING AIR LINE
	EXISTING FENCE
	EXISTING ROW FENCE
	EXISTING GRAVEL SURFACE
	EXISTING SECTION LINE
	EXISTING UNDERGROUND TELEVISION
	EXISTING OVERHEAD ELECTRIC
	EXISTING UNDERGROUND ELECTRIC
	EXISTING FIBEROPTIC
	EXISTING GAS
	EXISTING SANITARY SEWER
	EXISTING STORM SEWER
	EXISTING UNDERGROUND TELEPHONE
	EXISTING MINOR CONTOUR
	EXISTING MAJOR CONTOUR
	EXISTING WATER
	EXISTING FLUSHING WATER
	EXISTING RIGHT OF WAY
	EXISTING PROPERTY LINE
	PROPOSED MINOR CONTOUR
	PROPOSED MAJOR CONTOUR
	TREE PROTECTION
	PROPOSED FENCE
	PROPOSED PERMANENT EASEMENT
	PROPOSED SILT FENCE
	PROPOSED TEMPORARY EASEMENT
	PROPOSED CULVERT
	DEMOLITION
	PROPOSED GAS LINE
	PROPOSED PLANT EFFLUENT WATER
	PROPOSED SANITARY SEWER
	PROPOSED STORM SEWER
	PROPOSED FIRE PROTECTION WATER
	PROPOSED POTABLE WATER
	PROPOSED POTABLE WATER
	PROPOSED CRUSHED STONE
	PROPOSED CONCRETE PAVING

CIVIL REQUIREMENTS:

- ALL SITE WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND APPLICABLE TECHNICAL SPECIFICATIONS UNLESS OTHERWISE NOTED. REFER TO THE TECHNICAL SPECIFICATIONS FOR MATERIAL, INSTALLATION, TESTING, AND OTHER REQUIREMENTS.
- CONTRACTOR SHALL ADJUST TO GRADE ALL VALVE BOXES AND MANHOLES THAT FALL WITHIN THE LIMITS OF THIS CONTRACT. CONTRACTOR SHALL KEEP ALL UTILITIES AND SEWERS FREE OF DEBRIS AND OPERABLE AT ALL TIMES DURING CONSTRUCTION.
- CONTRACTOR SHALL PROTECT EXISTING PAVEMENT, CURB AND GUTTER, SIDEWALKS, UTILITIES, STRUCTURES, EQUIPMENT, AND OTHER FACILITIES NOT DESIGNATED FOR MODIFICATION OR REMOVAL. FACILITIES DAMAGED BY CONTRACTOR'S OPERATIONS OR CONSTRUCTION TRAFFIC SHALL BE REPAIRED OR REPLACED AT NO ADDITIONAL COST TO THE CITY OF MARSHALLTOWN.
- UTILITY LOCATES - PLANT PROCESS PIPING: IOWA ONE CALL LOCATES COVER PUBLIC UTILITIES ONLY. THE PROJECT SITE CONTAINS EXTENSIVE PRIVATE PLANT PROCESS PIPING (AIR, RAS, PLANT WATER, SLUDGE, DRAIN, AND OTHER PROCESS LINES) NOT COVERED BY THE UTILITY LOCATE SERVICE. CONTRACTOR SHALL COORDINATE WITH THE CITY TO LOCATE AND FIELD MARK ALL EXISTING PLANT PROCESS PIPING WITHIN THE LIMITS OF CONSTRUCTION PRIOR TO EXCAVATION.
- CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD LOCATING AND HYDROEXCAVATING EXISTING UTILITIES WITHIN OR ADJACENT TO AREAS OF PROPOSED UNDERGROUND WORK AS NECESSARY TO VERIFY ACTUAL LOCATION, ELEVATION, SIZE, MATERIAL, AND CONFIGURATION. WHERE VERIFIED CONDITIONS AFFECT PIPE SIZE, FITTING GEOMETRY, OR OTHER MATERIALS TO BE ORDERED, HYDROEXCAVATION SHALL BE COMPLETED PRIOR TO ORDERING SUCH MATERIALS. COST OF ROUTINE LOCATING, HYDROEXCAVATION, EXPOSURE, SURVEY, PROTECTION, SUPPORT, AND ACCOMMODATION OF EXISTING UTILITIES SHALL BE INCLUDED IN THE CONTRACT PRICE.
- WHERE HYDROEXCAVATION OR UTILITY VERIFICATION POTHOLES ARE REQUIRED WITHIN EXISTING PAVEMENT, CONTRACTOR SHALL SAWCUT PAVEMENT AT NEAT LINES PRIOR TO EXCAVATION. WHERE PRACTICAL, CONTRACTOR SHALL LOCATE VERIFICATION POTHOLES TO COINCIDE WITH PLANNED EXCAVATION LIMITS SHOWN ON SHEET C.102 TO MINIMIZE ADDITIONAL PAVEMENT DISTURBANCE. POTHOLE LOCATIONS OUTSIDE THE PLANNED PERMANENT EXCAVATION LIMITS THAT WILL REMAIN OPEN TO TRAFFIC PRIOR TO FINAL RESTORATION SHALL BE TEMPORARILY PATCHED. PERMANENT PAVEMENT RESTORATION AT ALL HYDROEXCAVATION LOCATIONS SHALL CONFORM TO SPECIFICATIONS AND DETAILS, AND SHALL BE INCLUDED IN THE PAVEMENT JOINTING AND SEQUENCING PLAN.
- CONTRACTOR SHALL COMPLETE REQUIRED FIELD LOCATION, EXPOSURE, AND SURVEY OF EXISTING UTILITIES A MINIMUM OF TWO (2) WEEKS PRIOR TO THE AFFECTED WORK TO VERIFY CLEARANCE AND IDENTIFY POTENTIAL CONFLICTS. CONTRACTOR SHALL PROMPTLY REPORT CONFLICTS TO ENGINEER. FAILURE TO COMPLETE REQUIRED UTILITY VERIFICATION SUFFICIENTLY IN ADVANCE OF THE WORK SHALL NOT BE A BASIS FOR AN ADJUSTMENT TO CONTRACT TIMES. THIS FINAL VERIFICATION IS IN ADDITION TO, NOT A SUBSTITUTE FOR, THE MATERIAL-ORDERING VERIFICATION REQUIRED BY NOTE 5.
- EXISTING UTILITIES SHALL REMAIN IN SERVICE AND SHALL BE PROTECTED AND SUPPORTED DURING CONSTRUCTION UNLESS SPECIFICALLY INDICATED FOR REMOVAL OR RELOCATION. CONTRACTOR SHALL INCLUDE IN THE CONTRACT PRICE THE COST OF NORMAL MEANS AND METHODS NECESSARY TO EXCAVATE AROUND, CROSS, SUPPORT, AND PROTECT EXISTING UTILITIES IDENTIFIED OR REASONABLY INDICATED BY THE CONTRACT DOCUMENTS.
- CONTRACTOR SHALL VERIFY THE LOCATION, ELEVATION, SIZE, MATERIAL, AND JOINT TYPE OF EXISTING PIPING PRIOR TO ORDERING MATERIALS OR MAKING CONNECTIONS TO EXISTING PIPING. CONTRACTOR SHALL BE RESPONSIBLE FOR FLOW DIVERSION AND DEWATERING OF EXISTING PIPES AS REQUIRED TO COMPLETE CONNECTIONS.
- DEWATERING DISCHARGE: WHERE DEWATERING IS REQUIRED PER THE GEOTECHNICAL REPORT AND SHEET C.101, CONTRACTOR SHALL COORDINATE DISCHARGE LOCATION AND METHOD WITH THE CITY PRIOR TO COMMENCING DEWATERING. DISCHARGE OF SEDIMENT-LADEN WATER DIRECTLY TO GRADE, STORM SEWER, OR RECEIVING WATERS WILL NOT BE PERMITTED.
- CONTRACTOR SHALL MAINTAIN SERVICE FOR ALL RELOCATED OR AFFECTED UTILITIES EXCEPT DURING CITY-APPROVED SERVICE INTERRUPTIONS. CONTRACTOR SHALL COORDINATE UTILITY RELOCATIONS AND SERVICE INTERRUPTIONS WITH THE CITY AND PROVIDE A MINIMUM OF 72 HOURS' NOTICE PRIOR TO THE AFFECTED WORK. CONTRACTOR SHALL COMPLETE THE WORK IN A TIMELY MANNER TO MINIMIZE SERVICE DISRUPTION.
- CONTRACTOR SHALL COORDINATE WITH THE CITY AND PROVIDE A MINIMUM OF TWO (2) WEEKS' NOTICE FOR WORK THAT WILL IMPEDE PLANT TRAFFIC. CONTRACTOR SHALL PROVIDE BARRICADES AND OTHER TRAFFIC CONTROL NECESSARY TO CLOSE OR RESTRICT PARKING, SIDEWALK, AND ROAD AREAS AFFECTED BY CONSTRUCTION.
- CONTRACTOR SHALL MAINTAIN SAFE ACCESS FOR CITY OF MARSHALLTOWN OPERATORS AND STAFF AT ALL TIMES EXCEPT FOR TEMPORARY RESTRICTIONS SPECIFICALLY COORDINATED WITH AND APPROVED BY THE CITY.
- TIE-INS AND PLANT SHUTDOWNS: THE FACILITY SHALL REMAIN IN CONTINUOUS OPERATION THROUGHOUT CONSTRUCTION. WORK REQUIRING ISOLATION, SHUTDOWN, OR TIE-IN TO EXISTING PROCESS OR UTILITY SYSTEMS SHALL BE SCHEDULED AND COORDINATED WITH THE CITY A MINIMUM OF 14 DAYS IN ADVANCE. CONTRACTOR SHALL SUBMIT A SEQUENCING/SHUTDOWN PLAN FOR EACH TIE-IN FOR CITY AND ENGINEER REVIEW PRIOR TO THE WORK.
- CONTRACTOR SHALL FIELD SURVEY ALL EXISTING UTILITIES EXPOSED AS PART OF THE WORK AND ALL NEW UNDERGROUND UTILITIES INSTALLED UNDER THIS CONTRACT. FOR EXISTING UTILITIES, PROVIDE A SURVEY POINT AT EACH EXPOSED LOCATION. FOR NEW UTILITIES, PROVIDE A SURVEY POINT AT EACH FITTING, VALVE, AND AT MAXIMUM 50-FOOT INTERVALS ALONG STRAIGHT RUNS. FOR STRUCTURES, PROVIDE SURVEY POINTS AT EACH CORNER. PROVIDE X, Y, AND Z COORDINATES USING THE PROJECT HORIZONTAL AND VERTICAL DATUMS.
- PROVIDE EXISTING AND NEW UTILITY AND STRUCTURE SURVEY INFORMATION IN A SINGLE CAD FILE COMPATIBLE WITH AUTOCAD OR AS OTHERWISE COORDINATED WITH THE CITY/ENGINEER. ALSO PROVIDE SURVEY POINTS IN ASCII TEXT OR CSV FORMAT INCLUDING, AT MINIMUM, POINT NUMBER, NORTHING, EASTING, ELEVATION, AND DESCRIPTION. DESCRIPTIONS SHALL CLEARLY IDENTIFY UTILITY OR STRUCTURE SIZE, TYPE, MATERIAL, AND OTHER RELEVANT INFORMATION. PROVIDE SEPARATE CAD LAYERS FOR EACH UTILITY TYPE.

BID SET

DRAWN BY: BDB	JOB DATE: 2026	SCALE: ViewportScale
APPROVED: Value	JOB NUMBER: 2503420	
CAD DATE: 8/19/2026 3:27 PM		
CAD FILE: 2503420-C-LEGEND-C000.dwg		

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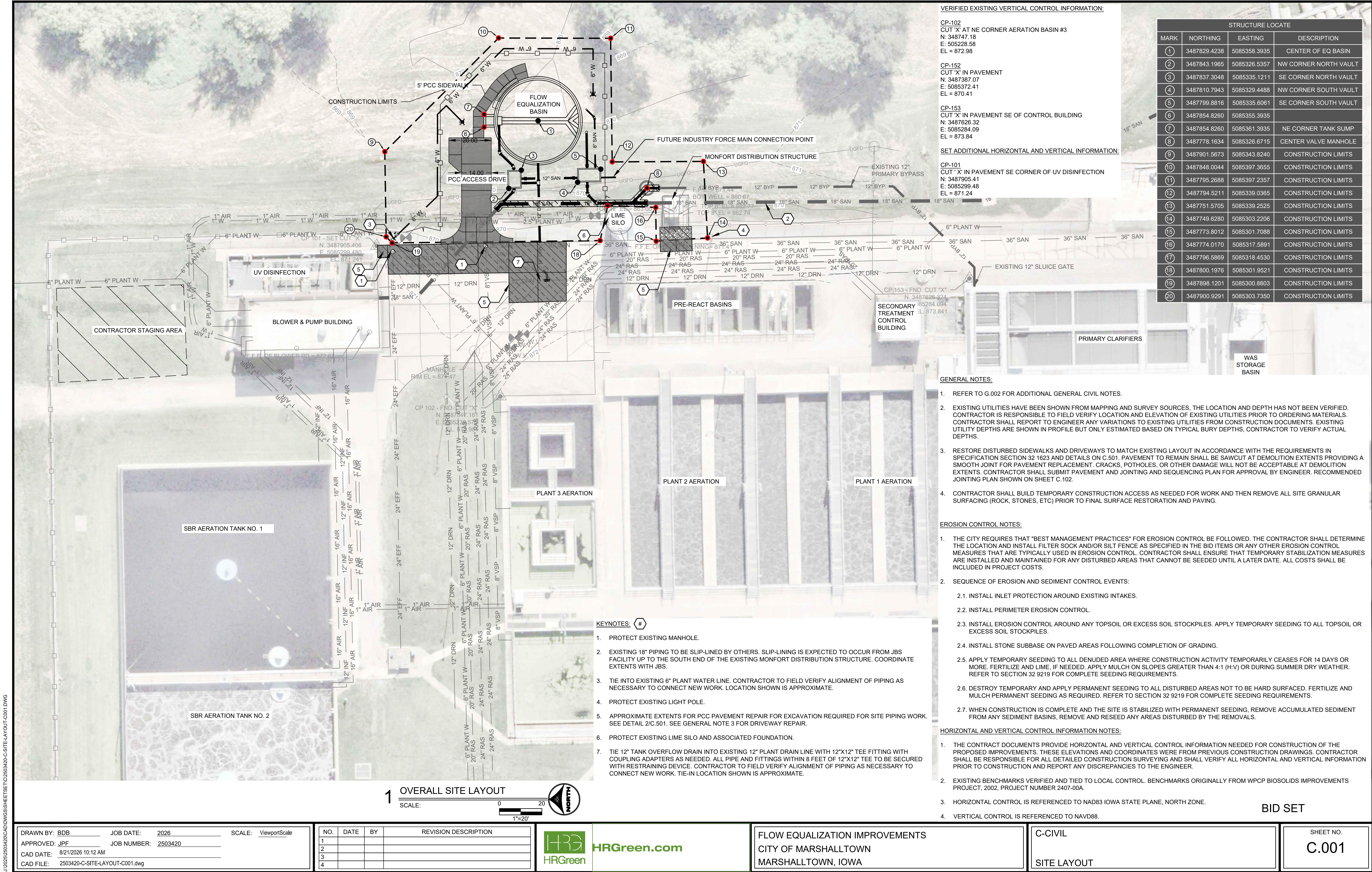
FLOW EQUALIZATION IMPROVEMENTS
CITY OF MARSHALLTOWN
MARSHALLTOWN, IOWA

C-CIVIL

CIVIL LEGEND

SHEET NO.
C.000

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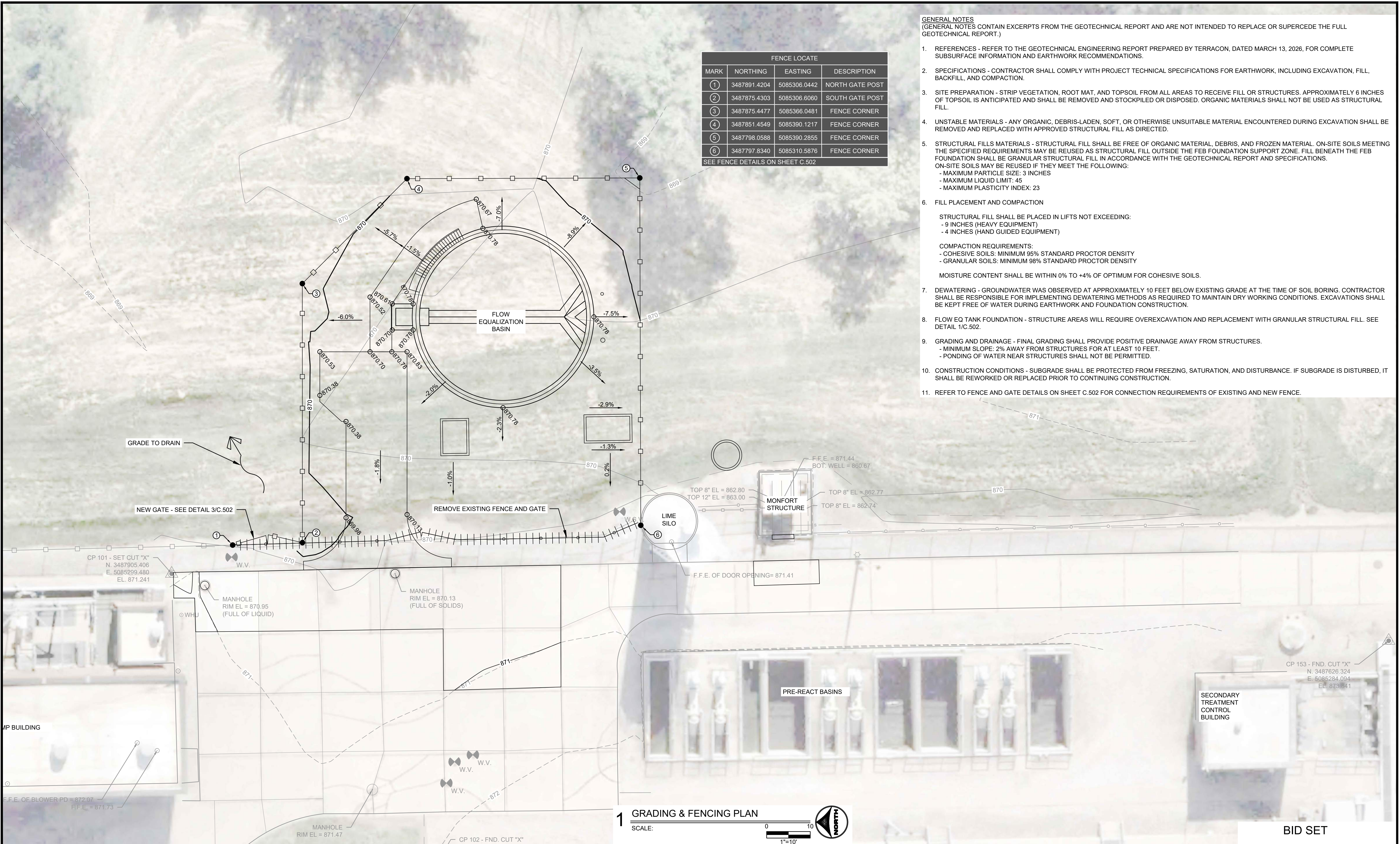


FLOW EQUALIZATION IMPROVEMENTS
CITY OF MARSHALLTOWN
MARSHALLTOWN, IOWA

C-CIVIL
SITE LAYOUT

SHEET NO.
C.001

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FENCE LOCATE			
MARK	NORTHING	EASTING	DESCRIPTION
①	3487891.4204	5085306.0442	NORTH GATE POST
②	3487875.4303	5085306.6060	SOUTH GATE POST
③	3487875.4477	5085366.0481	FENCE CORNER
④	3487851.4549	5085390.1217	FENCE CORNER
⑤	3487798.0588	5085390.2855	FENCE CORNER
⑥	3487797.8340	5085310.5876	FENCE CORNER
SEE FENCE DETAILS ON SHEET C.502			

- GENERAL NOTES**
(GENERAL NOTES CONTAIN EXCERPTS FROM THE GEOTECHNICAL REPORT AND ARE NOT INTENDED TO REPLACE OR SUPERCEDE THE FULL GEOTECHNICAL REPORT.)
- REFERENCES - REFER TO THE GEOTECHNICAL ENGINEERING REPORT PREPARED BY TERRACON, DATED MARCH 13, 2026, FOR COMPLETE SUBSURFACE INFORMATION AND EARTHWORK RECOMMENDATIONS.
 - SPECIFICATIONS - CONTRACTOR SHALL COMPLY WITH PROJECT TECHNICAL SPECIFICATIONS FOR EARTHWORK, INCLUDING EXCAVATION, FILL, BACKFILL, AND COMPACTION.
 - SITE PREPARATION - STRIP VEGETATION, ROOT MAT, AND TOPSOIL FROM ALL AREAS TO RECEIVE FILL OR STRUCTURES. APPROXIMATELY 6 INCHES OF TOPSOIL IS ANTICIPATED AND SHALL BE REMOVED AND STOCKPILED OR DISPOSED. ORGANIC MATERIALS SHALL NOT BE USED AS STRUCTURAL FILL.
 - UNSTABLE MATERIALS - ANY ORGANIC, DEBRIS-LADEN, SOFT, OR OTHERWISE UNSUITABLE MATERIAL ENCOUNTERED DURING EXCAVATION SHALL BE REMOVED AND REPLACED WITH APPROVED STRUCTURAL FILL AS DIRECTED.
 - STRUCTURAL FILLS MATERIALS - STRUCTURAL FILL SHALL BE FREE OF ORGANIC MATERIAL, DEBRIS, AND FROZEN MATERIAL. ON-SITE SOILS MEETING THE SPECIFIED REQUIREMENTS MAY BE REUSED AS STRUCTURAL FILL OUTSIDE THE FEB FOUNDATION SUPPORT ZONE. FILL BENEATH THE FEB FOUNDATION SHALL BE GRANULAR STRUCTURAL FILL IN ACCORDANCE WITH THE GEOTECHNICAL REPORT AND SPECIFICATIONS. ON-SITE SOILS MAY BE REUSED IF THEY MEET THE FOLLOWING:
 - MAXIMUM PARTICLE SIZE: 3 INCHES
 - MAXIMUM LIQUID LIMIT: 45
 - MAXIMUM PLASTICITY INDEX: 23
 - FILL PLACEMENT AND COMPACTION
 - STRUCTURAL FILL SHALL BE PLACED IN LIFTS NOT EXCEEDING:
 - 9 INCHES (HEAVY EQUIPMENT)
 - 4 INCHES (HAND GUIDED EQUIPMENT)
 - COMPACTION REQUIREMENTS:
 - COHESIVE SOILS: MINIMUM 95% STANDARD PROCTOR DENSITY
 - GRANULAR SOILS: MINIMUM 98% STANDARD PROCTOR DENSITY
 - MOISTURE CONTENT SHALL BE WITHIN 0% TO +4% OF OPTIMUM FOR COHESIVE SOILS.
 - DEWATERING - GROUNDWATER WAS OBSERVED AT APPROXIMATELY 10 FEET BELOW EXISTING GRADE AT THE TIME OF SOIL BORING. CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING DEWATERING METHODS AS REQUIRED TO MAINTAIN DRY WORKING CONDITIONS. EXCAVATIONS SHALL BE KEPT FREE OF WATER DURING EARTHWORK AND FOUNDATION CONSTRUCTION.
 - FLOW EQ TANK FOUNDATION - STRUCTURE AREAS WILL REQUIRE OVEREXCAVATION AND REPLACEMENT WITH GRANULAR STRUCTURAL FILL. SEE DETAIL 1/C.502.
 - GRADING AND DRAINAGE - FINAL GRADING SHALL PROVIDE POSITIVE DRAINAGE AWAY FROM STRUCTURES.
 - MINIMUM SLOPE: 2% AWAY FROM STRUCTURES FOR AT LEAST 10 FEET.
 - PONDING OF WATER NEAR STRUCTURES SHALL NOT BE PERMITTED.
 - CONSTRUCTION CONDITIONS - SUBGRADE SHALL BE PROTECTED FROM FREEZING, SATURATION, AND DISTURBANCE. IF SUBGRADE IS DISTURBED, IT SHALL BE REWORKED OR REPLACED PRIOR TO CONTINUING CONSTRUCTION.
 - REFER TO FENCE AND GATE DETAILS ON SHEET C.502 FOR CONNECTION REQUIREMENTS OF EXISTING AND NEW FENCE.

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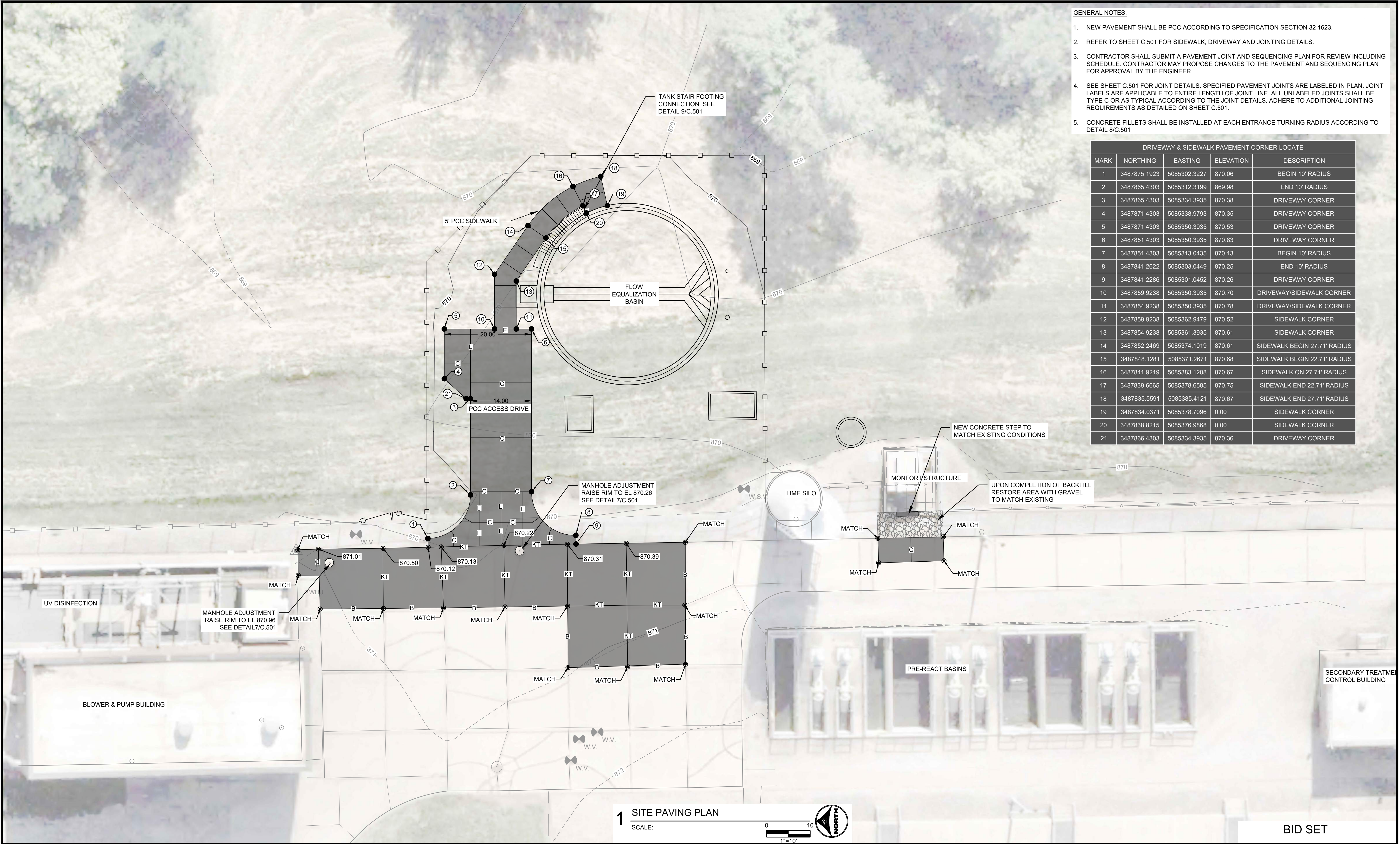


FLOW EQUALIZATION IMPROVEMENTS
CITY OF MARSHALLTOWN
MARSHALLTOWN, IOWA

C-CIVIL
GRADING & FENCING PLAN

SHEET NO.
C.101

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1 SITE PAVING PLAN

SCALE: 1"=10'

DRAWN BY: BDB

JOB DATE: 2026

SCALE: ViewportScale

APPROVED: Value

JOB NUMBER: 2503420

CAD DATE: 8/21/2026 1:45 PM

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FLOW EQUALIZATION IMPROVEMENTS

CITY OF MARSHALLTOWN

MARSHALLTOWN, IOWA

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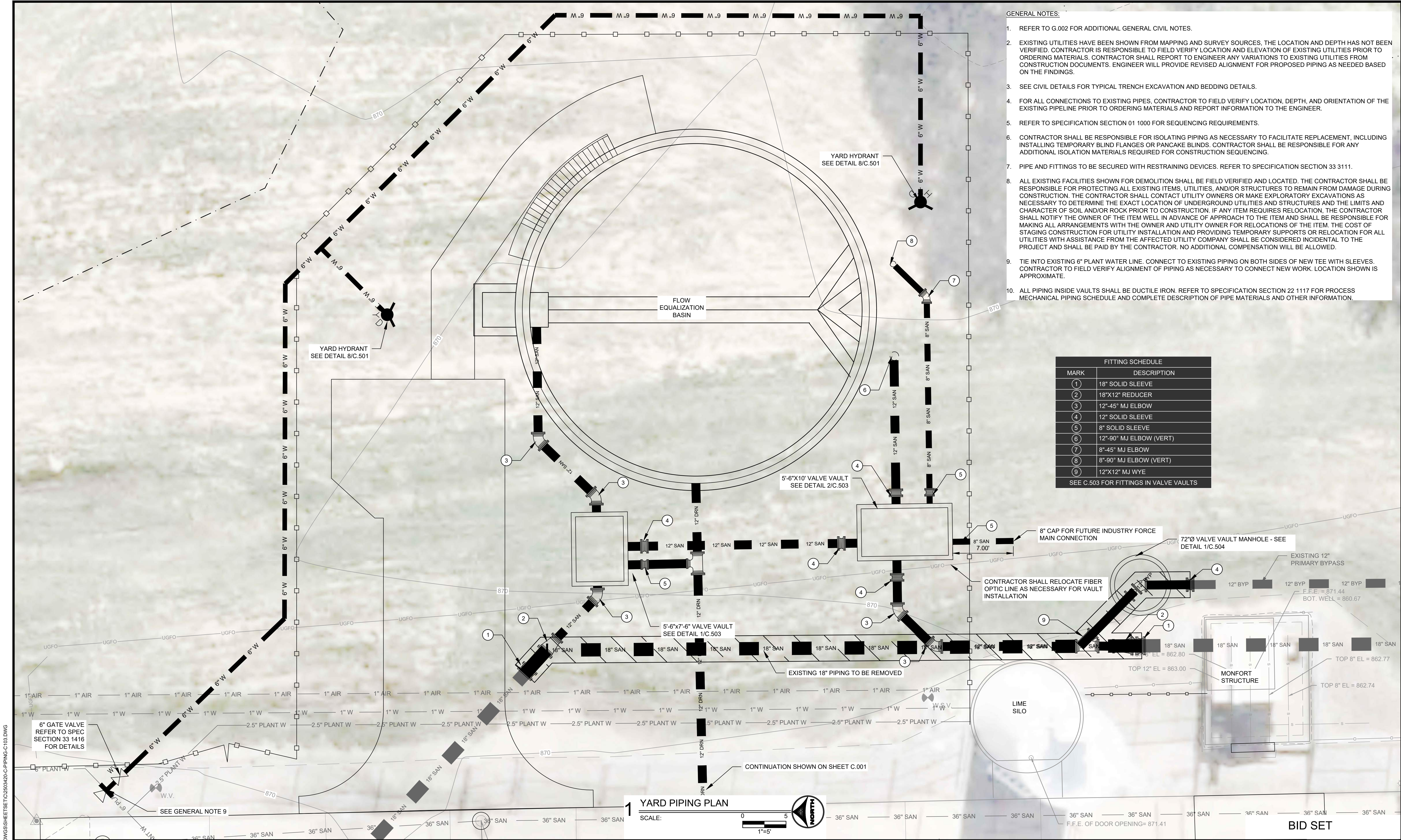
C-CIVIL

SITE PAVING PLAN

SHEET NO.

C.102

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GENERAL NOTES:

1. REFER TO G.002 FOR ADDITIONAL GENERAL CIVIL NOTES.
2. EXISTING UTILITIES HAVE BEEN SHOWN FROM MAPPING AND SURVEY SOURCES, THE LOCATION AND DEPTH HAS NOT BEEN VERIFIED. CONTRACTOR IS RESPONSIBLE TO FIELD VERIFY LOCATION AND ELEVATION OF EXISTING UTILITIES PRIOR TO ORDERING MATERIALS. CONTRACTOR SHALL REPORT TO ENGINEER ANY VARIATIONS TO EXISTING UTILITIES FROM CONSTRUCTION DOCUMENTS. ENGINEER WILL PROVIDE REVISED ALIGNMENT FOR PROPOSED PIPING AS NEEDED BASED ON THE FINDINGS.
3. SEE CIVIL DETAILS FOR TYPICAL TRENCH EXCAVATION AND BEDDING DETAILS.
4. FOR ALL CONNECTIONS TO EXISTING PIPES, CONTRACTOR TO FIELD VERIFY LOCATION, DEPTH, AND ORIENTATION OF THE EXISTING PIPELINE PRIOR TO ORDERING MATERIALS AND REPORT INFORMATION TO THE ENGINEER.
5. REFER TO SPECIFICATION SECTION 01 1000 FOR SEQUENCING REQUIREMENTS.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR ISOLATING PIPING AS NECESSARY TO FACILITATE REPLACEMENT, INCLUDING INSTALLING TEMPORARY BLIND FLANGES OR PANCAKE BLINDS. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY ADDITIONAL ISOLATION MATERIALS REQUIRED FOR CONSTRUCTION SEQUENCING.
7. PIPE AND FITTINGS TO BE SECURED WITH RESTRAINING DEVICES. REFER TO SPECIFICATION SECTION 33 3111.
8. ALL EXISTING FACILITIES SHOWN FOR DEMOLITION SHALL BE FIELD VERIFIED AND LOCATED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING ITEMS, UTILITIES, AND/OR STRUCTURES TO REMAIN FROM DAMAGE DURING CONSTRUCTION. THE CONTRACTOR SHALL CONTACT UTILITY OWNERS OR MAKE EXPLORATORY EXCAVATIONS AS NECESSARY TO DETERMINE THE EXACT LOCATION OF UNDERGROUND UTILITIES AND STRUCTURES AND THE LIMITS AND CHARACTER OF SOIL AND/OR ROCK PRIOR TO CONSTRUCTION. IF ANY ITEM REQUIRES RELOCATION, THE CONTRACTOR SHALL NOTIFY THE OWNER OF THE ITEM WELL IN ADVANCE OF APPROACH TO THE ITEM AND SHALL BE RESPONSIBLE FOR MAKING ALL ARRANGEMENTS WITH THE OWNER AND UTILITY OWNER FOR RELOCATIONS OF THE ITEM. THE COST OF STAGING CONSTRUCTION FOR UTILITY INSTALLATION AND PROVIDING TEMPORARY SUPPORTS OR RELOCATION FOR ALL UTILITIES WITH ASSISTANCE FROM THE AFFECTED UTILITY COMPANY SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT AND SHALL BE PAID BY THE CONTRACTOR. NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
9. TIE INTO EXISTING 6" PLANT WATER LINE. CONNECT TO EXISTING PIPING ON BOTH SIDES OF NEW TEE WITH SLEEVES. CONTRACTOR TO FIELD VERIFY ALIGNMENT OF PIPING AS NECESSARY TO CONNECT NEW WORK. LOCATION SHOWN IS APPROXIMATE.
10. ALL PIPING INSIDE VAULTS SHALL BE DUCTILE IRON. REFER TO SPECIFICATION SECTION 22 1117 FOR PROCESS MECHANICAL PIPING SCHEDULE AND COMPLETE DESCRIPTION OF PIPE MATERIALS AND OTHER INFORMATION.

FITTING SCHEDULE	
MARK	DESCRIPTION
①	18" SOLID SLEEVE
②	18"x12" REDUCER
③	12"-45" MJ ELBOW
④	12" SOLID SLEEVE
⑤	8" SOLID SLEEVE
⑥	12"-90" MJ ELBOW (VERT)
⑦	8"-45" MJ ELBOW
⑧	8"-90" MJ ELBOW (VERT)
⑨	12"x12" MJ WYE
SEE C.503 FOR FITTINGS IN VALVE VAULTS	

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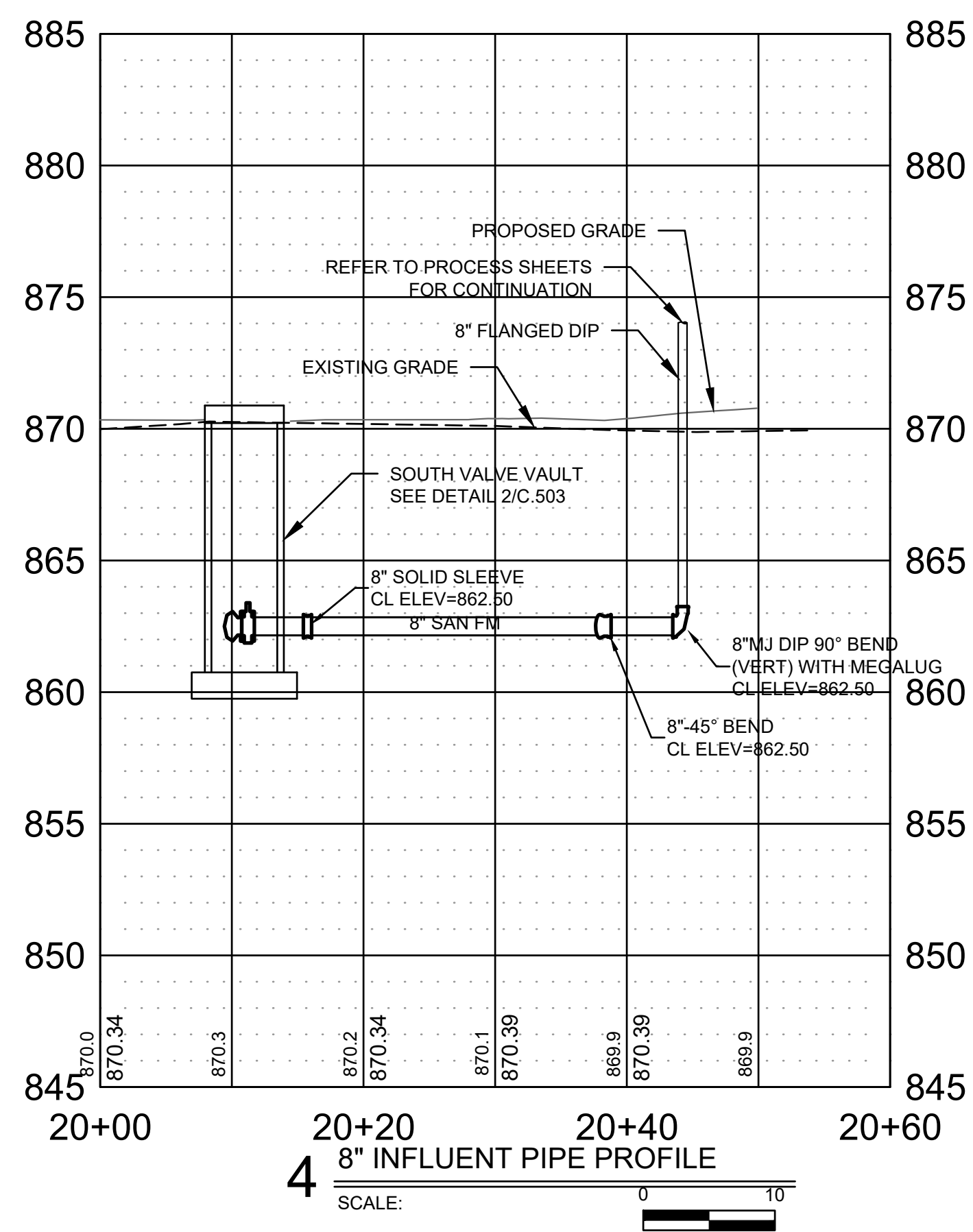
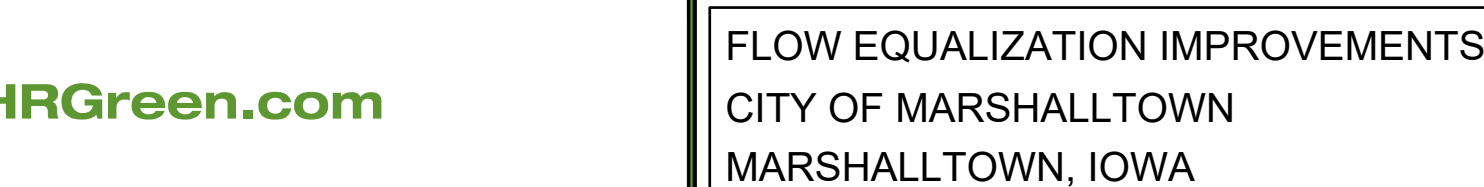
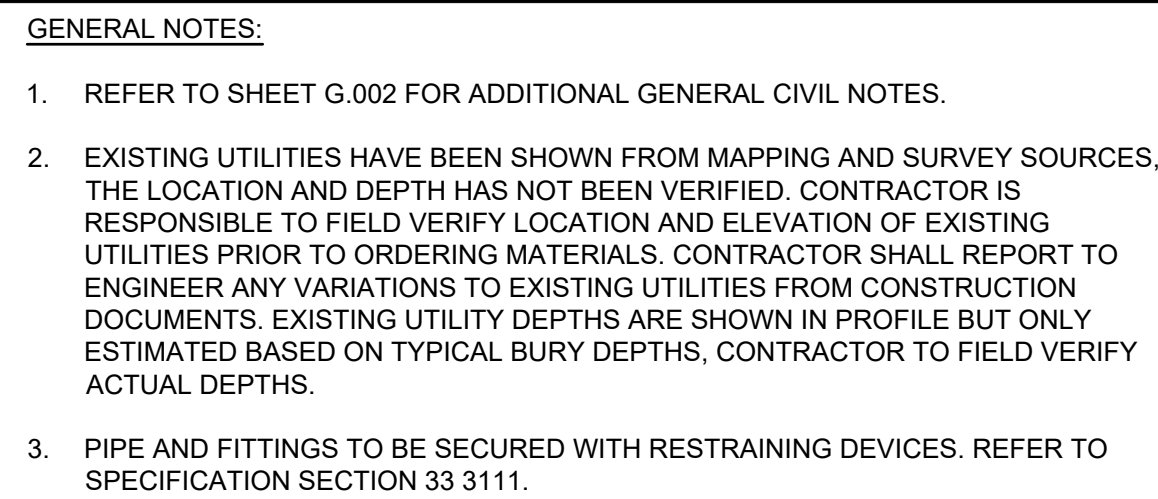
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MARSHALLTOWN, IOWA

C-CIVIL

YARD PIPING PLAN

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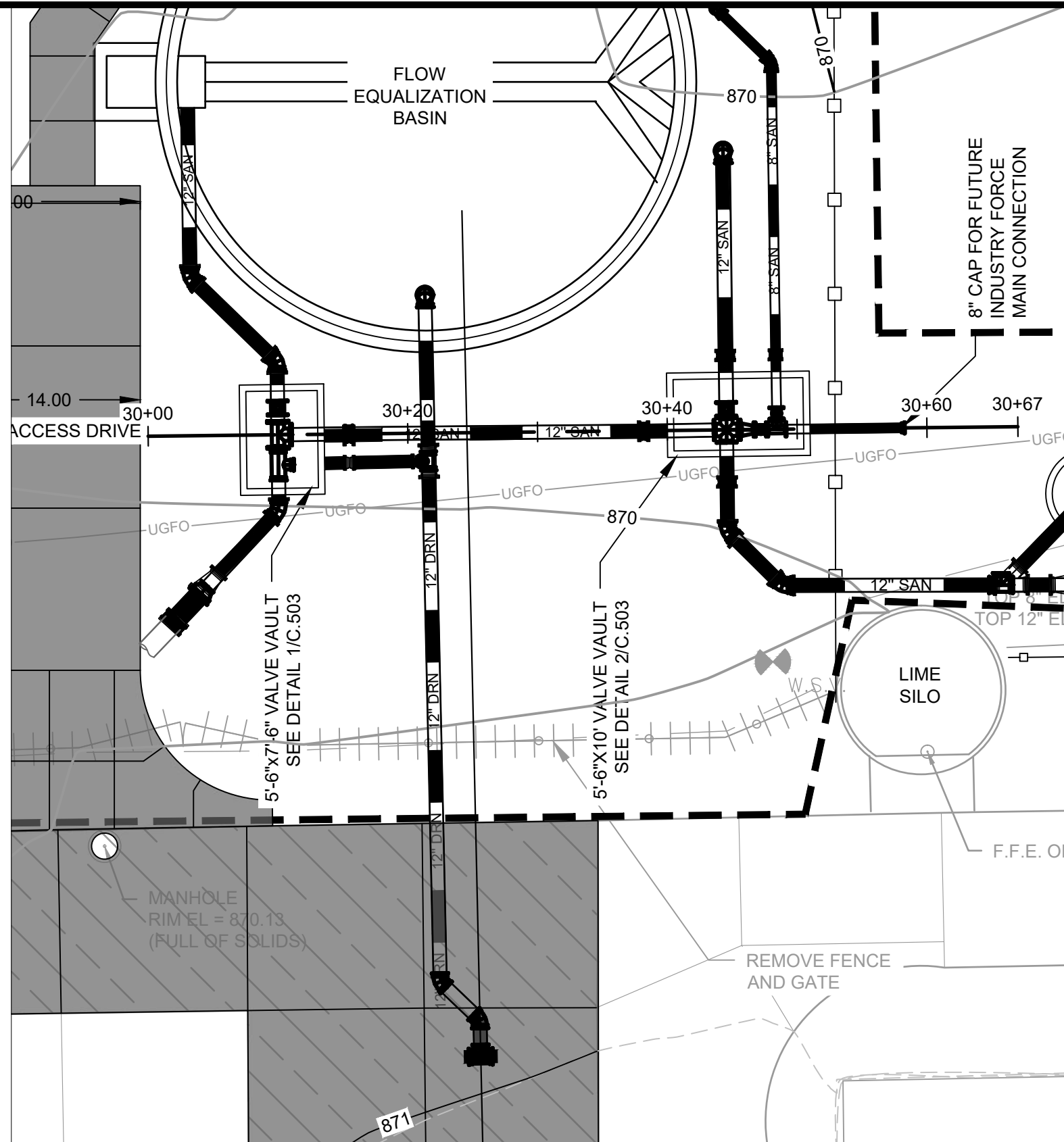
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CITY OF MARSHALLTOWN
MARSHALLTOWN, IOWA

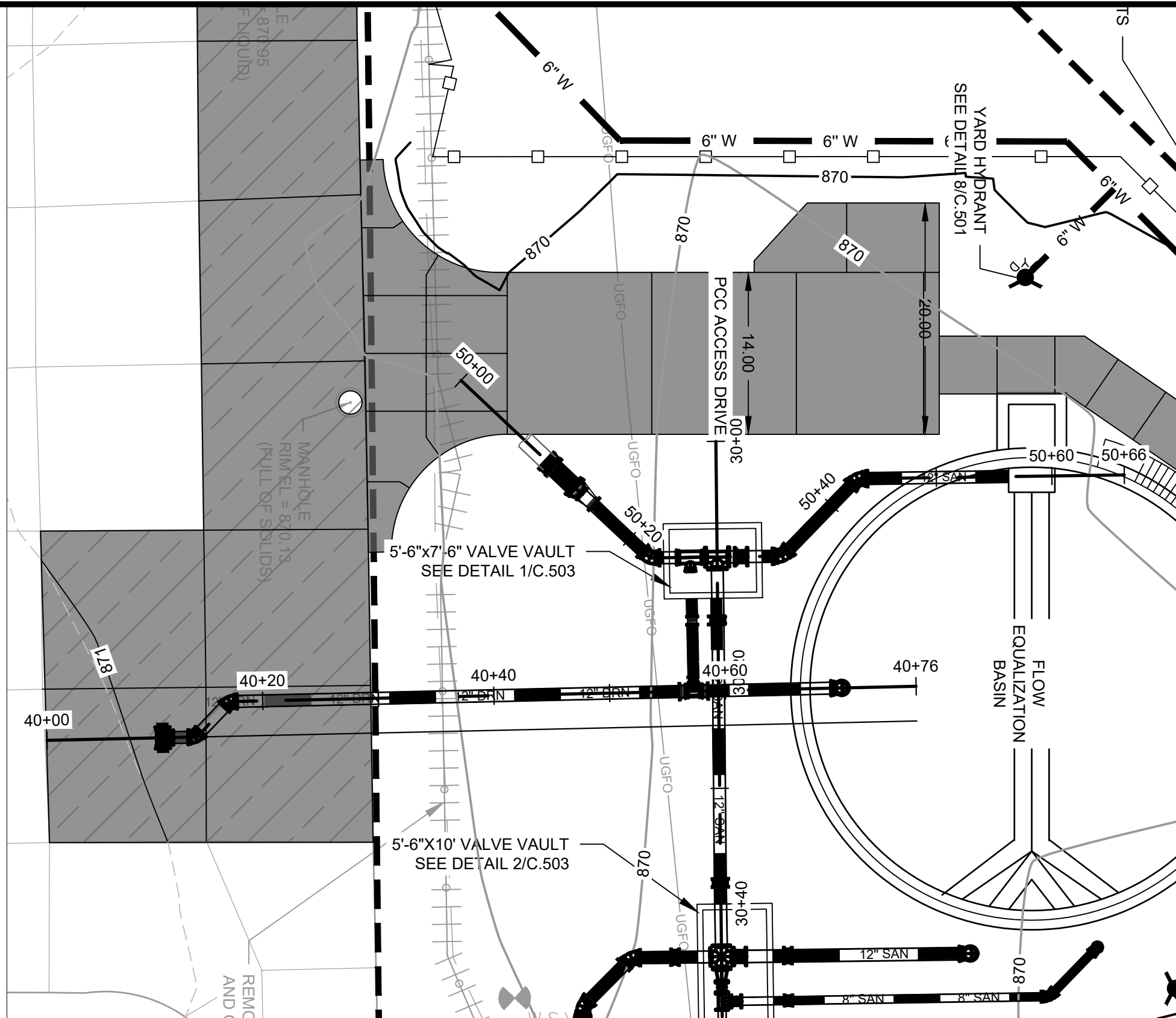
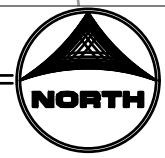
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INFLUENT PIPING PROFILES

SHEET NO.
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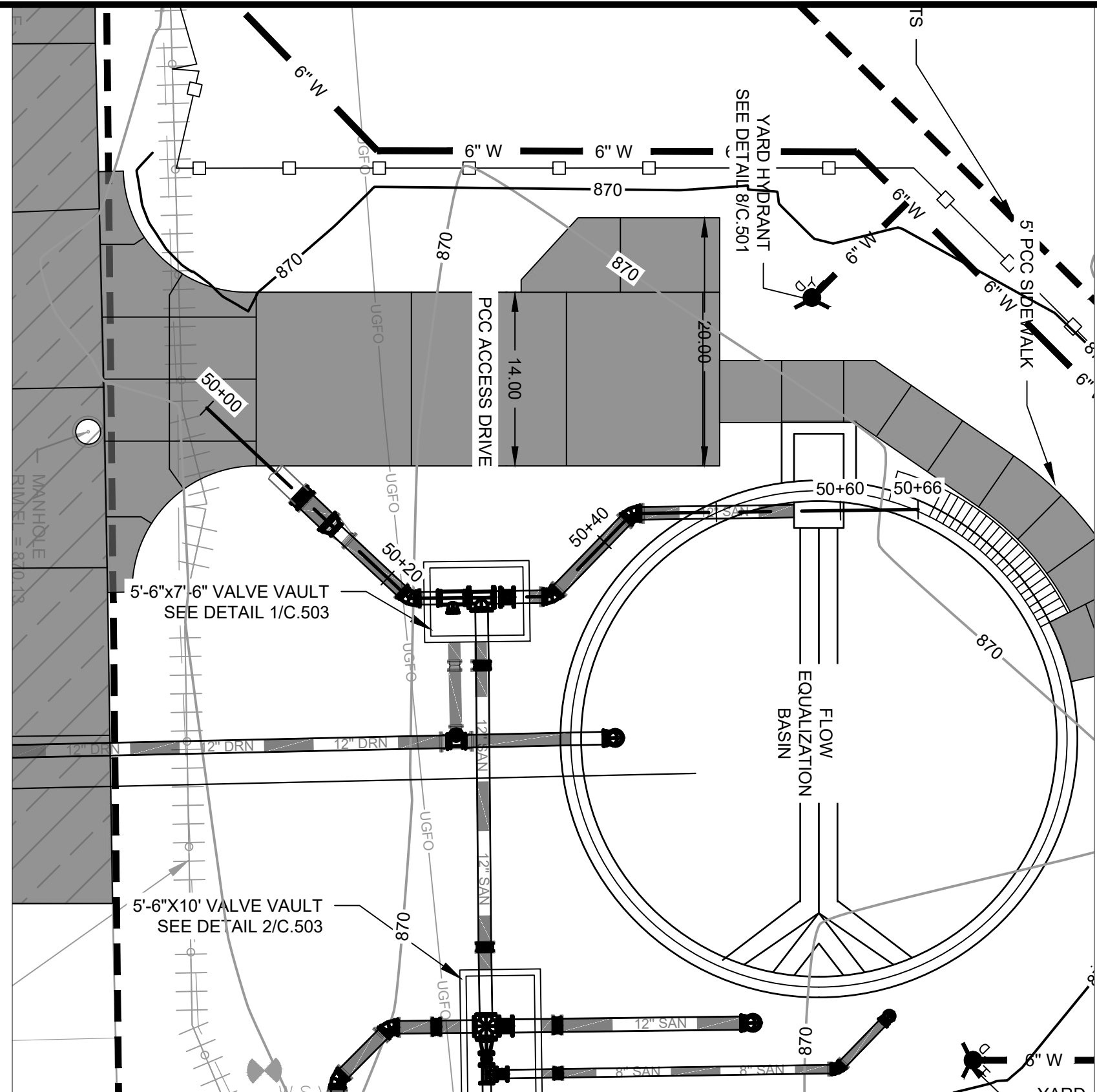
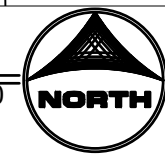
1 12" BYPASS PIPE PLAN

SCALE: 0 10
1" = 10'



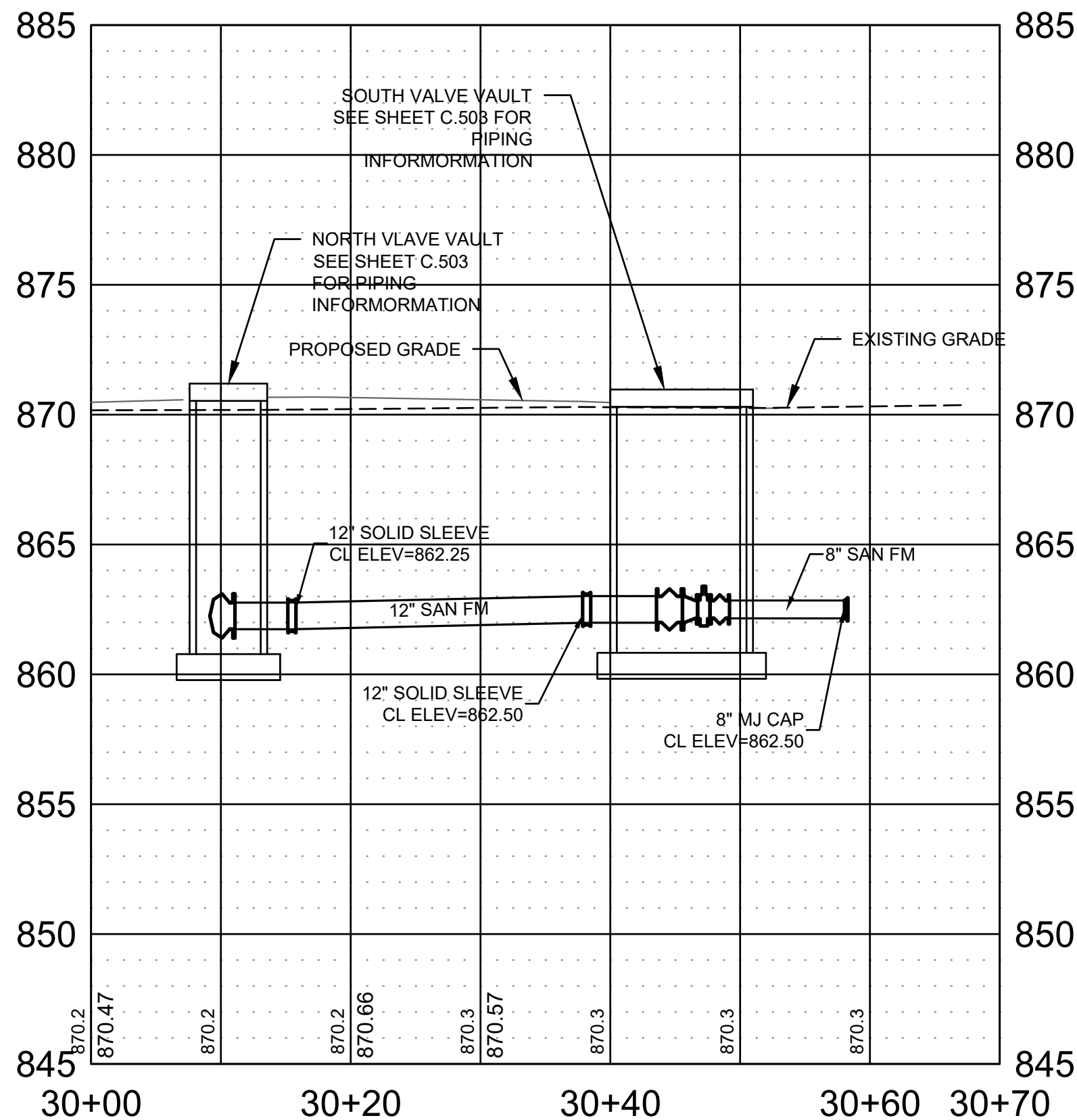
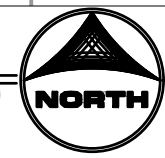
3 12" DRAIN PIPE PLAN

SCALE: 0 10
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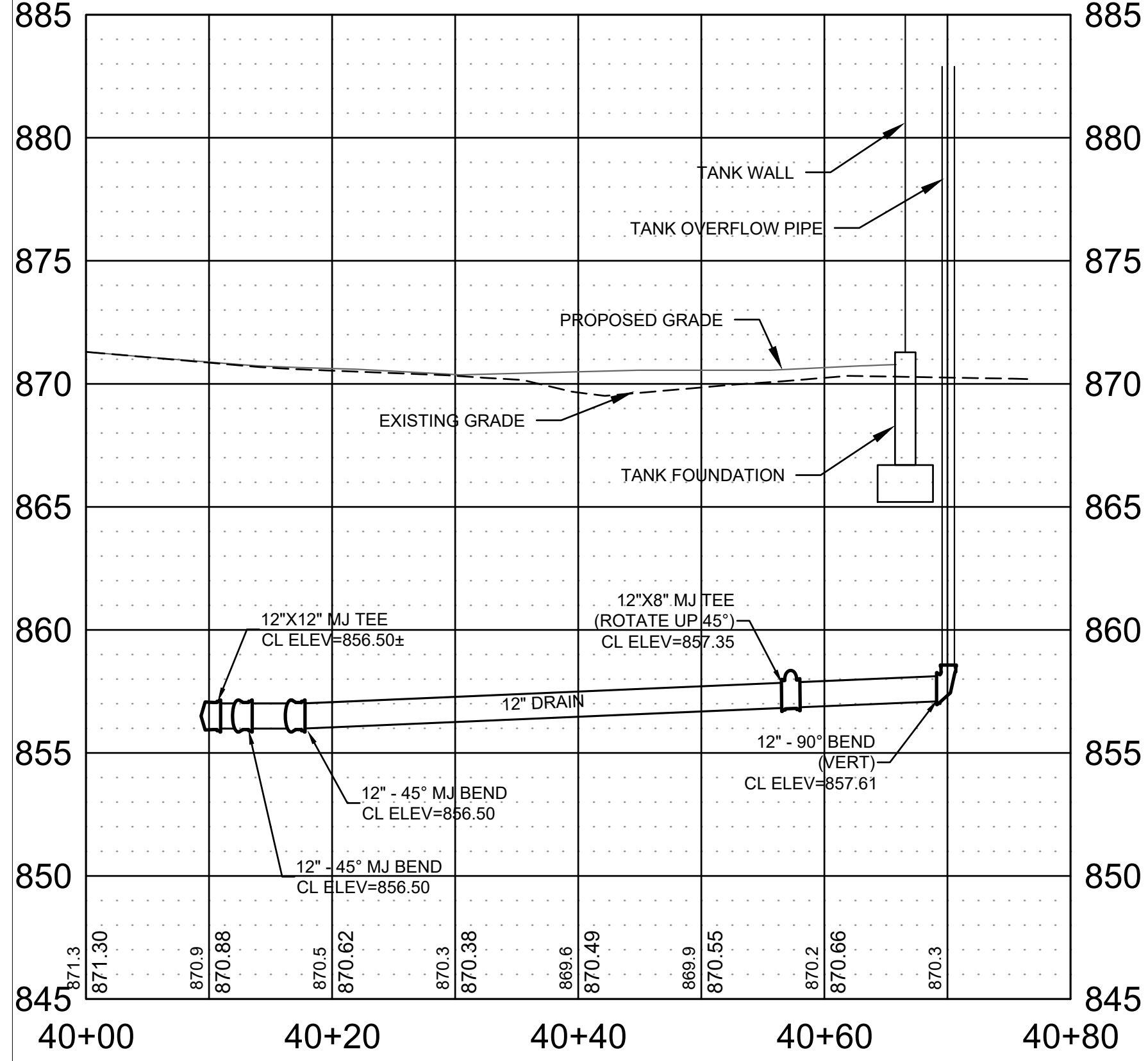
5 12" EFFLUENT PIPE PLAN

SCALE: 0 10
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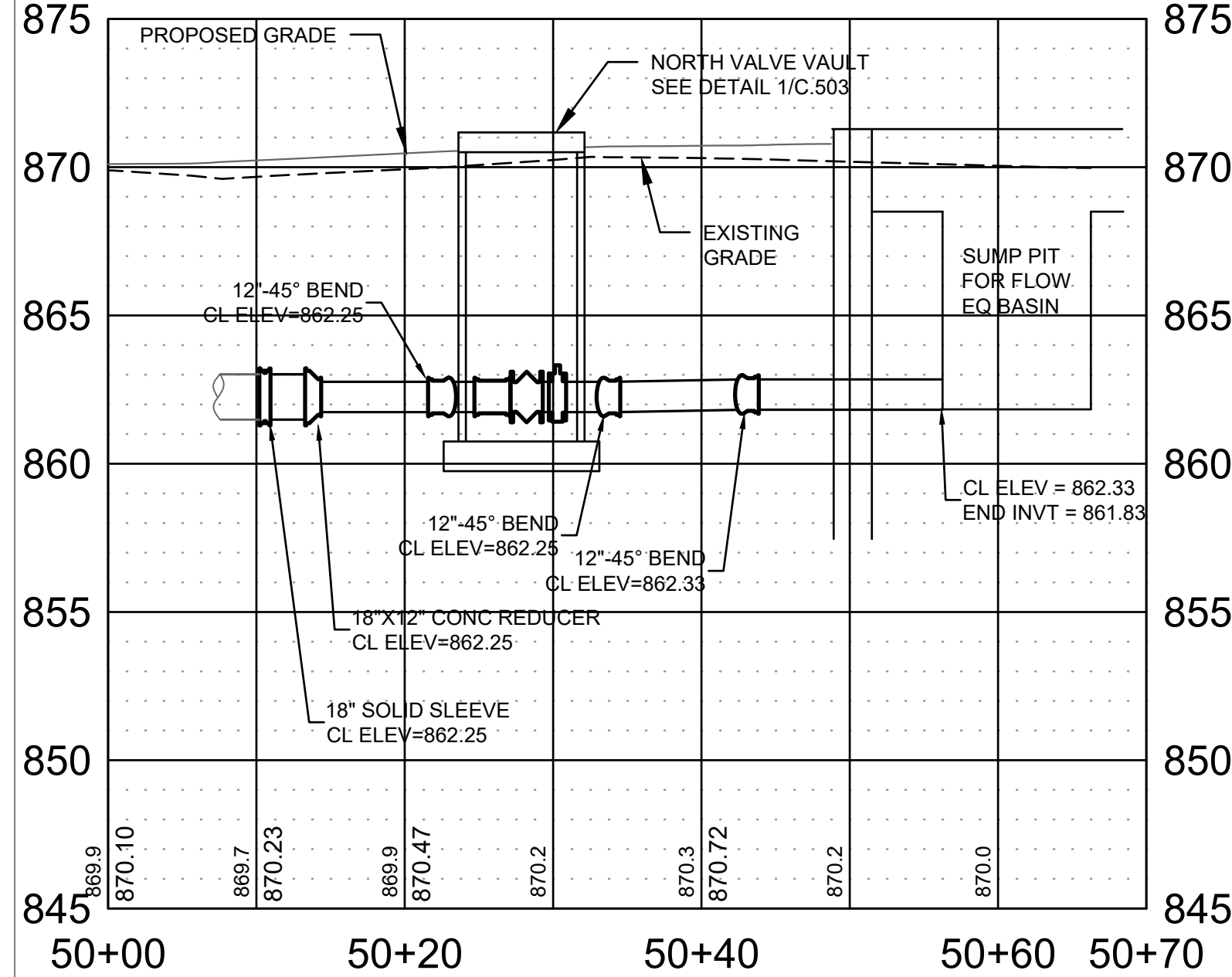
2 12" BYPASS PIPE PROFILE

SCALE: 0 10
1" = 10'



4 12" DRAIN PIPE PROFILE

SCALE: 0 10
1" = 10'



6 12" EFFLUENT PIPE PROFILE

SCALE: 0 10
1" = 10'

GENERAL NOTES:

- REFER TO SHEET G.002 FOR ADDITIONAL GENERAL CIVIL NOTES.
- EXISTING UTILITIES HAVE BEEN SHOWN FROM MAPPING AND SURVEY SOURCES. THE LOCATION AND DEPTH HAS NOT BEEN VERIFIED. CONTRACTOR IS RESPONSIBLE TO FIELD VERIFY LOCATION AND ELEVATION OF EXISTING UTILITIES PRIOR TO ORDERING MATERIALS. CONTRACTOR SHALL REPORT TO ENGINEER ANY VARIATIONS TO EXISTING UTILITIES FROM CONSTRUCTION DOCUMENTS. EXISTING UTILITY DEPTHS ARE SHOWN IN PROFILE BUT ONLY ESTIMATED BASED ON TYPICAL BURY DEPTHS. CONTRACTOR TO FIELD VERIFY ACTUAL DEPTHS.
- PIPE AND FITTINGS TO BE SECURED WITH RESTRAINING DEVICES. REFER TO SPECIFICATION SECTION 33.3111.

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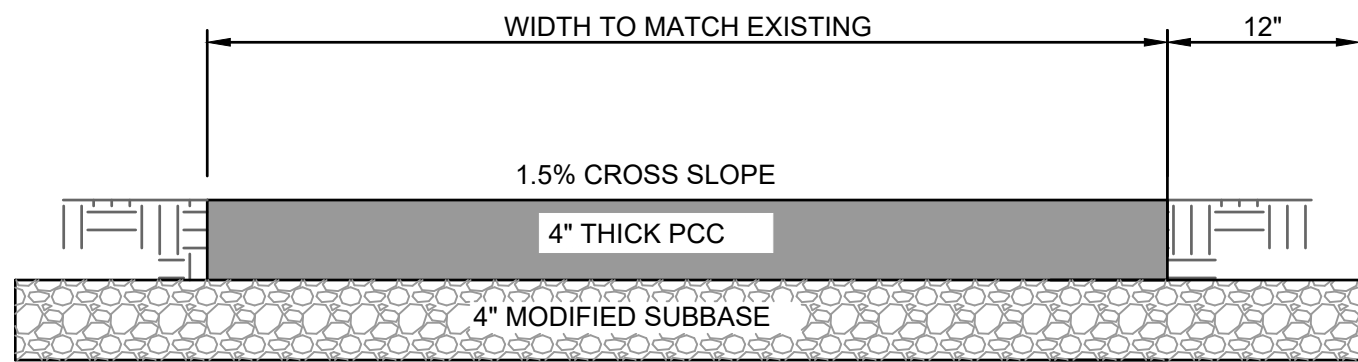
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CITY OF MARSHALLTOWN
MARSHALLTOWN, IOWA

C-CIVIL
EFFLUENT PIPE PROFILE

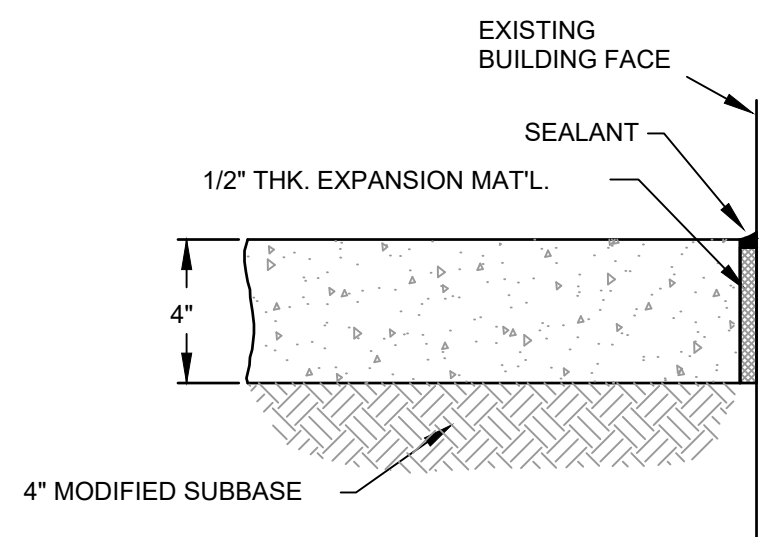
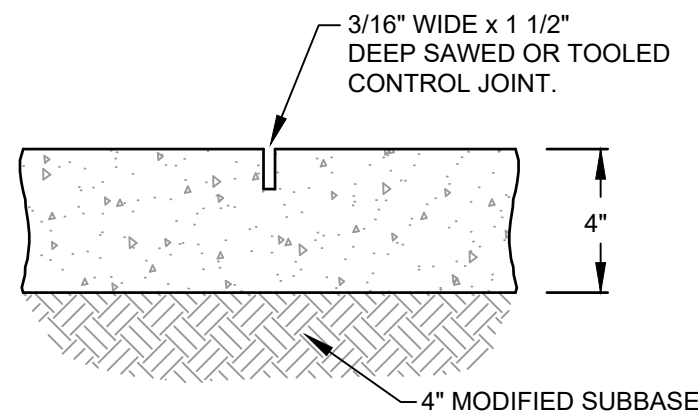
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1 PCC SIDEWALK DETAIL

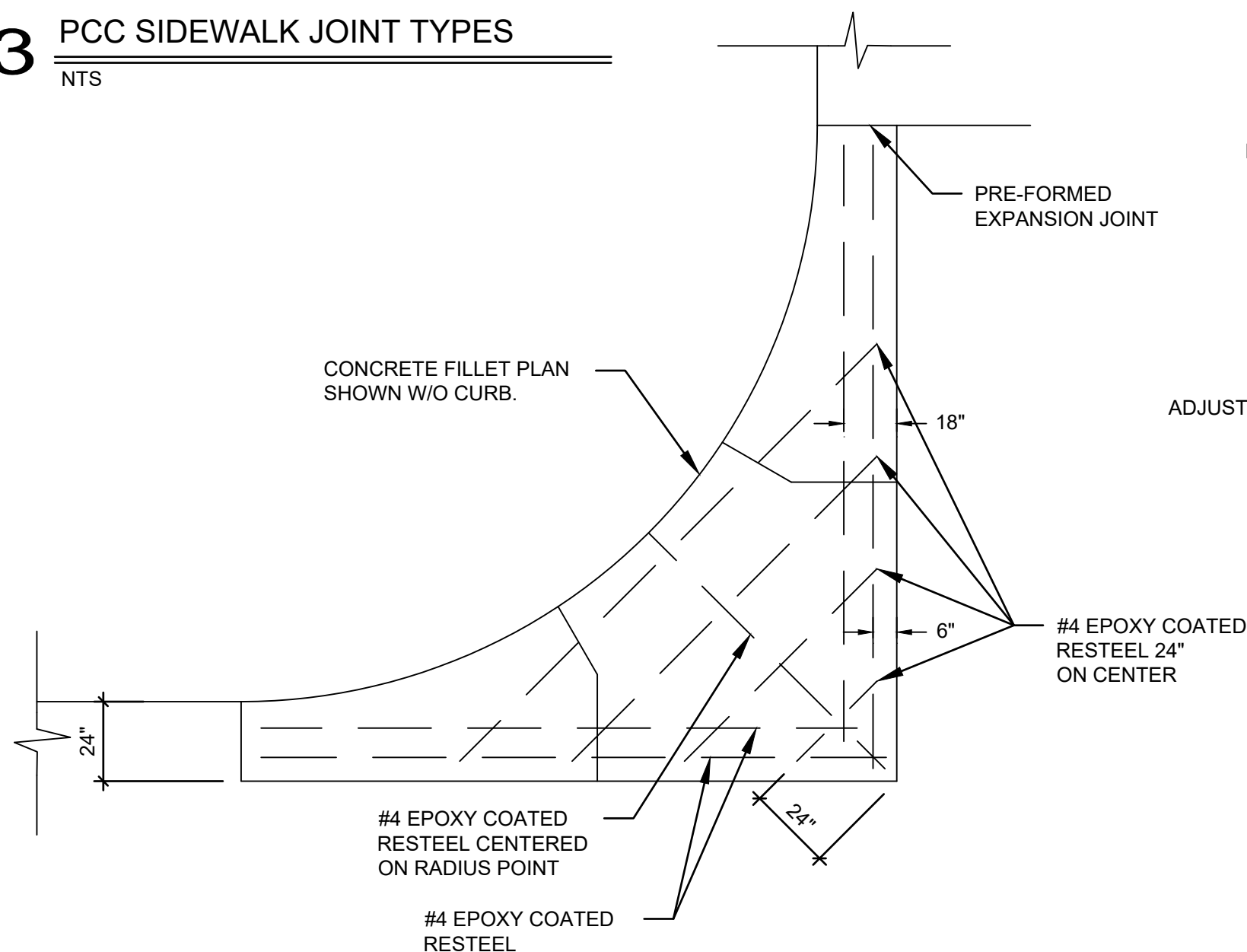
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- NOTE:
1. SIDEWALKS SHALL BE SLOPED TO DRAIN AND MATCH SLOPE OF ADJACENT SIDEWALK. REFER TO SPECIFICATION SECTION 32 1623 FOR COMPLETE REQUIREMENTS
 2. REFER TO SPECIFICATION SECTION 32 1623 FOR COMPLETE REQUIREMENTS



3 PCC SIDEWALK JOINT TYPES

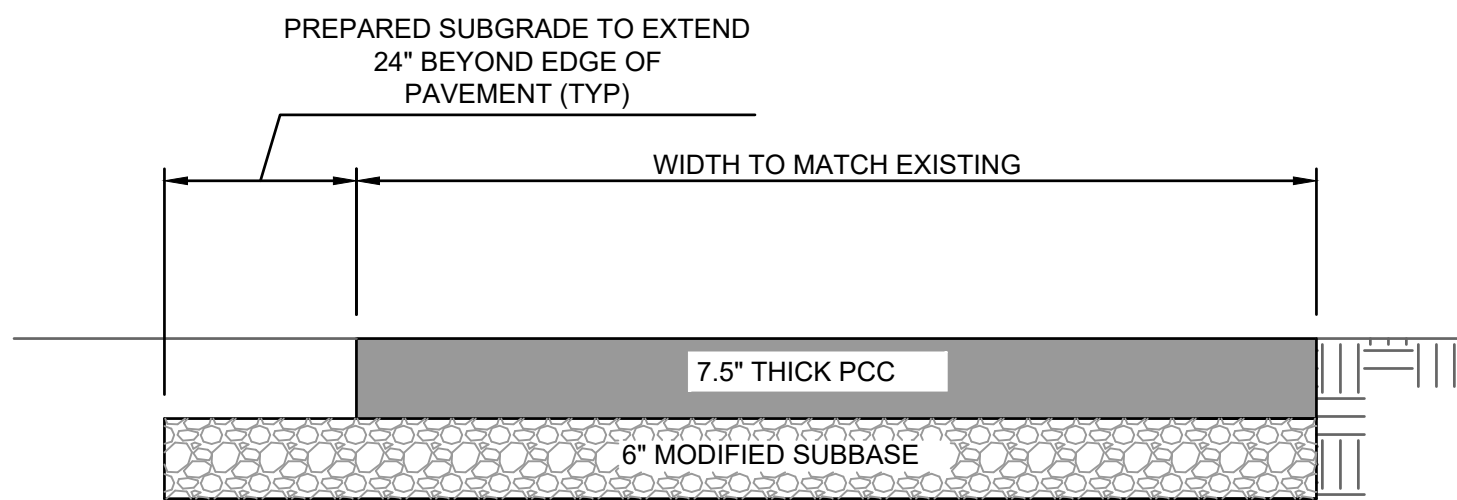
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PLAN VIEW

6 TYPICAL CONCRETE FILLET DETAIL

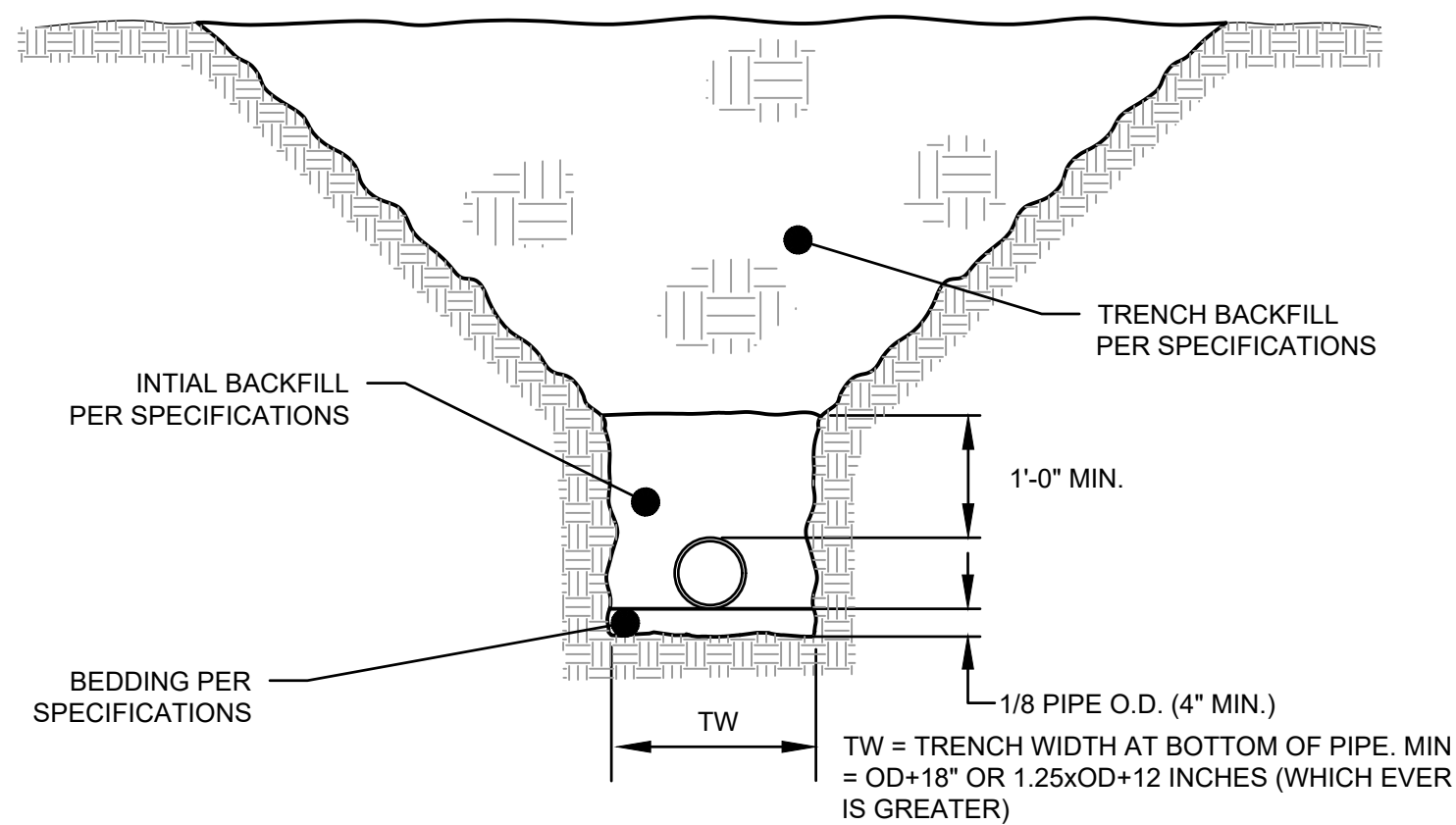
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2 PCC DRIVEWAY DETAIL

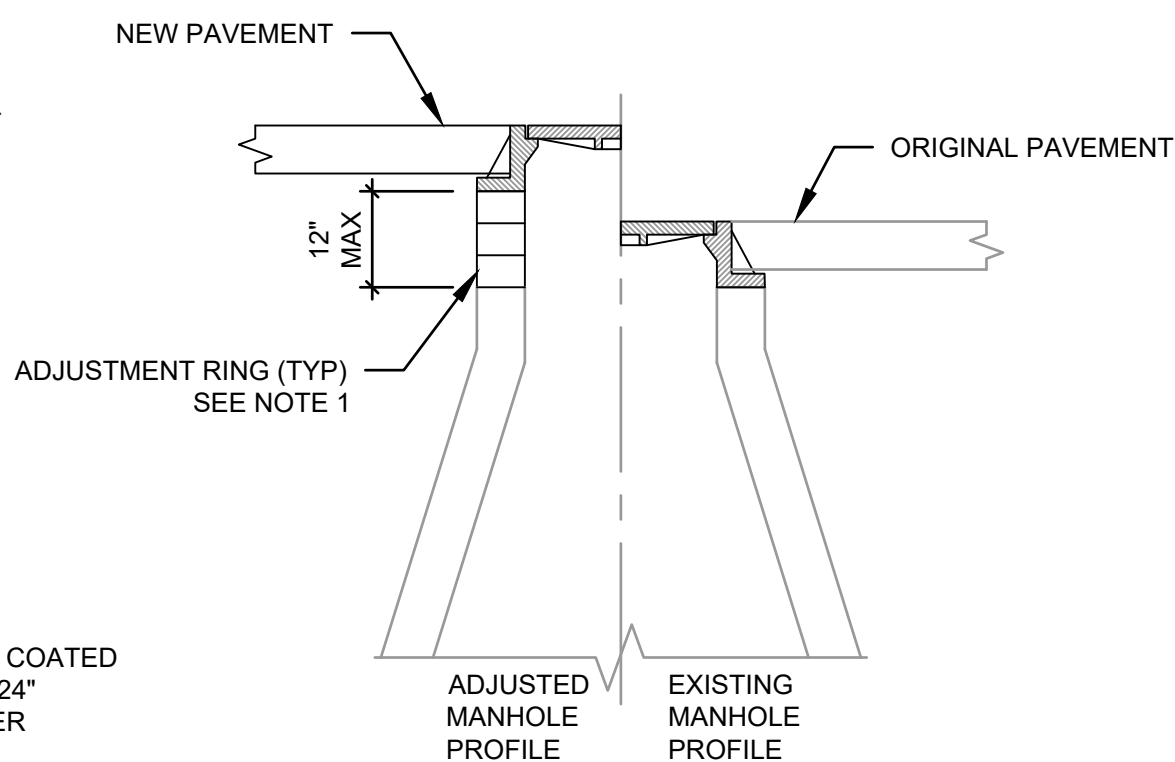
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- NOTE:
1. REFER TO SPECIFICATION SECTION 32 1623 FOR COMPLETE REQUIREMENTS



5 TYPICAL DETAIL PRESSURE LINES (EARTH EXCAVATION)

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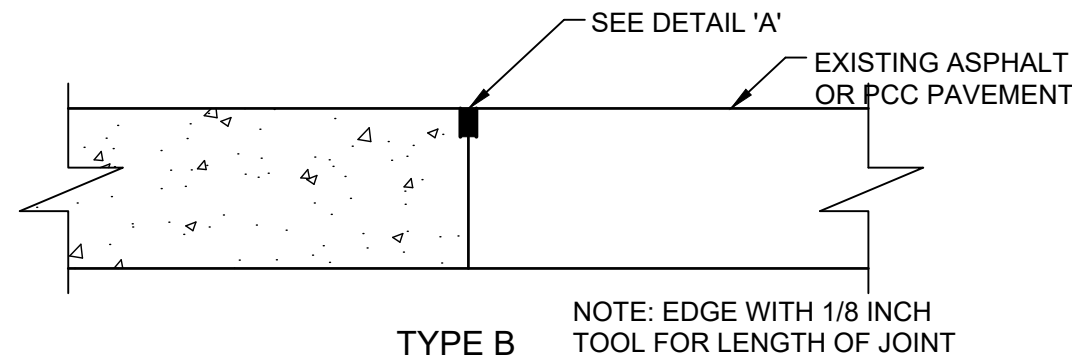


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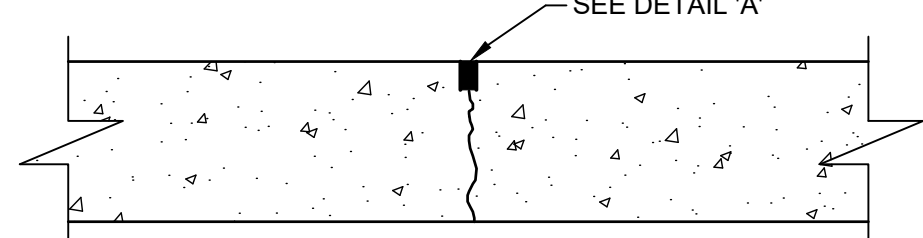
1. ADJUSTMENT RINGS SHALL BE CRETEX PRO-RING OR APPROVED EQUAL. REMOVE ALL EXISTING CONCRETE ADJUSTMENT RINGS (IF ANY EXIST) AND REPLACE WITH PRO-RINGS.
2. CASTING SHALL BE MODEL 3025 SELF-LEVEL CASTING MANUFACTURED BY EAST JORDAN. NO SUBSTITUTIONS.
3. FOUNDATION, FOOTING PAD, LOWEST BARREL SECTION OF MANHOLE AND PIPES SHALL REMAIN UNDISTURBED.

7 MANHOLE ADJUSTMENT DETAIL

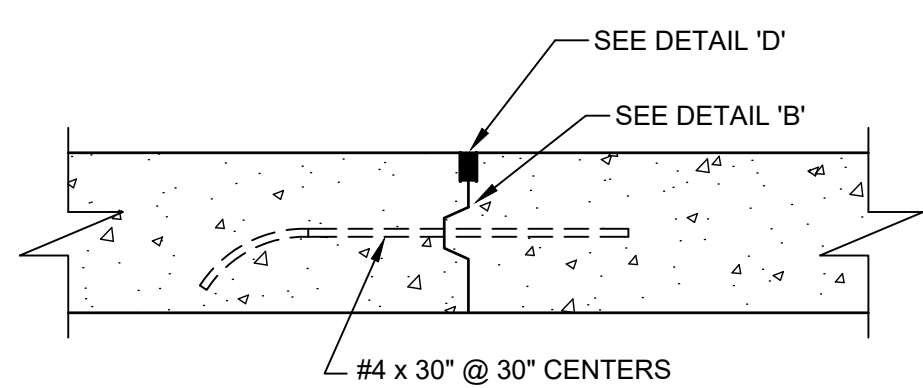
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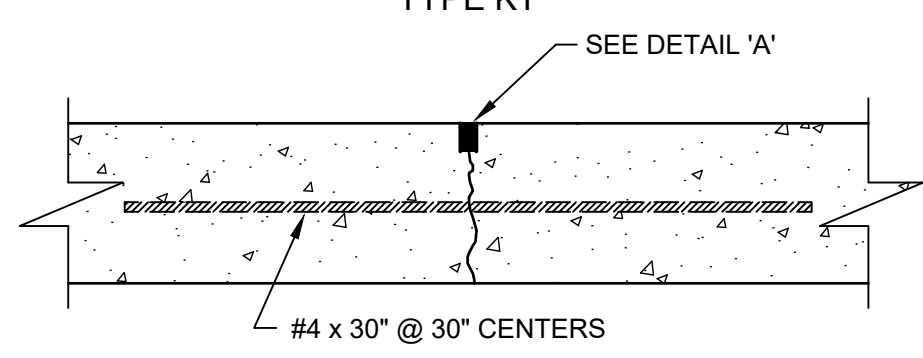
NOTE: EDGE WITH 1/8 INCH TOOL FOR LENGTH OF JOINT



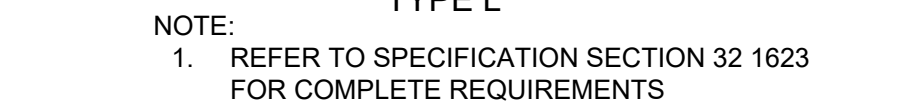
NOTE: SEE DETAIL 'D'



NOTE: SEE DETAIL 'A'



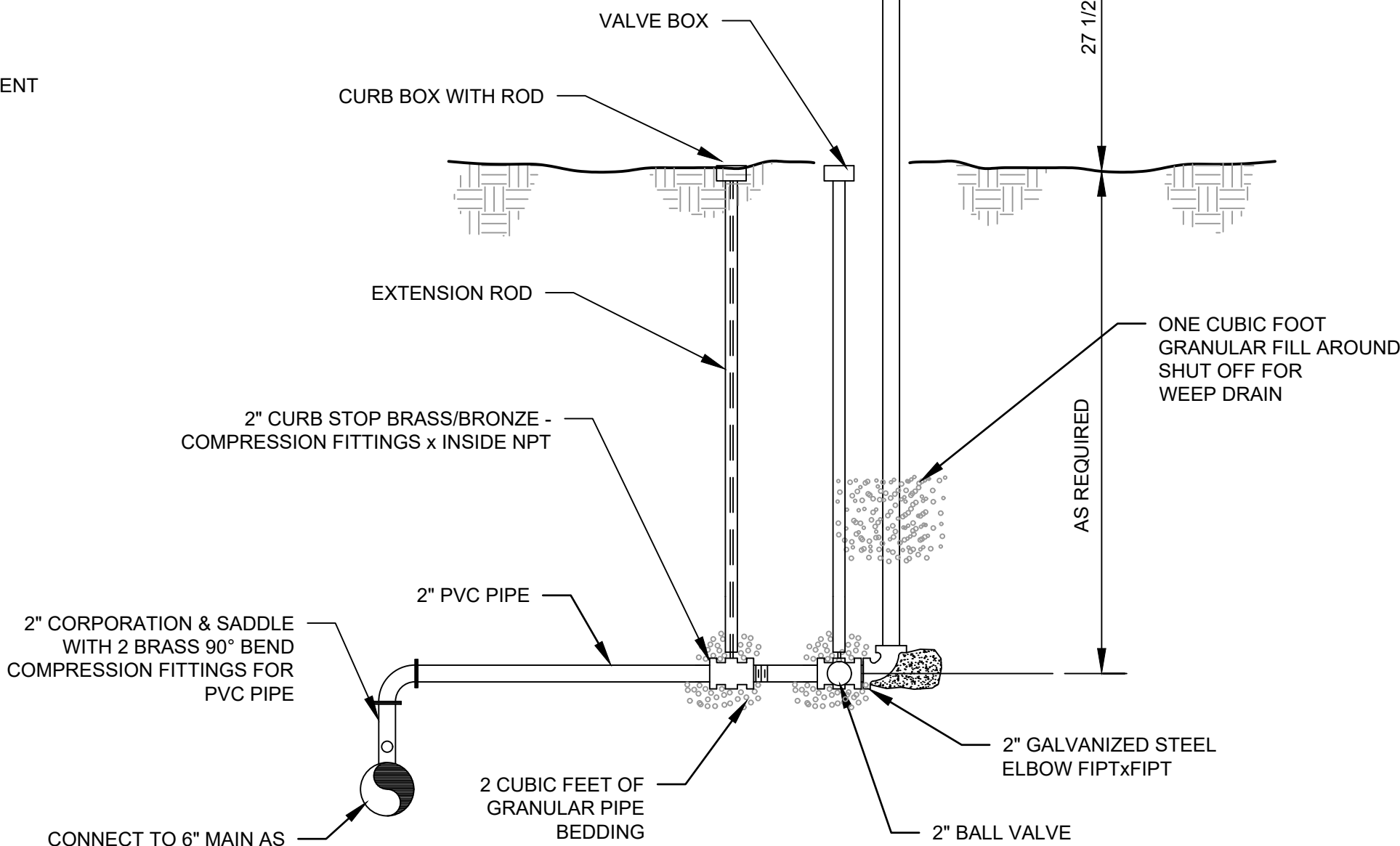
NOTE: SEE DETAIL 'A'



4 CONCRETE PAVEMENT JOINT TYPES

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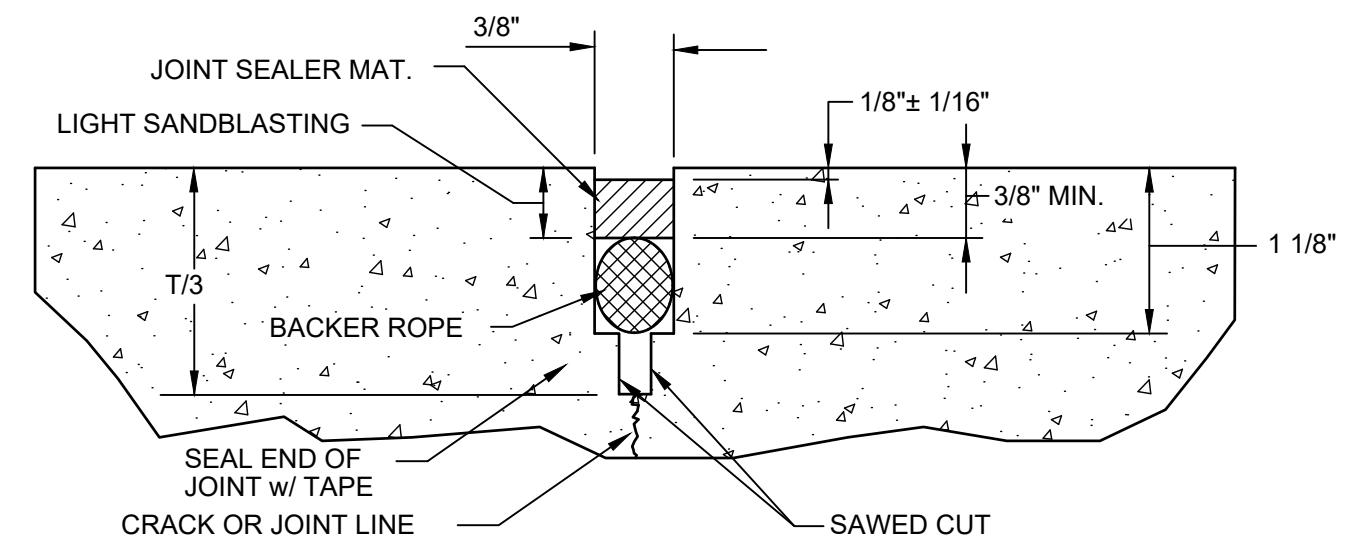
2" FREEZELESS UTILITY HYDRANT
MURDOCK MODEL M-200 OR
ENGINEER APPROVED EQUIVALENT



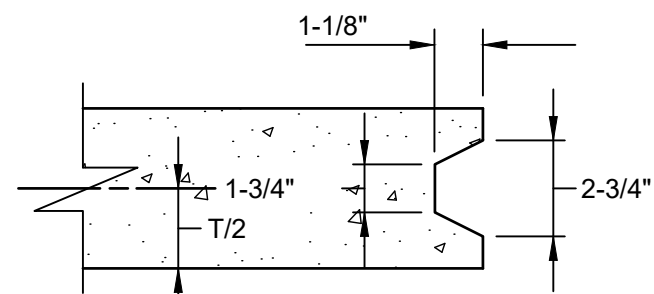
NOTE: ALL PIPE SHALL BE RESTRAINED IN ACCORDANCE WITH SPEC SECTION 33 1416.

8 POST HYDRANT DETAIL

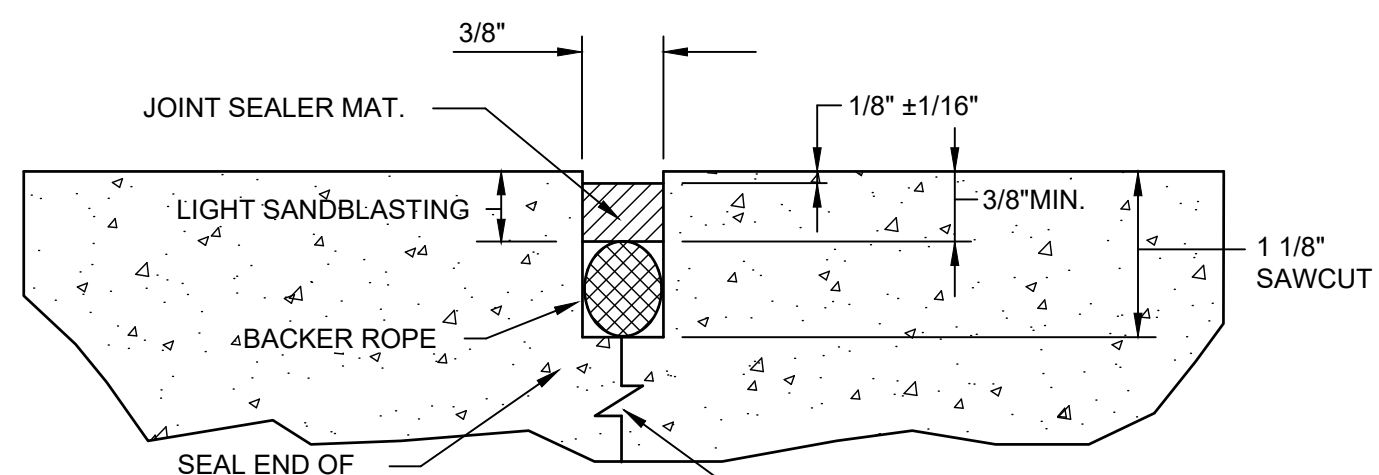
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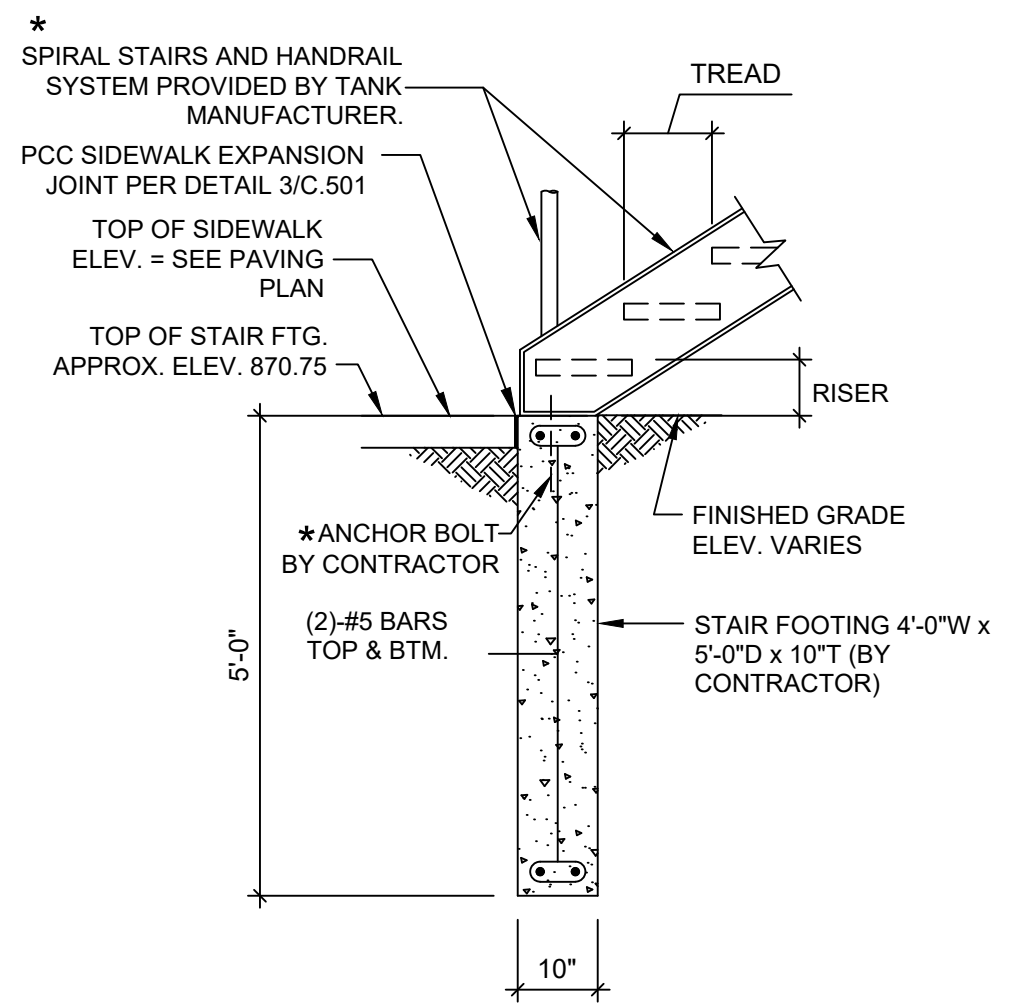
DETAIL "A"



DETAIL "B"



DETAIL "D"



9 STAIR FOOTING DETAIL

NTS

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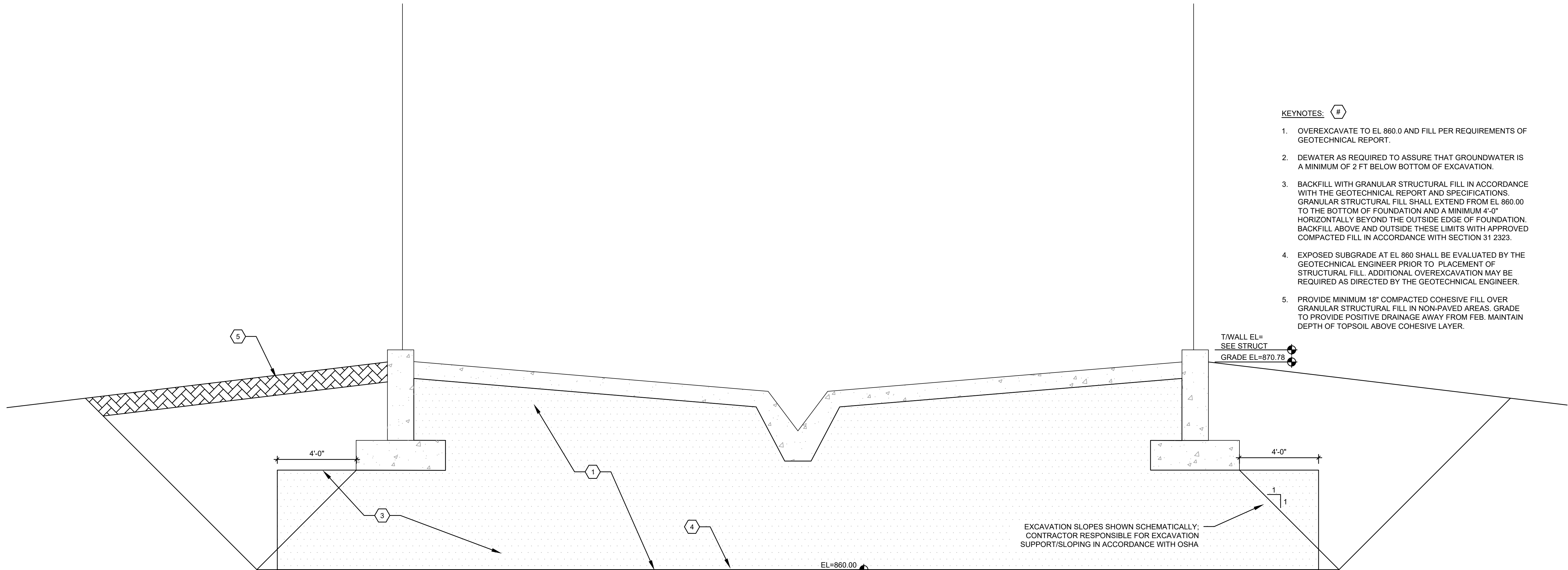


FLOW EQUALIZATION IMPROVEMENTS
CITY OF MARSHALLTOWN
MARSHALLTOWN, IOWA

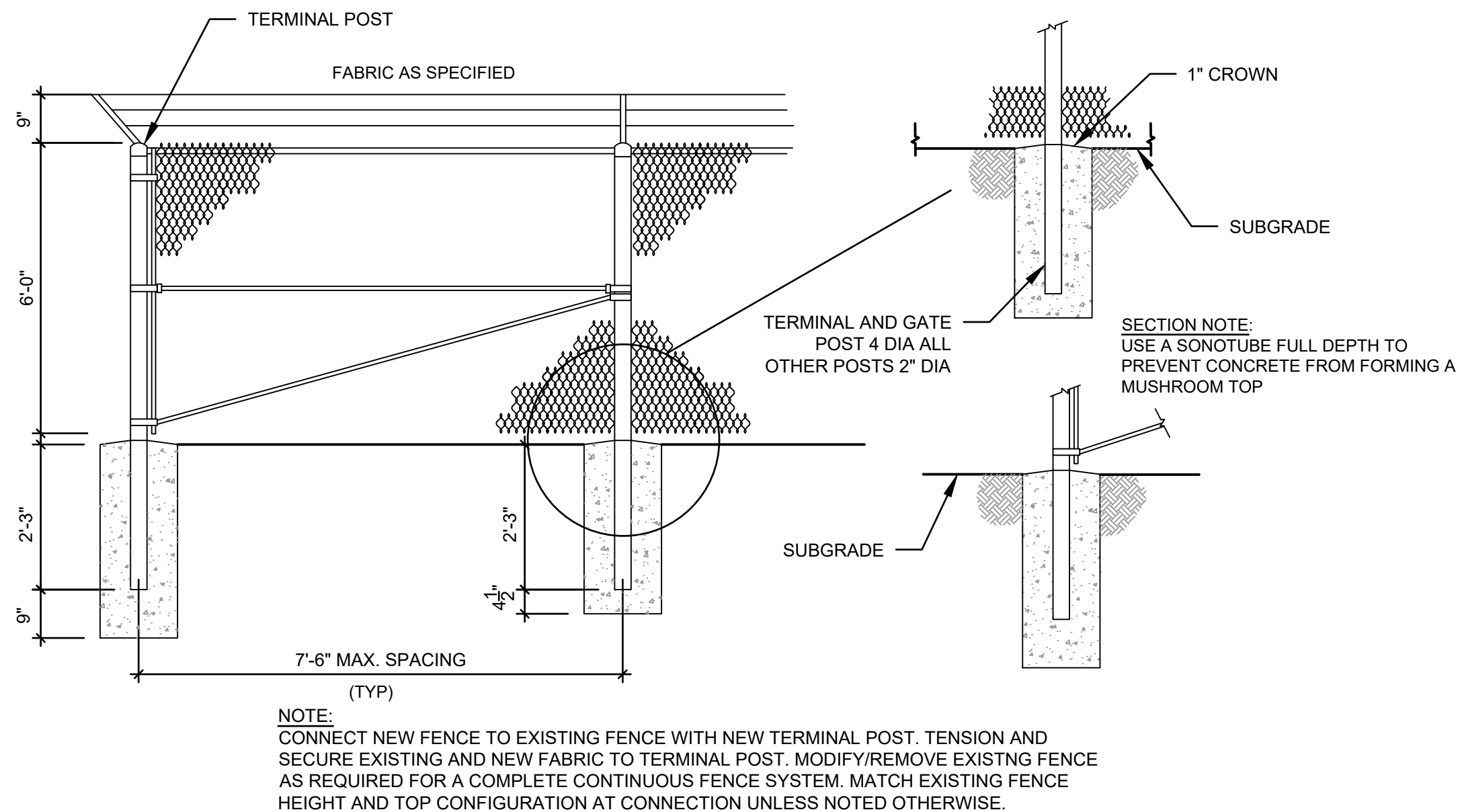
C-CIVIL
CIVIL DETAILS

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SHEET NO.
C.501

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- KEYNOTES: #
- OVEREXCAVATE TO EL 860.0 AND FILL PER REQUIREMENTS OF GEOTECHNICAL REPORT.
 - DEWATER AS REQUIRED TO ASSURE THAT GROUNDWATER IS A MINIMUM OF 2 FT BELOW BOTTOM OF EXCAVATION.
 - BACKFILL WITH GRANULAR STRUCTURAL FILL IN ACCORDANCE WITH THE GEOTECHNICAL REPORT AND SPECIFICATIONS. GRANULAR STRUCTURAL FILL SHALL EXTEND FROM EL 860.00 TO THE BOTTOM OF FOUNDATION AND A MINIMUM 4'-0" HORIZONTALLY BEYOND THE OUTSIDE EDGE OF FOUNDATION. BACKFILL ABOVE AND OUTSIDE THESE LIMITS WITH APPROVED COMPACTED FILL IN ACCORDANCE WITH SECTION 31 2323.
 - EXPOSED SUBGRADE AT EL 860 SHALL BE EVALUATED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT OF STRUCTURAL FILL. ADDITIONAL OVEREXCAVATION MAY BE REQUIRED AS DIRECTED BY THE GEOTECHNICAL ENGINEER.
 - PROVIDE MINIMUM 18" COMPACTED COHESIVE FILL OVER GRANULAR STRUCTURAL FILL IN NON-PAVED AREAS. GRADE TO PROVIDE POSITIVE DRAINAGE AWAY FROM FEB. MAINTAIN DEPTH OF TOPSOIL ABOVE COHESIVE LAYER.

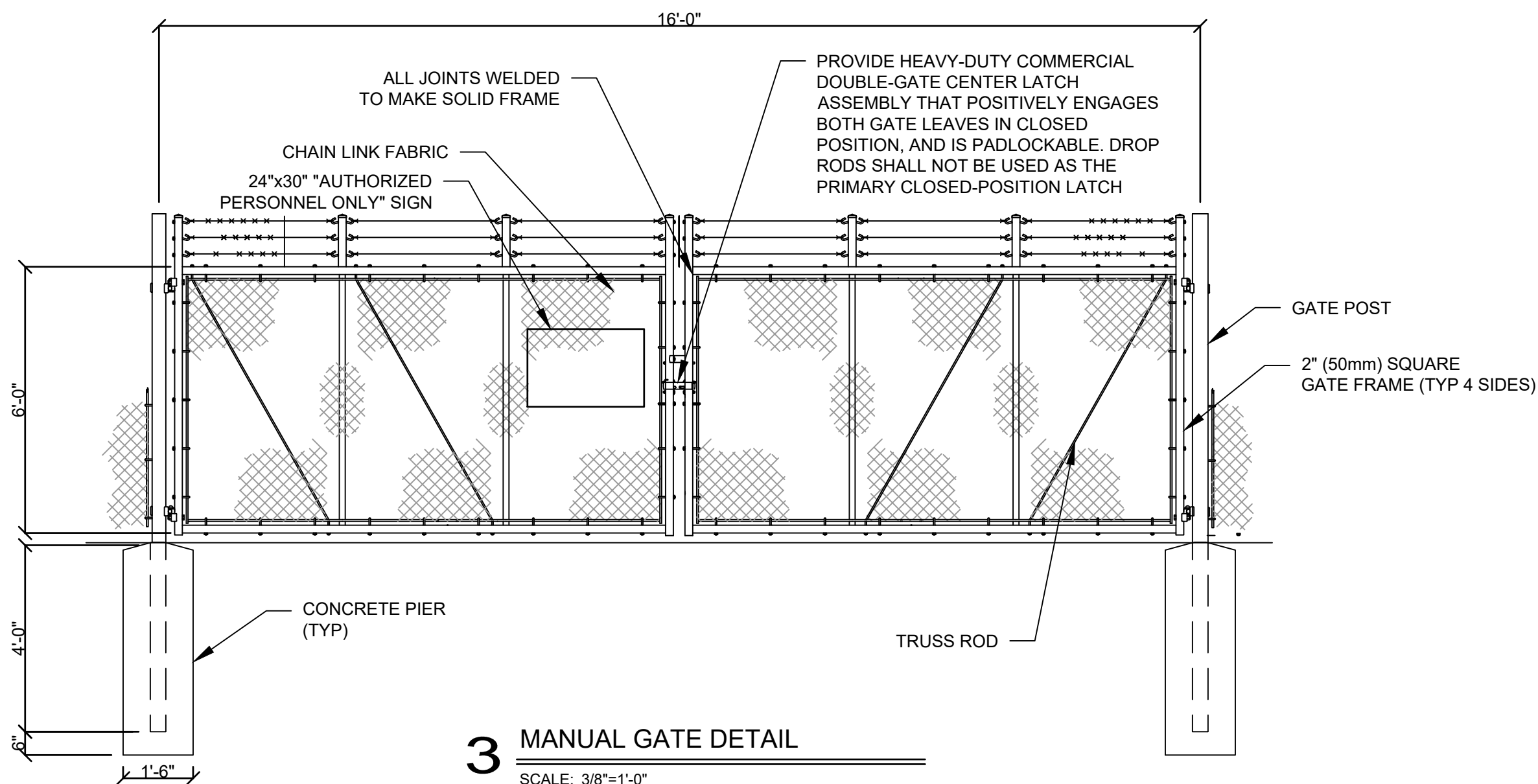


2 FENCE DETAIL

NTS

1 EXCAVATION/BACK-FILL REQUIREMENTS

SCALE: NOT TO SCALE



3 MANUAL GATE DETAIL

SCALE: 3/8"=1'-0"

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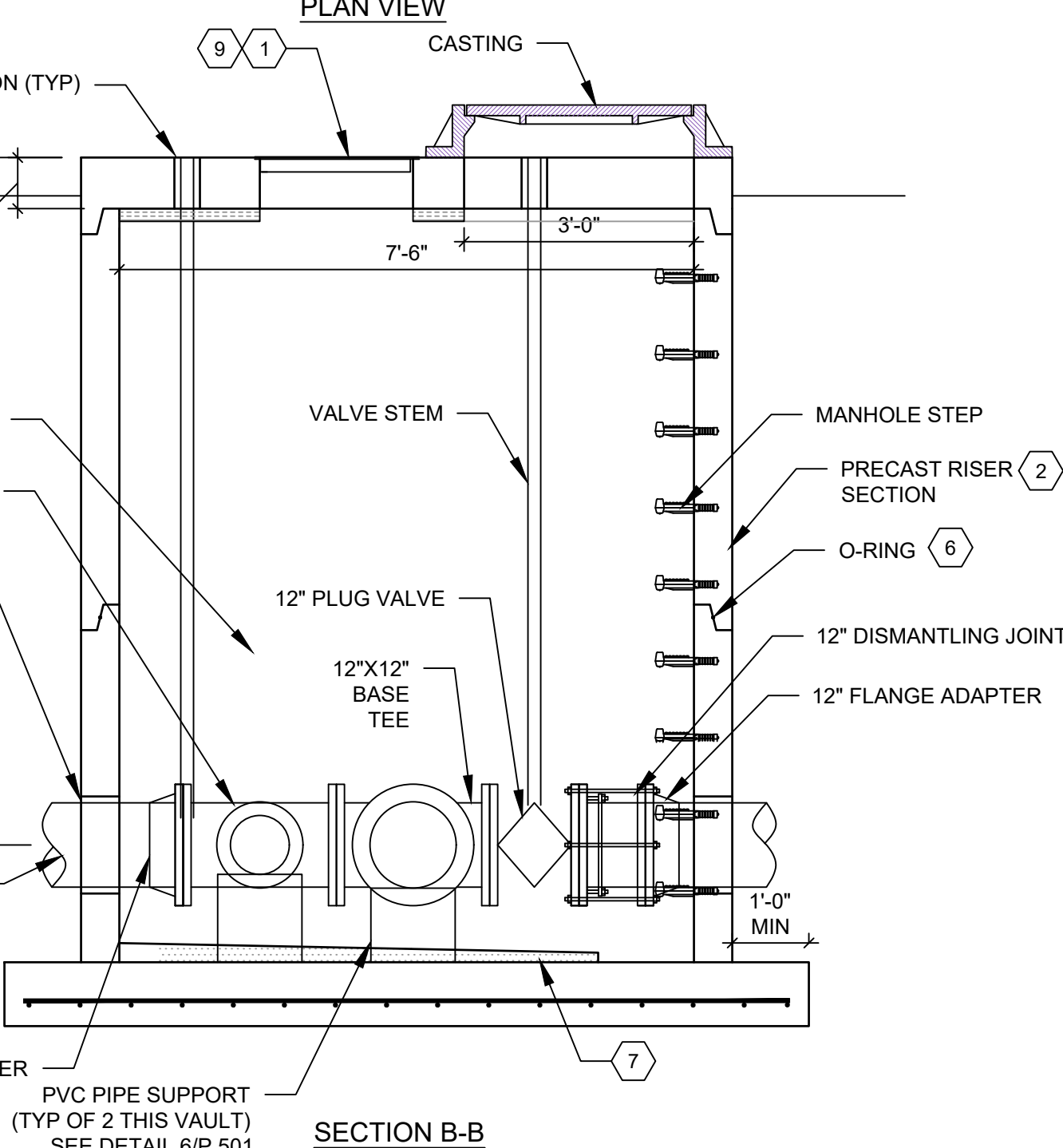
FLOW EQUALIZATION IMPROVEMENTS
CITY OF MARSHALLTOWN
MARSHALLTOWN, IOWA

C-CIVIL
CIVIL DETAILS

SHEET NO.
C.502

BID SET

3. PRECAST CONCRETE TOP SLAB SUITABLE FOR HS20 WHEEL LOADING. PROVIDE IOWA PROFESSIONAL ENGINEER CERTIFICATION OF TOP SLAB WITH SHOP DRAWING SUBMITTAL. TOP SLAB FOOTPRINT TO MATCH OUTSIDE FOOTPRINT OF RECTANGULAR VAULT SECTION BELOW. UTILIZE EPOXY COATED REBAR. OPENING FOR MANHOLE FRAME AND COVER SHALL BE CAST INTO TOP SLAB. OPENING FOR VALVE STEM EXTENSION AND WRENCH NUT SHALL BE CAST INTO TOP SLAB WITH WATERTIGHT CAPS (TYP OF 2). OPENING FOR EQUIPMENT HATCH SHALL BE CAST INTO TOP SLAB. CONTRACTOR SHALL COORDINATE OPENINGS AS REQUIRED.
2. 7'-6"x5'-6" INSIDE DIMENSION PRECAST RISERS MEETING ASTM C478 AND SUITABLE FOR HS20 WHEEL LOADING. PROVIDE IOWA PROFESSIONAL ENGINEER CERTIFICATION OF PRECAST RISERS WITH SHOP DRAWING SUBMITTAL.
3. PRECAST CONCRETE BOTTOM SLAB SHALL BE DESIGNED BY A DELEGATED ENGINEER LICENSED AS A PROFESSIONAL ENGINEER IN THE STATE OF IOWA, IN ACCORDANCE WITH SPECIFICATION SECTION 33 0513. BASE SLAB SHALL BE DESIGNED FOR ALL APPLICABLE LOADS INCLUDING SOIL BEARING (1,500 PSF ALLOWABLE PER GEOTECHNICAL REPORT), HYDROSTATIC PRESSURE, AND BUOYANCY/FLOTATION WITH VAULT EMPTY AND GROUNDWATER AT GRADE ELEVATION, WITH A MINIMUM FACTOR OF SAFETY AGAINST FLOTATION PER APPLICABLE CODE. PROVIDE IOWA PE CERTIFICATION OF BASE SLAB DESIGN WITH SHOP DRAWING SUBMITTAL. PER NOTES 1 AND 2 ABOVE.
4. INSTALL 500 POUND CAPACITY LIFT HOOK AS CLOSE AS POSSIBLE TO EACH VALVE STEM IN UNDERSIDE OF ROOF, INCLUDE LOAD IN DESIGN OF VAULT ROOF SLAB.
5. 2" POLYSTYRENE CLOSED CELL BOARD INSULATION. INSULATION SHALL BE APPLIED DIRECTLY TO THE VAULT CEILING. CONTRACTOR TO WORK INSULATION AROUND LIFT HOOKS, VALVE BOXES, AND CASTINGS. INSULATION SHALL HAVE DEMONSTRATED A SATISFACTORY PERFORMANCE HISTORY IN UNDERGROUND INSTALLATION AND SHALL HAVE THE FOLLOWING PHYSICAL PROPERTIES:
 - DENSITY - 2 PCF MIN
 - COMPRESSIVE STRENGTH (ASTM D1621) - 35 PSI MIN
 - THERMAL RESISTANCE - R-VALUE 5.0 MIN
6. ALL JOINTS SHALL INCLUDE CONFINED O-RING BETWEEN SECTIONS AND SHALL BE WRAPPED EXTERNALLY PER SPECIFICATION SECTION 33 0513.
7. ADD SLOPING CONCRETE FILL IN BOTTOM OF VAULT. NO FILL IN A 15"x15" AREA IMMEDIATELY BELOW CEILING. 1 1/2" MIN THICKNESS AT FLAT AREA, SLOPING UP TO 3" THICKNESS AT HIGH POINT AROUND PERIMETER.
8. KICKER SHALL BE NPS 2" SCH 40 PIPE WITH 1/2"x10"x10" PLATE EACH END WITH ALL AROUND WELD TO PIPE. HOT-DIP GALVANIZE WELDED ASSEMBLY. BOLT TO BASE TEE WITH SS BOLTS AND TO PRECAST WALL WITH (4)-3/8" CONC ANCHORS. SHIM TIGHT WITH SS 10"x10" SHIM PLATES. LENGTH AS NEEDED.
9. 24"x24" FLUSH SS EQUIPMENT ACCESS HATCH BY BILCO, NYSTROM, OR ENGINEER APPROVED EQUIVALENT. HATCH SHALL BE RATED FOR HS20 WHEEL LOADING. REFER TO DETAIL 5 THIS SHEET.



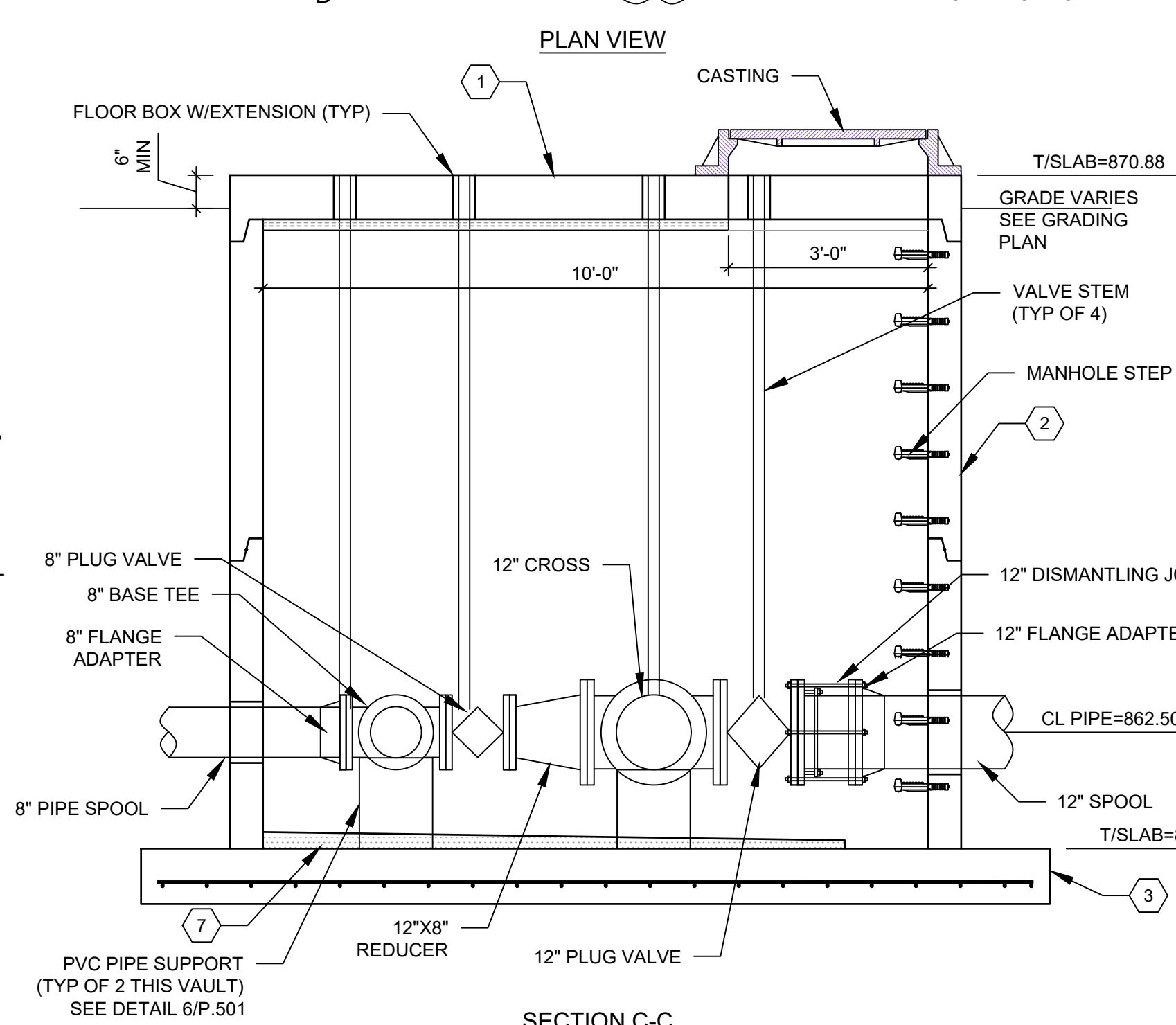
1. ALL PIPING IN VAULTS TO BE DUCTILE IRON IN ACCORDANCE WITH SPECIFICATION SECTIONS 22 1116 AND 22 1117.

SCALE: 1/2"=1'-0"

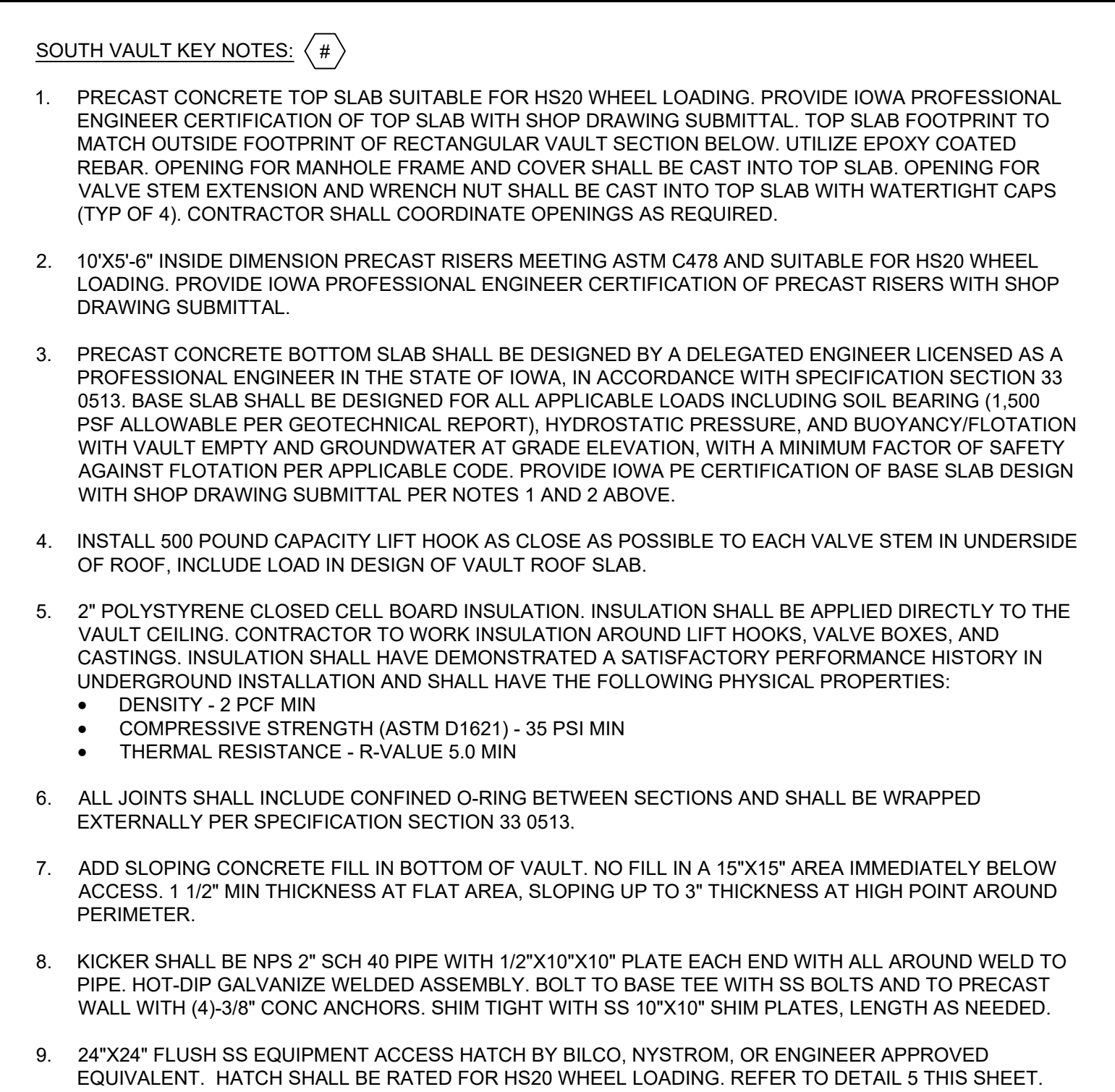


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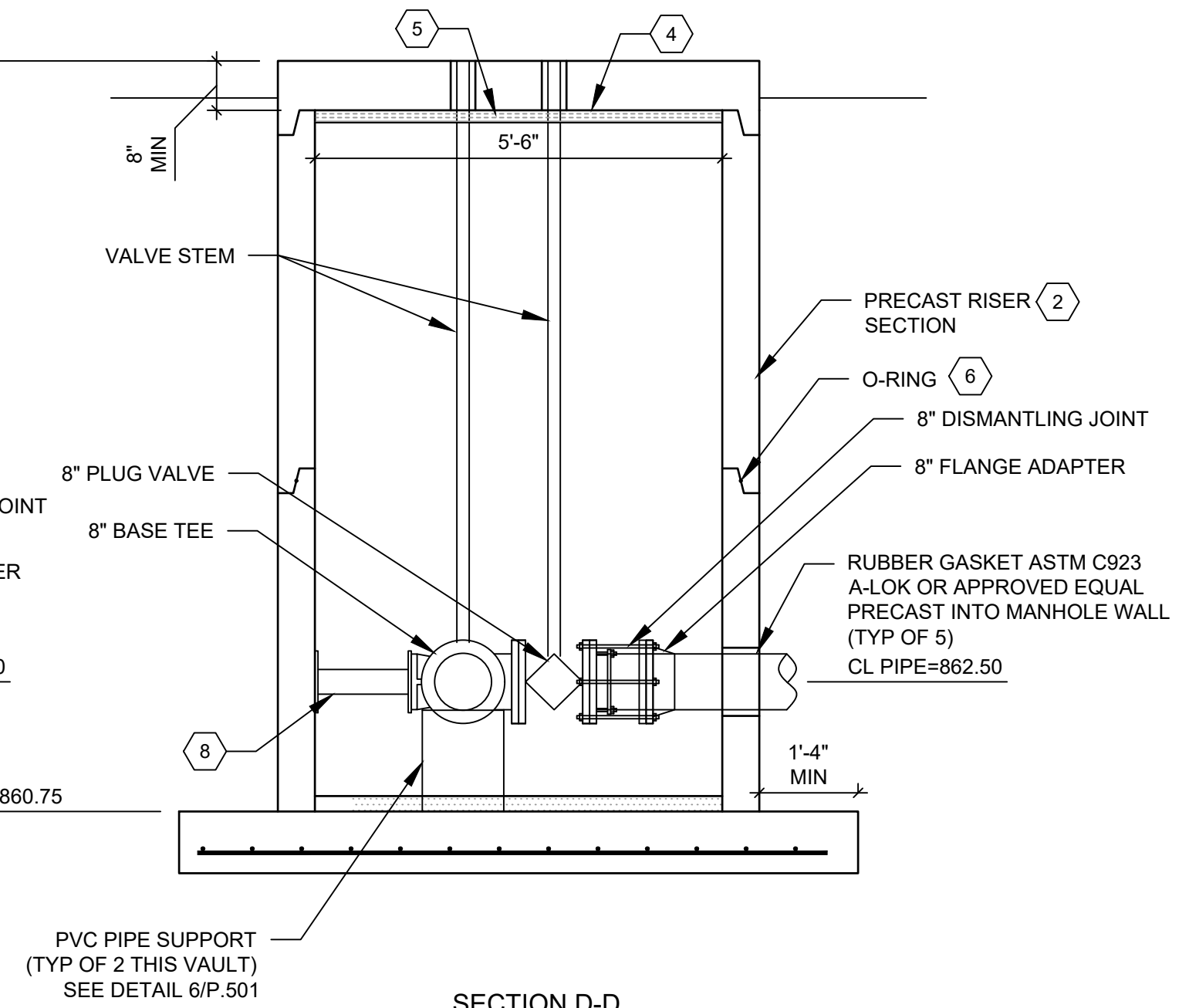
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SCALE: 1/2"=1' 0"



1. PRECAST CONCRETE TOP SLAB SUITABLE FOR HS20 WHEEL LOADING. PROVIDE IOWA PROFESSIONAL ENGINEER CERTIFICATION OF TOP SLAB WITH SHOP DRAWING SUBMITTAL. TOP SLAB FOOTPRINT TO MATCH OUTSIDE FOOTPRINT OF RECTANGULAR VAULT SECTION BELOW. UTILIZE EPOXY COATED REBAR. OPENING FOR MANHOLE FRAME AND COVER SHALL BE CAST INTO TOP SLAB. OPENING FOR VALVE STEM EXTENSION AND WRENCH NUT SHALL BE CAST INTO TOP SLAB WITH WATERTIGHT CAPS (TYPE OF 4). CONTRACTOR SHALL COORDINATE OPENINGS AS REQUIRED.
2. 10'X5'-6" INSIDE DIMENSION PRECAST RISERS MEETING ASTM C478 AND SUITABLE FOR HS20 WHEEL LOADING. PROVIDE IOWA PROFESSIONAL ENGINEER CERTIFICATION OF PRECAST RISERS WITH SHOP DRAWING SUBMITTAL.
3. PRECAST CONCRETE BOTTOM SLAB SHALL BE DESIGNED BY A DELEGATED ENGINEER LICENSED AS A PROFESSIONAL ENGINEER IN THE STATE OF IOWA, IN ACCORDANCE WITH SPECIFICATION SECTION 33 0513. BASE SLAB SHALL BE DESIGNED FOR ALL APPLICABLE LOADS INCLUDING SOIL BEARING (1,500 PSF ALLOWABLE PER GEOTECHNICAL REPORT), HYDROSTATIC PRESSURE, AND BUOYANCY/FLOTATION WITH VAULT EMPTY AND GROUNDWATER AT GRADE ELEVATION, WITH A MINIMUM FACTOR OF SAFETY AGAINST FLOTATION PER APPLICABLE CODE. PROVIDE IOWA PE CERTIFICATION OF BASE SLAB DESIGN WITH SHOP DRAWING SUBMITTAL PER NOTES 1 AND 2 ABOVE.
4. INSTALL 500 POUND CAPACITY LIFT HOOK AS CLOSE AS POSSIBLE TO EACH VALVE STEM IN UNDERSIDE OF ROOF. INCLUDE LOAD IN DESIGN OF VAULT ROOF SLAB.
5. 2" POLYSTYRENE CLOSED CELL BOARD INSULATION, INSULATION SHALL BE APPLIED DIRECTLY TO THE VAULT CEILING. CONTRACTOR TO WORK INSULATION AROUND LIFT HOOKS, VALVE BOXES, AND CASTINGS. INSULATION SHALL HAVE DEMONSTRATED A SATISFACTORY PERFORMANCE HISTORY IN UNDERGROUND INSTALLATION AND SHALL HAVE THE FOLLOWING PHYSICAL PROPERTIES:
 - DENSITY - 2 PCF MIN
 - COMPRESSIVE STRENGTH (ASTM D1621) - 35 PSI MIN
 - THERMAL RESISTANCE - R-VALUE 5.0 MIN
6. ALL JOINTS SHALL INCLUDE CONFINED R-ING BETWEEN SECTIONS AND SHALL BE WRAPPED EXTERNALLY PER SPECIFICATION SECTION 33 0513.
7. ADD SLOPING CONCRETE FILL IN BOTTOM OF VAULT. NO FILL IN A 15'X15' AREA IMMEDIATELY BELOW ACCESS. 1 1/2" MIN THICKNESS AT FLAT AREA, SLOPING UP TO 3" THICKNESS AT HIGH POINT AROUND PERIMETER.
8. KICKER SHALL BE NPS 2" SCH 40 PIPE WITH 1/2"x10"x10" PLATE EACH END WITH ALL AROUND WELD TO PIPE. HOT-DIP GALVANIZED WELDED ASSEMBLY. BOLT TO BASE TEE WITH SS BOLTS AND TO PRECAST WALL WITH (4)-3/8" CONC ANCHORS. SHIM TIGHT WITH SS 10"x10" SHIM PLATES, LENGTH AS NEEDED.
9. 24"x24" FLUSH SS EQUIPMENT ACCESS HATCH BY BILCO, NYSTROM, OR ENGINEER APPROVED EQUIVALENT. HATCH SHALL BE RATED FOR HS20 WHEEL LOADING. REFER TO DETAIL 5 THIS SHEET.



1. ALL FLOOR DOORS SHALL BE FURNISHED WITH SAFETY NET OR SAFETY GRATING PER MANUFACTURER'S STANDARD.
2. SIZE INDICATED ON DRAWING IS MINIMUM ACCEPTABLE CLEAR OPENING SIZE.
3. ON PLAN, HATCHES ARE INDICATED THUS: 

SCALE: NOT TO SCALE

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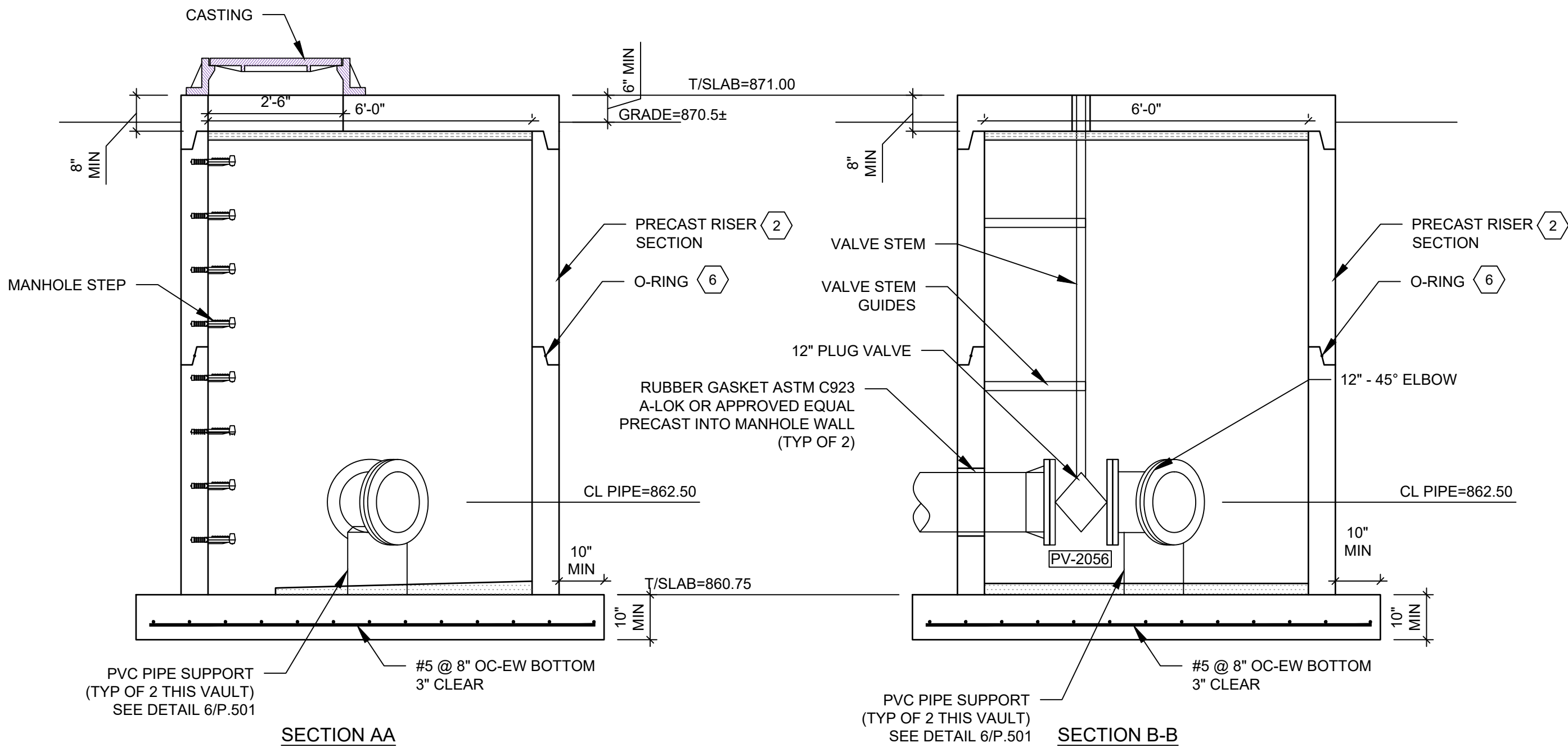
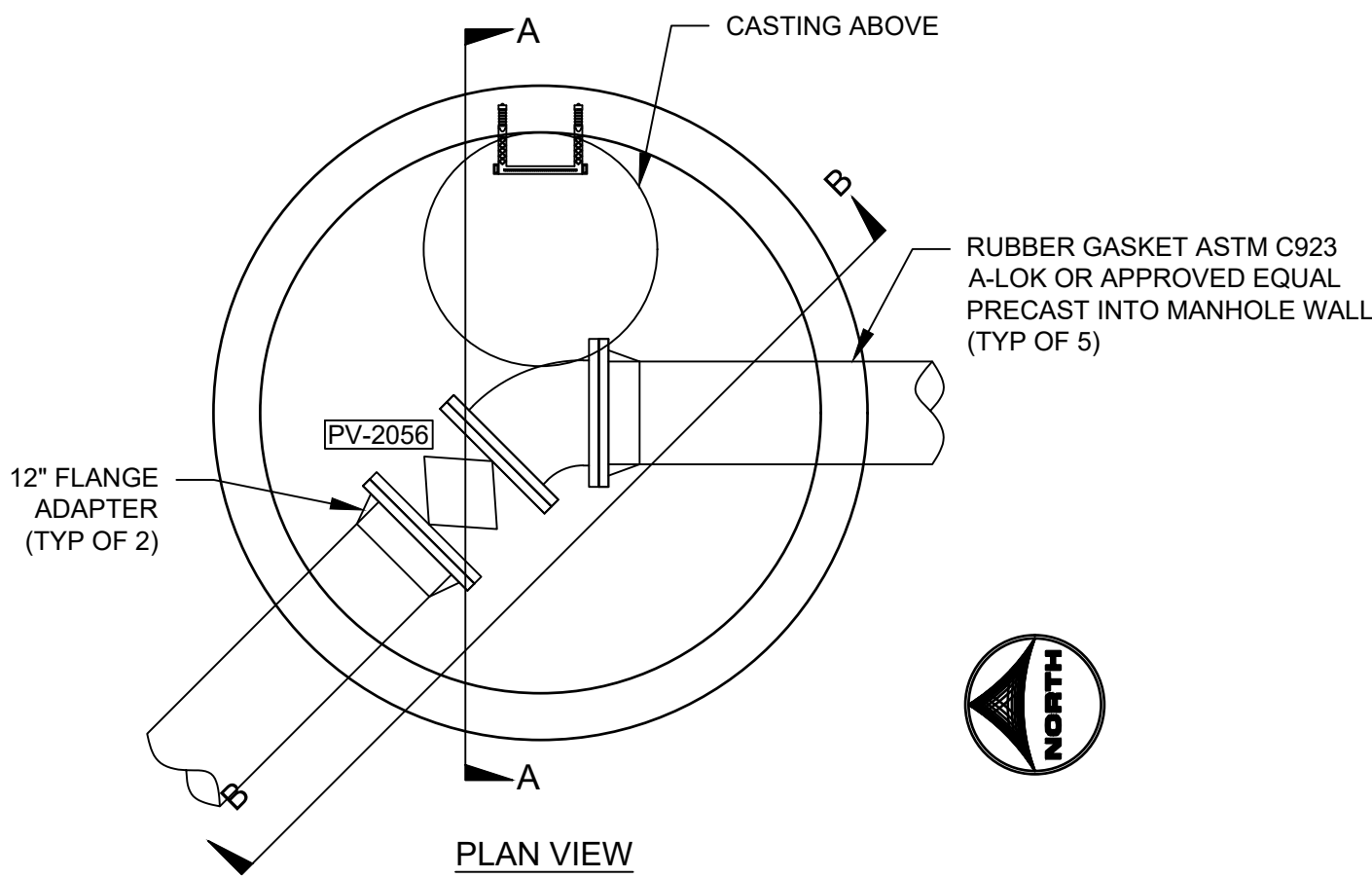
C-CIVIL

VALVE VAULT DETAILS

C.503

72" ROUND VAULT KEY NOTES:

1. PRECAST CONCRETE TOP SLAB SUITABLE FOR HS20 WHEEL LOADING. PROVIDE IOWA PROFESSIONAL ENGINEER CERTIFICATION OF TOP SLAB WITH SHOP DRAWING SUBMITTAL. TOP SLAB FOOTPRINT TO MATCH OUTSIDE FOOTPRINT OF RECTANGULAR VAULT SECTION BELOW. UTILIZE EPOXY COATED REBAR. OPENING FOR MANHOLE FRAME AND COVER SHALL BE CAST INTO TOP SLAB. OPENING FOR VALVE STEM EXTENSION AND WRENCH NUT SHALL BE CAST INTO TOP SLAB WITH WATERTIGHT CAPS (TYP OF 4). CONTRACTOR SHALL COORDINATE OPENINGS AS REQUIRED.
2. 72"Ø INSIDE DIMENSION PRECAST RISERS MEETING ASTM C478 AND SUITABLE FOR HS20 WHEEL LOADING. PROVIDE IOWA PROFESSIONAL ENGINEER CERTIFICATION OF PRECAST RISERS WITH SHOP DRAWING SUBMITTAL.
3. PRECAST CONCRETE BOTTOM SLAB SHALL BE MANUFACTURED AS SHOWN. UTILIZE EPOXY COATED REBAR.
4. INSTALL 500 POUND CAPACITY LIFT HOOK AS CLOSE AS POSSIBLE TO EACH VALVE STEM IN UNDERSIDE OF ROOF, INCLUDE LOAD IN DESIGN OF VAULT ROOF SLAB.
5. 2" POLYSTYRENE CLOSED CELL BOARD INSULATION. INSULATION SHALL BE APPLIED DIRECTLY TO THE VAULT CEILING. CONTRACTOR TO WORK INSULATION AROUND LIFT HOOKS, VALVE BOXES, AND CASTINGS. INSULATION SHALL HAVE DEMONSTRATED A SATISFACTORY PERFORMANCE HISTORY IN UNDERGROUND INSTALLATION AND SHALL HAVE THE FOLLOWING PHYSICAL PROPERTIES:
 - DENSITY - 2 PCF MIN
 - COMPRESSIVE STRENGTH (ASTM D1621) - 35 PSI MIN
 - THERMAL RESISTANCE - R-VALUE 5.0 MIN
6. ALL JOINTS SHALL INCLUDE CONFINED O-RING BETWEEN SECTIONS AND SHALL BE WRAPPED EXTERNALLY PER SPECIFICATION SECTION 33 0513.
7. ADD SLOPING CONCRETE FILL IN BOTTOM OF VAULT. NO FILL IN A 15"X15" AREA IMMEDIATELY BELOW ACCESS, 1 1/2" MIN THICKNESS AT FLAT AREA, SLOPING UP TO 3" THICKNESS AT HIGH POINT AROUND PERIMETER.



1 72"Ø VAULT MANHOLE DETAIL
SCALE: 1/2"=1'-0"

BID SET

DRAWN BY: BDB JOB DATE: 2026 SCALE: ViewportScale
APPROVED: Value JOB NUMBER: 2503420
CAD DATE: 8/20/2026 9:05 AM
CAD FILE: 2503420-C-DETAILS-C504.dwg

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FLOW EQUALIZATION IMPROVEMENTS
CITY OF MARSHALLTOWN
MARSHALLTOWN, IOWA

C-CIVIL
VALVE VAULT DETAILS

SHEET NO.
C.504

000001-GOVERNING DESIGN CODES:

- A. International Building Code (IBC-2021)
- B. Code Requirements for Environmental Engineering Concrete Structures (ACI 350-20)
- C. Building Code Requirements for Structural Concrete (ACI 318-19)

020000-FOUNDATIONS:

- A. Foundation design criteria was based on recommendations set forth in geotechnical report number: AB265003-01 by Terracon, dated 03/13/2026.
- B. Allowable soil bearing pressure 1,500 psf
- C. Minimum frost depth 3'-6"
- D. The contractor shall refer to the geotechnical report for other requirements and recommendations, including but not limited to over-excavation, backfill, and compaction requirements.

030000-CONCRETE:

- A. All cast-in-place concrete work shall be in accordance with ACI 318-19 (Building Code Requirements for Structural Concrete) and ACI 301-16 (Specifications) except as modified by the contract documents.

- B. Concrete mixes:

CONCRETE MATERIAL SCHEDULE			
PROPERTIES/MATERIALS	MIX 1 STRUCTURAL CONCRETE	MIX 2 STRUCTURAL FLOOR	MIX 3 CONTROLLED LOW-STRENGTH MATERIAL (CLSM)
COMPRESSIVE STRENGTH - MINIMUM	4,500 psi	4,000 psi	250 psi
PORTLAND CEMENT - ASTM C595	Type IL	Type IL	Type IL
FLYASH - ASTM C618	15% max.	15% max.	25% max.
AGGREGATE - COURSE - ASTM C33	1" max.	1" max.	SAND
AIR ENTRAINMENT - ASTM C260	6% ± 1%	6% ± 1%	6% ± 1%
SUPER PLASTICIZER - ASTM C494	(OPTIONAL) TYPE F	(OPTIONAL) TYPE F	(OPTIONAL) TYPE F
WATER TO CEMENT RATIO - MAXIMUM	0.40 max.	0.45 max.	N/A
SYNTHETIC FIBERS	OPTIONAL	ELEVATED SLABS AND EXTERIOR CAPPING SLABS	NO
MAXIMUM UNIT WEIGHT	150 PCF	150 PCF	

- NOTE:
- All concrete is Mix 1 unless noted otherwise. Floor slab shall be Mix 2
 - Evaluation and acceptance of concrete shall be in accordance with ACI 318-19, Section 26.12.

- C. Reinforcing:

1. Reinforcing steel shall have minimum yield strength of 60,000 psi and shall meet the requirements of ASTM A615.
2. No welding or field bending is permitted unless detailed or authorized by the structural engineer.
3. Provide chairs and standees as required to maintain placement and clear cover requirements shown on the drawings.
4. Unless noted otherwise, concrete cover for reinforcement shall be as follows:

BAR DEVELOPMENT, SPLICE, AND HOOK TABLE FOR 4500 PSI CONCRETE				
BAR SIZE	DEVELOPMENT	LAP SPLICE	STANDARD 90 DEGREE HOOK LEG	DEVELOPMENT EMBED WITH HOOK
#3	1'-2"	1'-6"	6"	7"
#4	1'-6"	2'-0"	8"	9"
#5	1'-11"	2'-6"	10"	1'-0"
#6	2'-3"	2'-11"	12"	1'-2"
#7	3'-4"	4'-3"	14"	1'-4"
#8	3'-9"	4'-11"	1'-3"	1'-6"
#9	4'-3"	5'-6"	1'-7"	1'-9"
#10	4'-9"	6'-2"	1'-9"	1'-11"
#11	5'-4"	6'-10"	1'-11"	2'-2"

- BAR LENGTH TABLE NOTES:
- All bars shall be considered top bars.
 - Bar lengths for development and splices are based on concrete strengths.
 - Noncontact lap splice length is the lap splice plus the separation of the bars being lapped. Bars being lapped cannot be further apart the 1/5th of the lap splice length or 6", whichever is smaller.
 - For epoxy coated bars, multiply lab splice length by 1.5.
5. Fabrication and placement tolerances shall be in accordance with ACI 301.
6. Detail reinforcing in accordance with latest edition of ACI detailing manual and ACI building code requirements for reinforced concrete. Submit shop drawings and placement drawings to the structural engineer for review prior to fabrication.
7. Unless noted otherwise, lap splices shall be class "B" splices, as follows:

CONCRETE PROTECTION FOR REINFORCEMENT	
CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH	3"
CONCRETE IN CONTACT WITH OR ADJACENT TO WATER/WASTEWATER	2"
CONCRETE EXPOSED TO EARTH OR WEATHER	
#6 THROUGH #11 BARS	2"
#5 OR SMALLER, W31 OR D31 WIRE	1 1/2"
CONCRETE NOT EXPOSED TO EARTH OR WEATHER	
SLABS, WALLS AND JOIST: #11 AND LARGER BARS	1 1/2"
#10 AND SMALLER BARS	LARGER OF 1" OR BAR DIA.
BEAMS AND COLUMNS: PRIMARY REINFORCING, TIES, STIRRUPS AND SPIRALS	1 1/2"

8. Provide horizontal corner bars of matching size and spacing at all corners and intersections.
9. Unless noted otherwise, place (2) - #5 bars (1 each face) with 2'-0" projections around all openings in concrete. Where 2'-0 projection cannot be provided, project as far as possible while still maintaining clear cover requirements and then provide a standard 90 degree hook.

- D. Vertical joints in walls:

1. Provide vertical control joints in walls at a maximum spacing of 25'-0" c-c. Use 3/4" wide x 3/4" deep triangular rustication strips to form the control joints and provide a groove for sealant. Align the strips directly across from each other on both faces of the wall.
2. Control joints and construction joints in walls shall be sealed with polyurethane-based, high performance low-modulus, non-sag sealant that meets the requirements of ASTM C920, Type S, Grade NS, Class Z5, Use NT. Install per manufacturers instructions. Seal joints at both faces of basement and tunnel walls below grade, and at outside face of other walls.
3. Reinforcement across construction joints shall develop 125% of bar capacity. Where concrete dimensions do not allow full development, terminate in standard hooks.

- E. Installation of Waterstops

1. Install in accordance with manufacturer's written instructions.
2. Splice in accordance with the water stop manufacturer's written instructions, using a thermostatically controlled heating iron. Butt splice unless specifically detailed otherwise.
3. Join waterstops at intersections to provide continuous seal
4. Center waterstop on joint.
5. Secure waterstop in correct position to avoid displacement during concrete placement.
6. Repair or replace damaged waterstop.
7. Place concrete and vibrate to obtain impervious concrete in the vicinity of all joints.
8. Joints in Slabs:
- Ensure that space beneath plastic waterstop in completely filled with concrete.
 - During concrete placement, make a visual inspection of the entire water stop area.
 - Limit concrete placement to elevation of waterstop in first pass, vibrate the concrete under the waterstop, lift the water stop to confirm full consolidation without voids, then place remaining concrete to full height of slab.

- F. Evaluation and acceptance of concrete shall be in accordance with ACI 318-19, Section 26.12 and as follows:

1. A strength test shall be the average of the strengths of at least two (2) 6x12 in. cylinders or at least three 4x8 in. cylinders made from the same sample of concrete and tested at 28 days or at test age designated for f_c.
2. Additional cylinders shall be made as necessary to verify the strength of concrete if structural steel erection will commence sooner than 28 days after concrete placement.
3. Samples for preparing strength test specimens of each concrete mixture placed shall be taken
- at least once a day.
 - at least once for each 150 cy of concrete placed.
 - at least once for each 5,000 sf of surface area for slabs or walls.
4. On a given project, if total volume of concrete is such that frequency of testing would provide fewer than five strength tests for a given concrete mixture, strength test specimens shall be made from at least five randomly selected batches or from each batch if fewer than five batches are used.
5. Perform one slump test for each set of test cylinders taken, following procedures of ASTM C143/C143M.
6. Perform one air test for each set of test cylinders taken, following the procedures of ASTM C231/C231M

030500-POST-INSTALLED ADHESIVE ANCHORS IN CONCRETE

- A. Post-installed adhesive anchor systems in concrete shall meet the requirements of ACI 355.4-19, Acceptance Criteria for Qualification of Post-Installed Adhesive Anchors in Concrete.

- B. Post-installed adhesive anchor systems in concrete shall be one of the following:

1. Hilti HIT-RE 500 V3 Epoxy Adhesive Anchoring System (ICC-ES Report: ESR-3814)
2. Hilti HIT-HY 200-A V3 Adhesive Anchoring System (ICC-ES Report: ESR-4868)
3. Simpson Set-3G Adhesive Anchoring System (ICC-ES Report: ESR-4057)
4. Contractor may submit proposed substitutes meeting ACI 355.4-19 to the Structural Engineer for Approval.

- C. Adhesive anchor systems shall be supplied as a complete system, including, but not limited to:

1. New adhesive cartridges
2. Clean mixing nozzles
3. Properly sized extension tubes
4. Dispensing guns
5. Properly sized hole-cleaning brushes
6. All other manufacturer recommended supplies for properly cleaning and blowing-out the drilled holes
7. A complete set of the Manufacturers Printed Installation Instructions (MPII)

- D. All-threaded rod to be used in adhesive anchor assemblies shall have UNC coarse threads, shall be clean, oil-free, free of loose rust or paint, and shall conform to one of the following material specifications, unless noted otherwise:

1. ASTM A36
2. ASTM A193 Grade B7
3. ASTM A307
4. ASTM F1554
5. ASTM F593 (AISI 304 / 316) - where stainless steel anchors are specified

- E. Compatible nuts and washers shall be furnished with the threaded rod as part of the anchor assembly.

- F. Anchor assemblies (other than stainless steel) shall be hot-dip galvanized in accordance with ASTM A153 Class C, unless noted otherwise. Electroplate galvanizing is not acceptable.

- G. Reinforcing bars to be anchored with adhesive shall conform to ASTM A615 or ASTM A706 and shall be clean, oil-free, and free of loose rust or paint.

- H. Concrete at the time of anchor installation shall have a minimum age of 21 days.

- I. Concrete temperature at the time of adhesive anchor installation shall not be below the minimum recommended by the manufacturer.

- J. Adhesives shall be stored and installed within the temperature ranges recommended by the manufacturer.

- K. Post-installed adhesive anchors shall be installed in accordance with the Manufacturer's Printed Installation Instructions (MPII) by trained personnel. Holes shall be drilled with a rotary impact hammer drill or rock drill with a carbide bit. Diamond core bits are not allowed because they result in holes that are too smooth. Holes shall be thoroughly cleaned using brushes and compressed air in accordance with the MPII, and shall be kept dry and protected from contamination until the adhesive is installed. If a hole becomes wet or contaminated, it shall be thoroughly dried and re-cleaned.

- L. Installed adhesive anchors shall be securely fixed in place to prevent displacement while the adhesive cures. If an anchor is disturbed during curing, it shall be considered damaged, and shall be removed and replaced.

- M. Post-installed adhesive anchors shall not be used in sustained tension applications, such as overhead hangers.

- N. Post-installed adhesive anchors may not be substituted where cast-in anchors are shown on the drawings without prior written approval from the Structural Engineer of Record. Where post-installed adhesive anchors are allowed to be substituted, the installation of the anchors shall be continuously inspected by the Special Inspector. If the requirement for Special Inspection has been waived by the Building Official, and the Owner has decided not to engage a Special Inspector, then the Structural Engineer shall be allowed to continuously observe the installation of the anchors at the Contractor's expense. Inspection and/or observation shall not relieve the Contractor of responsibility for installing the anchors in accordance with the Construction Documents and the MPII.

030501-POST-INSTALLED MECHANICAL EXPANSION ANCHORS OR SCREW ANCHORS IN CONCRETE:

- A. Post-installed expansion anchors or screw anchors in concrete shall be one of the following:

1. Hilti Kwik Bolt TZ Expansion Anchors (ICC-ES Report: ESR-1917)
2. Hilti Kwik HUS-EZ and EZ-1 Screw Anchors (ICC-ES Report: ESR-3027)
3. Simpson Strong-Bolt 2 Expansion Anchors (ICC-ES Report: ESR-3037)
4. Simpson Titen HD Screw Anchors (ICC-ES Report: ESR-2713)
5. Contractor may submit proposed substitutes to the Structural Engineer of Record for approval.

- B. Post-installed expansion anchors or screw anchors in concrete shall be installed in accordance with the Manufacturer's Printed Installation Instructions (MPII), including, but not limited to instructions regarding hole diameter and depth, cleaning the hole, and tightening to the recommended torque.

- C. Post-installed expansion anchors or screw anchors may not be substituted where cast-in anchors or post-installed adhesive anchors are shown on the drawings without prior written approval from the Structural Engineer of Record.

STANDARD CONCRETE ANCHORS						
ANCHOR DIAMETER	3/8"	1/2"	5/8"	3/4"	7/8"	1"
STANDARD MECHANICAL ANCHOR EMBED, UNO (NOTE 1)	3 1/4"	3 1/2"	4 1/2"	5 1/2"	N/A	N/A
STANDARD ADHESIVE ANCHOR EMBED, UNO (NOTE 1)	3 1/4"	4"	5"	6"	8"	10"
MINIMUM SPACING	4"	6"	8"	9"	12"	16"
MINIMUM EDGE DISTANCE	4"	4"	5"	8"	12"	16"
MINIMUM CONCRETE THICKNESS	5"	6"	8"	10"	12"	14"
ALLOWABLE TENSION "T" (LB)"	750"	1,100"	1,450"	2,350"	5,200"	7,800"
ALLOWABLE SHEAR "V" (LB)"	300"	400"	625"	1,150"	1,950"	3,250"

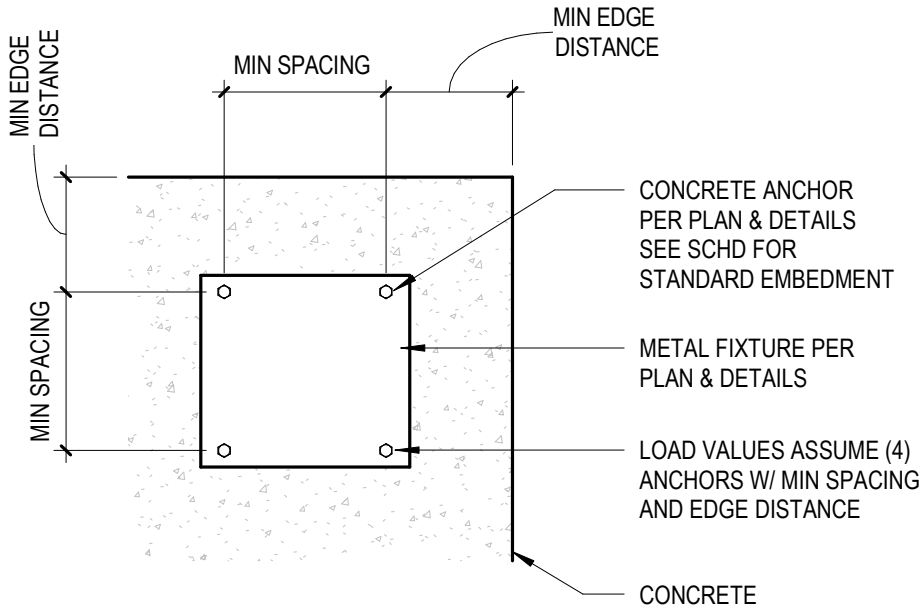
* LOADS ONLY APPLICABLE TO INSTALLATION INTO CRACKED CONCRETE
4,000 ≤ F_c ≤ 8,000 PSI MEETING EMBED, SPACING, AND EDGES DISTANCES
SHOWN. LOADS FOR SINGLE ANCHOR, OUT OF THE GROUP BELOW, WITH SERVICE
LEVEL (ASD) LOADING.

DETAIL NOTES:

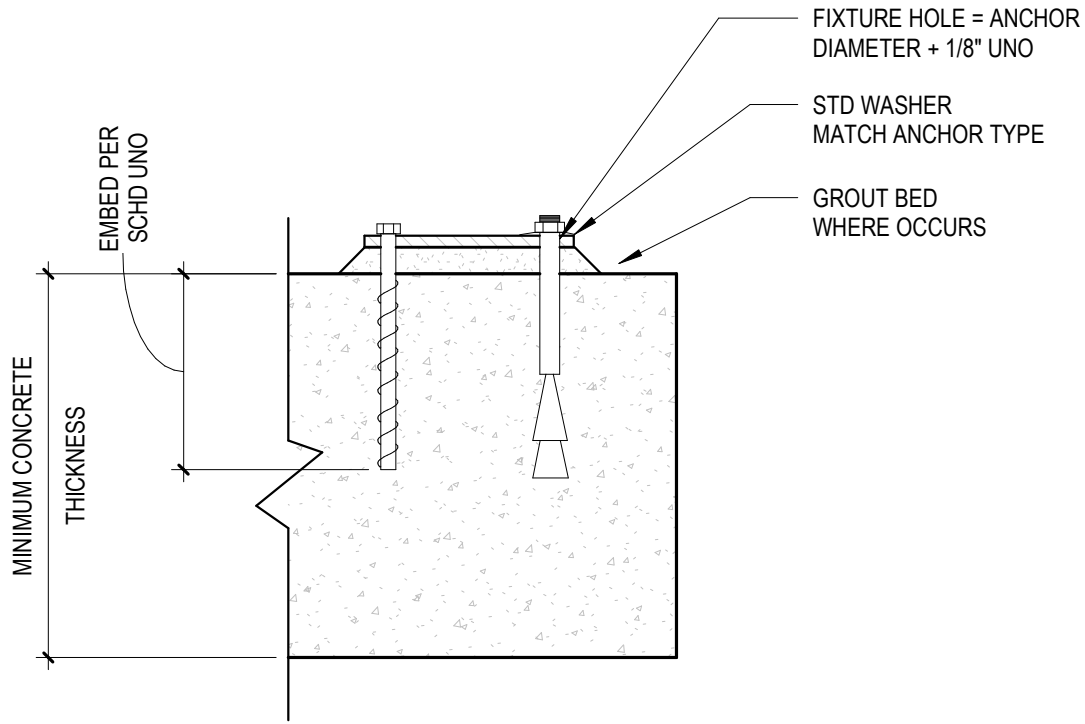
1. Where drawings call for concrete anchors, contractors may choose between expansion, screw or adhesive anchor. Where drawings call fro mechanical anchor, contractors may choose between expansion and screw anchor.
2. All anchors shall receive standard embed, spacing, edge distance, concrete thickness, and load conditions, unless noted otherwise on "S" sheets. Unless noted otherwise, minimum embedment shall be per table above. In no case may the embedment be less than the manufacturers "minimum embedment" from published catalog literature.
3. Install in strict accordance with manufacturer's published recommendations and additional recommendations of ICC evaluation service report.
4. All concrete anchors must be inspected twice:
- After Hole is Drilled and cleaned, and
 - During installation of adhesive and/or mechanical anchor.
5. On drawings, adhesive anchors may also be referred as to epoxy or epoxy set anchors.
6. Adhesive anchors may not be used in overhead applications unless noted otherwise on the "S" sheets.
7. Any adhesive anchor in constant tension or installed in any orientation between horizontal and overhead vertical must be installed and inspected by certified installer/inspector. See division 5 specifications.
8. All concrete anchors shall be stainless steel Type 316 UNO.
9. Do not install adhesive anchors in concrete less than 21 days old.
10. For anchors resisting tension and shear use following equation:
(Actual tension/ allowable tension)+ (Actual shear /Allowable shear) <1.00.

CONCRETE ANCHOR SCHEDULE

NOTE: AN INTERMEDIATE HYDROSTATIC TEST OF THE FINISHED CONCRETE FOUNDATION & SLAB SHALL BE COMPLETED BEFORE TANK ERECTION TO VERIFY THE FOUNDATION IS WATERTIGHT. FOLLOW SAME SPECIFICATION AS THE FINAL HYDROSTATIC TEST



TOP VIEW OF ANCHOR GROUP INTO CONCRETE



SECTION VIEW INTO CONCRETE

BID SET

DRAWN BY: DJM	JOB DATE: 03-19-26	BAR IS ONE INCH ON OFFICIAL DRAWINGS 0 1" IF NOT ONE INCH, ADJUST SCALE ACCORDINGLY
APPROVED: DJM	JOB NUMBER: 2503420	
CAD DATE: 9/1/2026 3:11:46 PM		
CAD FILE:		

NO	DATE	BY	REVISION DESCRIPTION



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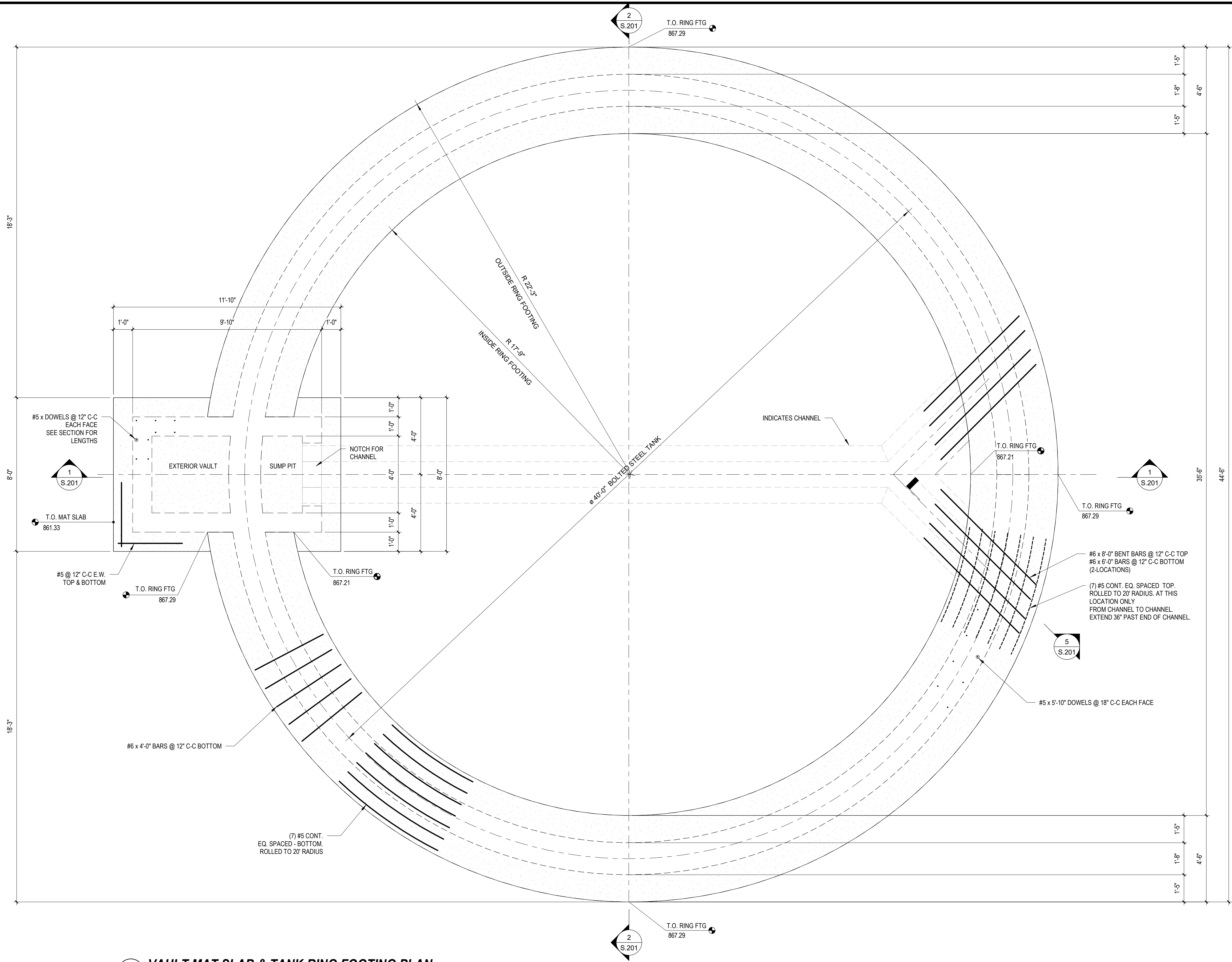
FLOW EQUALIZATION IMPROVEMENTS
CITY OF MARSHALLTOWN
MARSHALLTOWN, IOWA

S-STRUCTURAL

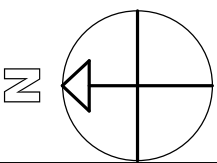
STRUCTURAL NOTES

SHEET NO.

S.100



1 VAULT MAT SLAB & TANK RING FOOTING PLAN
S.101 3/8" = 1'-0"



BID SET

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CAD DATE:	9/1/2026 3:11:48 PM			
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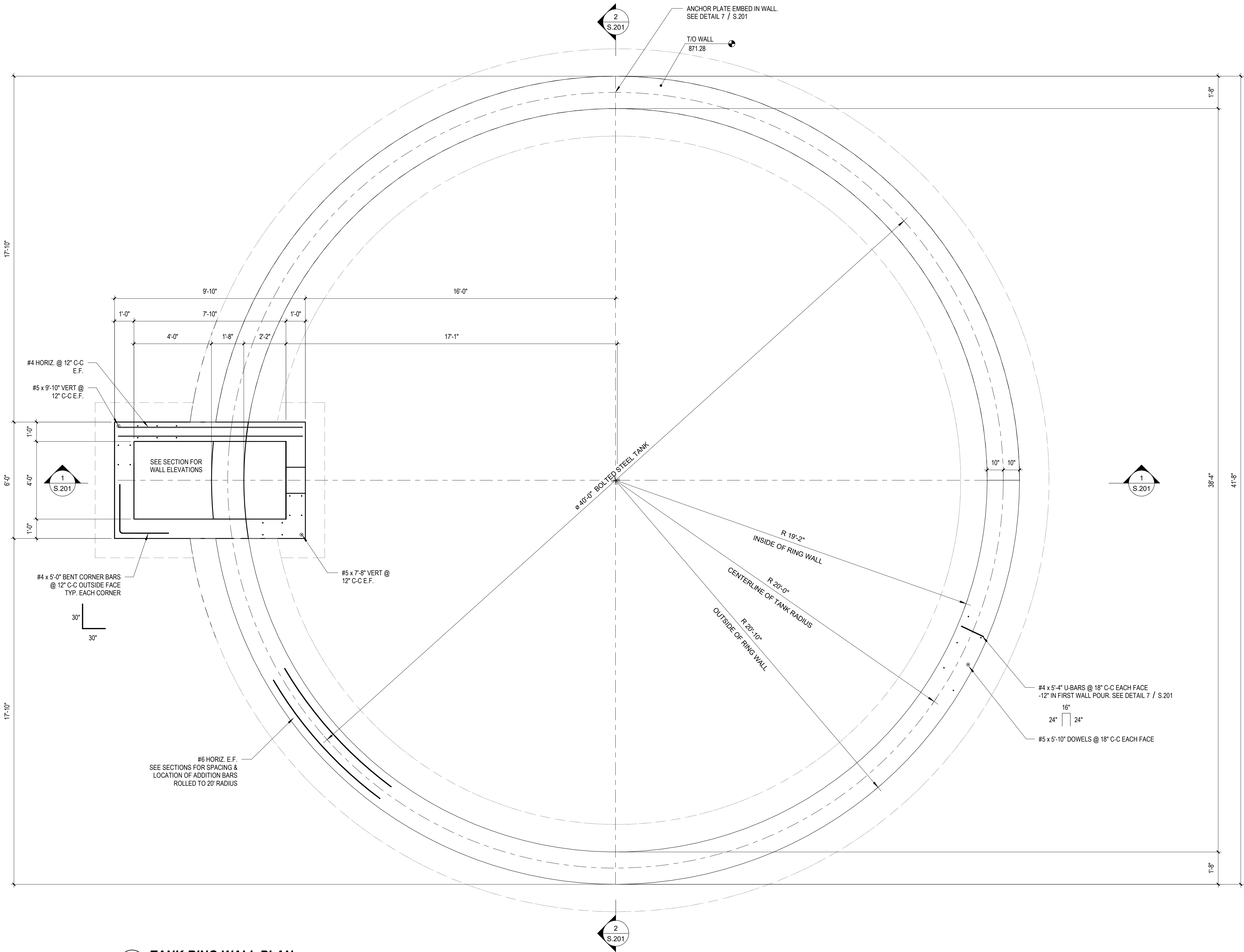


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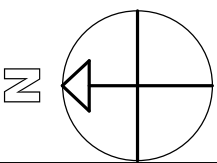
FLOW EQUALIZATION IMPROVEMENTS
CITY OF MARSHALLTOWN
MARSHALLTOWN, IOWA

S-STRUCTURAL
TANK FOUNDATION PLAN

SHEET NO.
S.101



1
S.102
TANK RING WALL PLAN
3/8" = 1'-0"



BID SET

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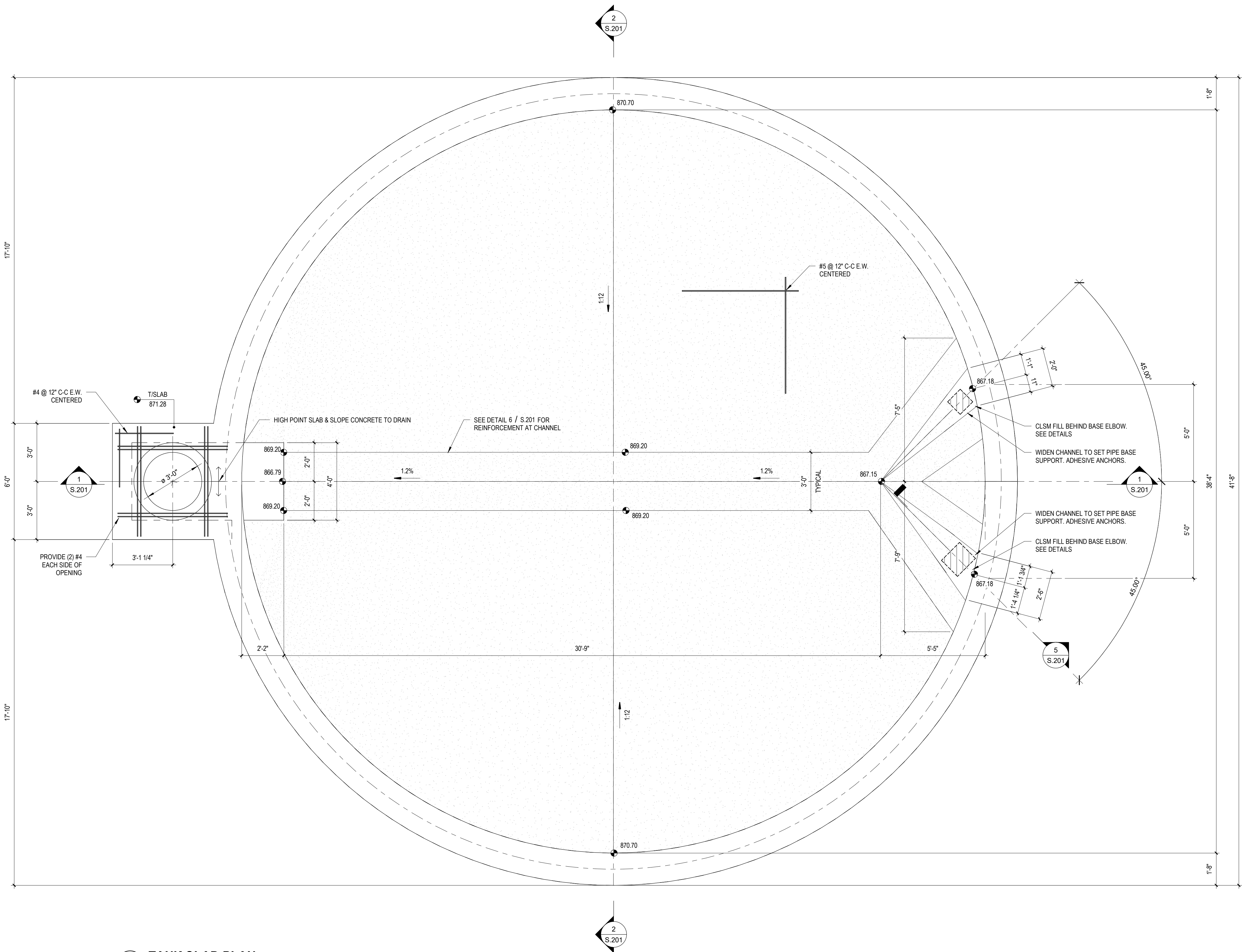
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MARSHALLTOWN, IOWA

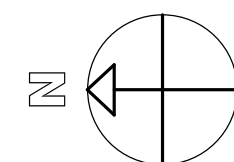
S-STRUCTURAL

TANK WALL PLAN

SHEET NO.
S.102



1 TANK SLAB PLAN
S.103 3/8" = 1'-0"



BID SET

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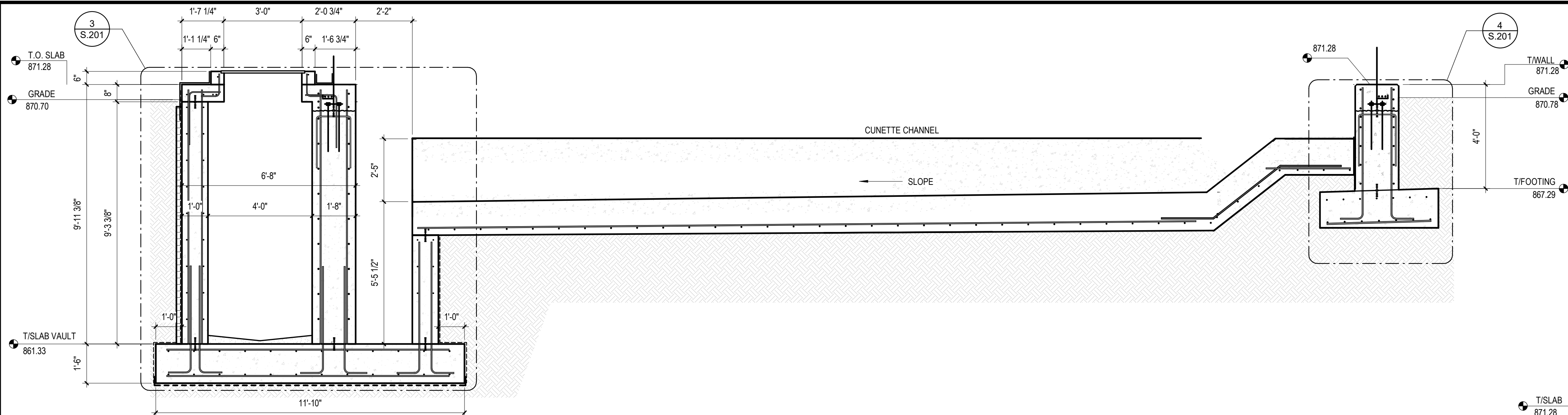


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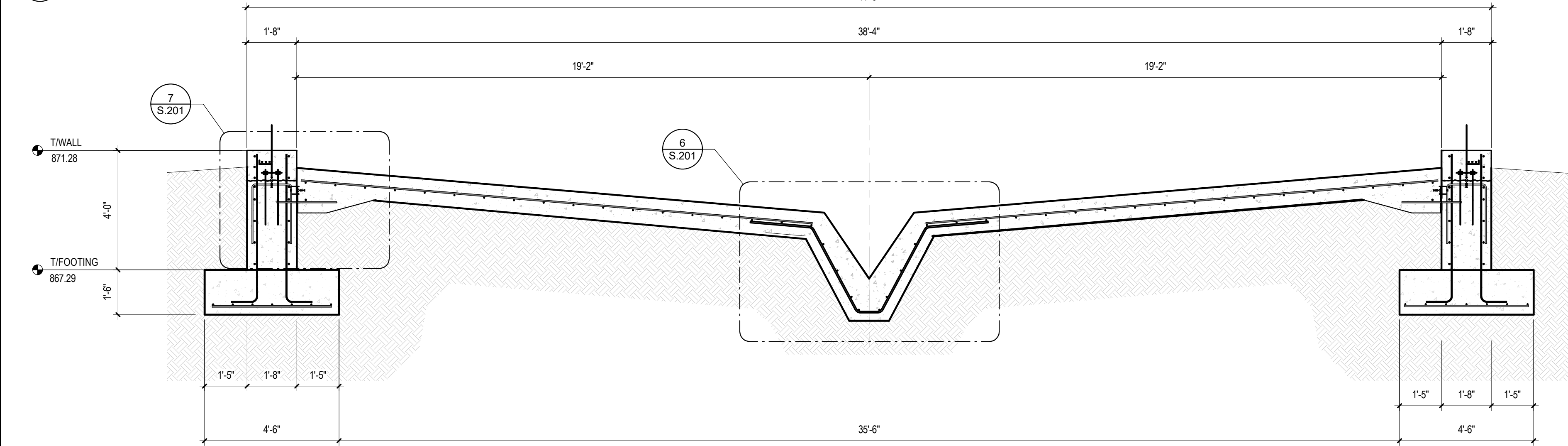
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CITY OF MARSHALLTOWN
MARSHALLTOWN, IOWA

S-STRUCTURAL
TANK SLAB PLAN

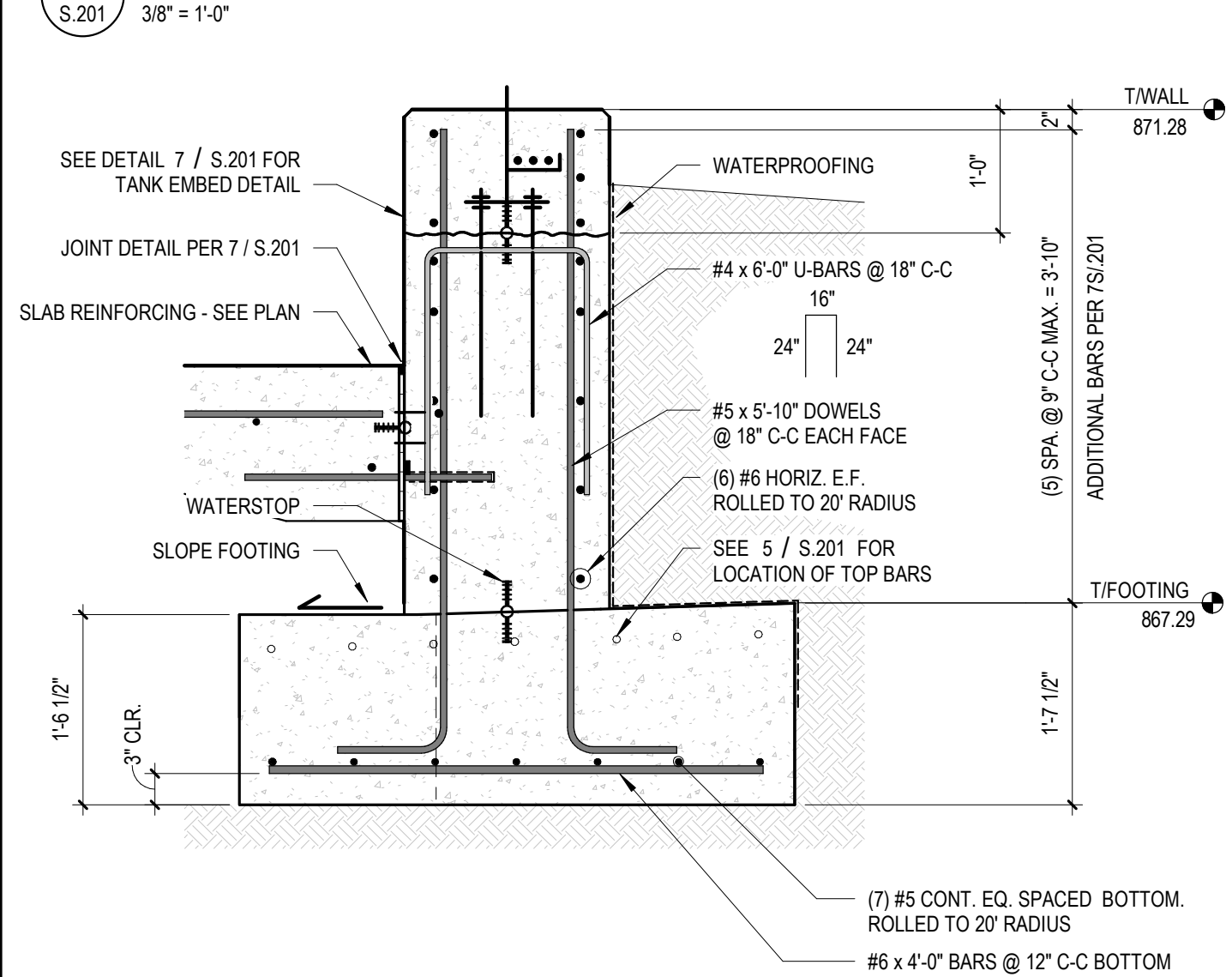
SHEET NO.
S.103



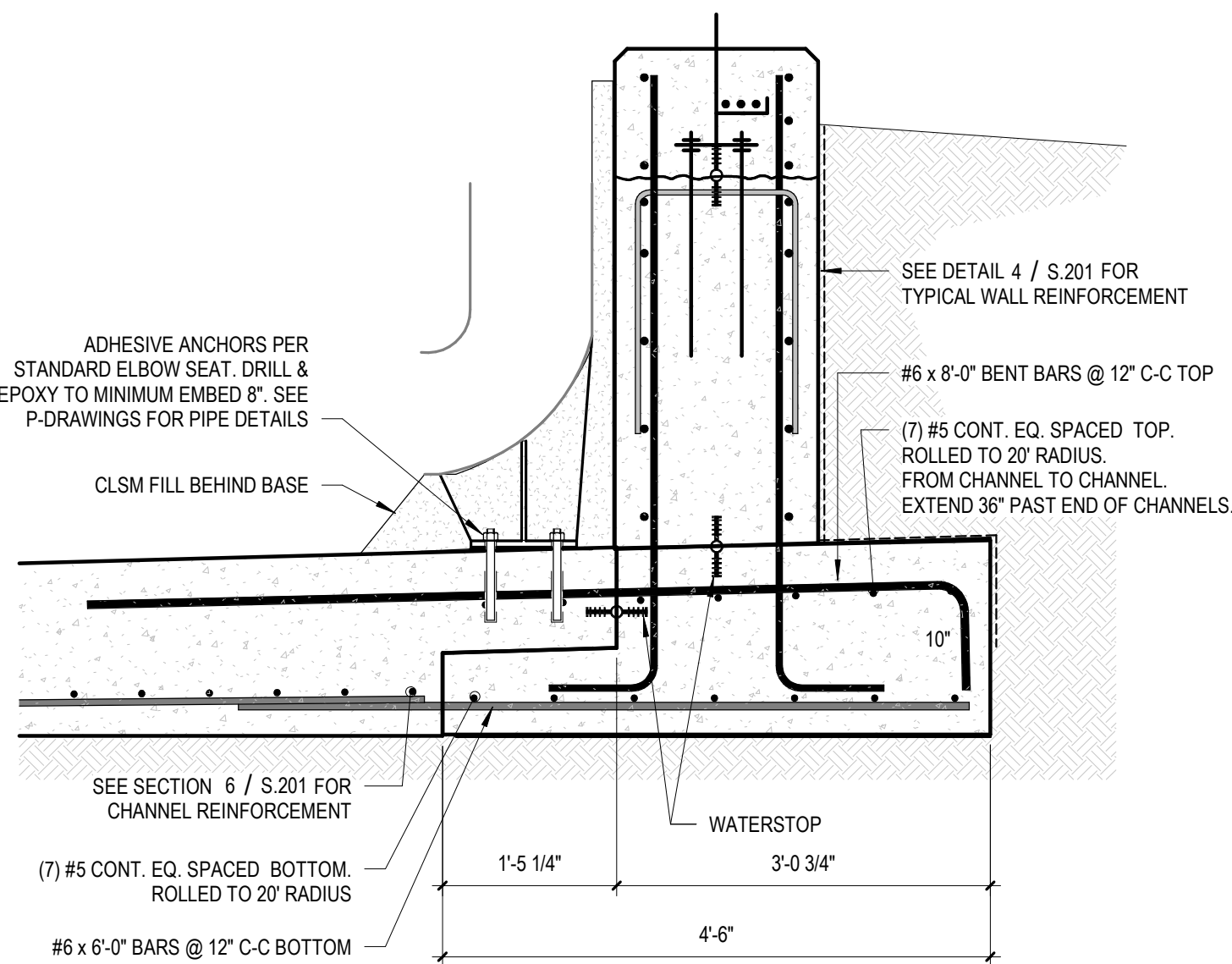
1 TANK AND VAULT CROSS SECTION
S.201 3/8" = 1'-0"



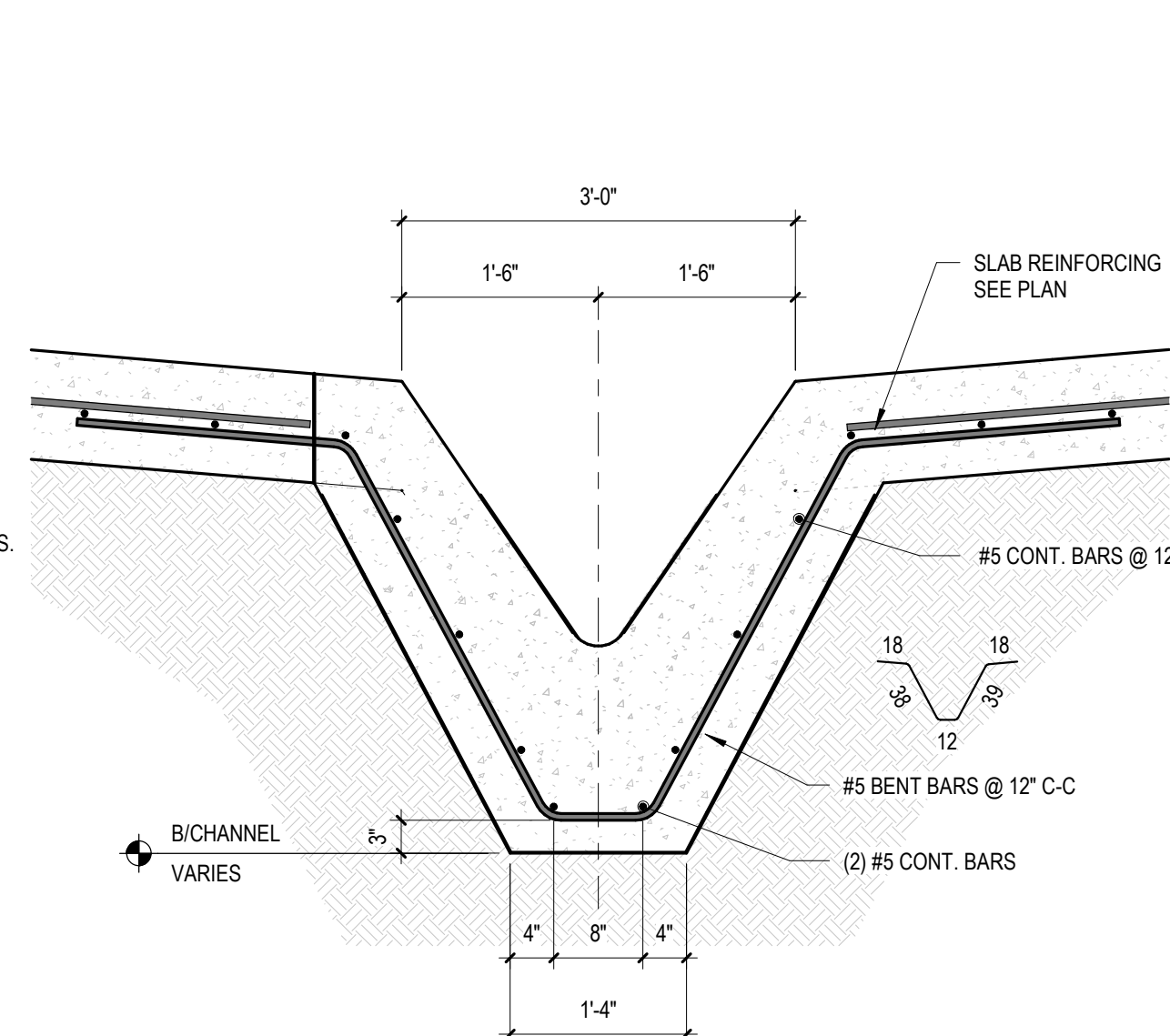
2 TANK CROSS SECTION
S.201 3/8" = 1'-0"



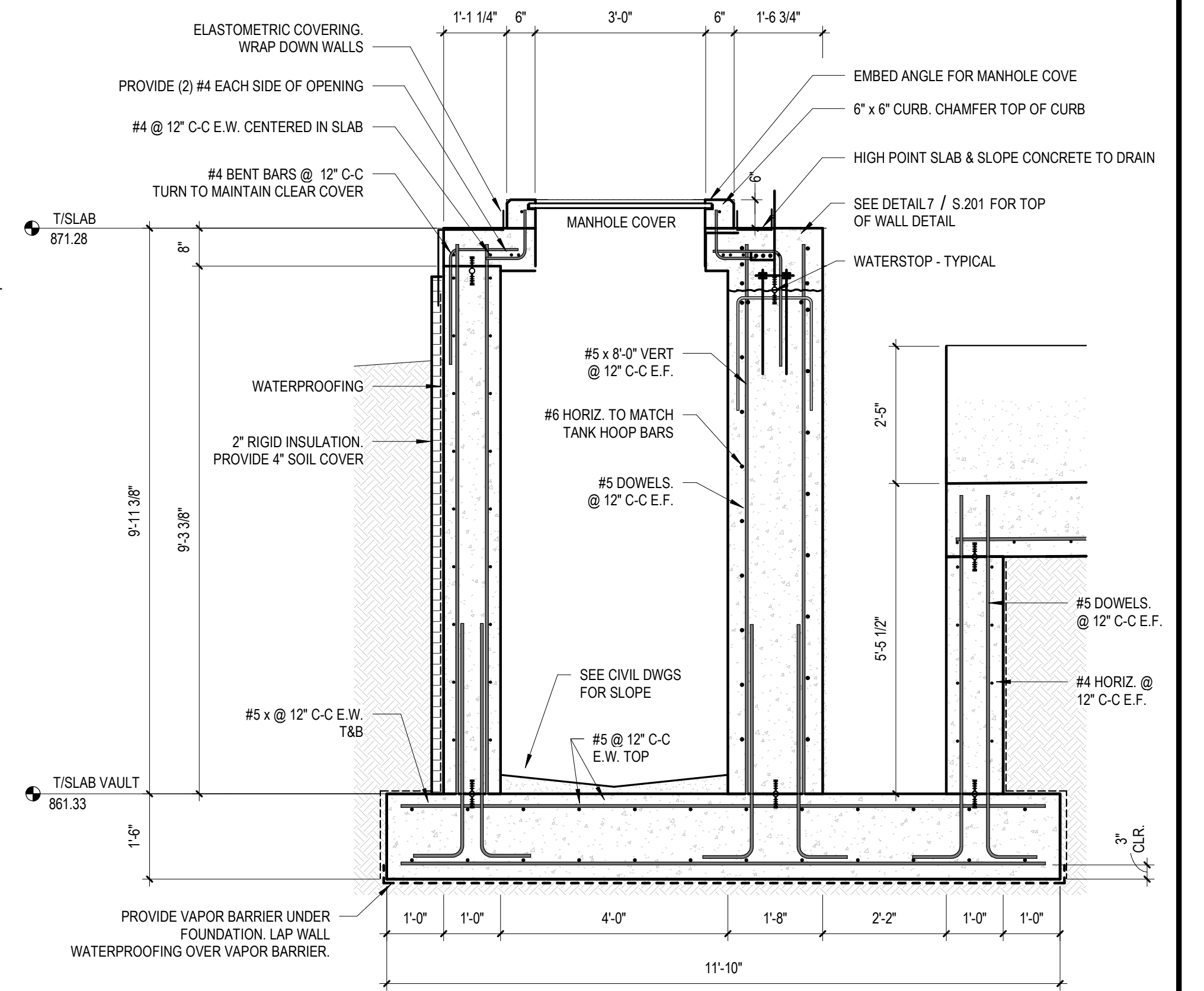
4 TYPICAL TANK FOUNDATION SECTION
S.201 3/4" = 1'-0"



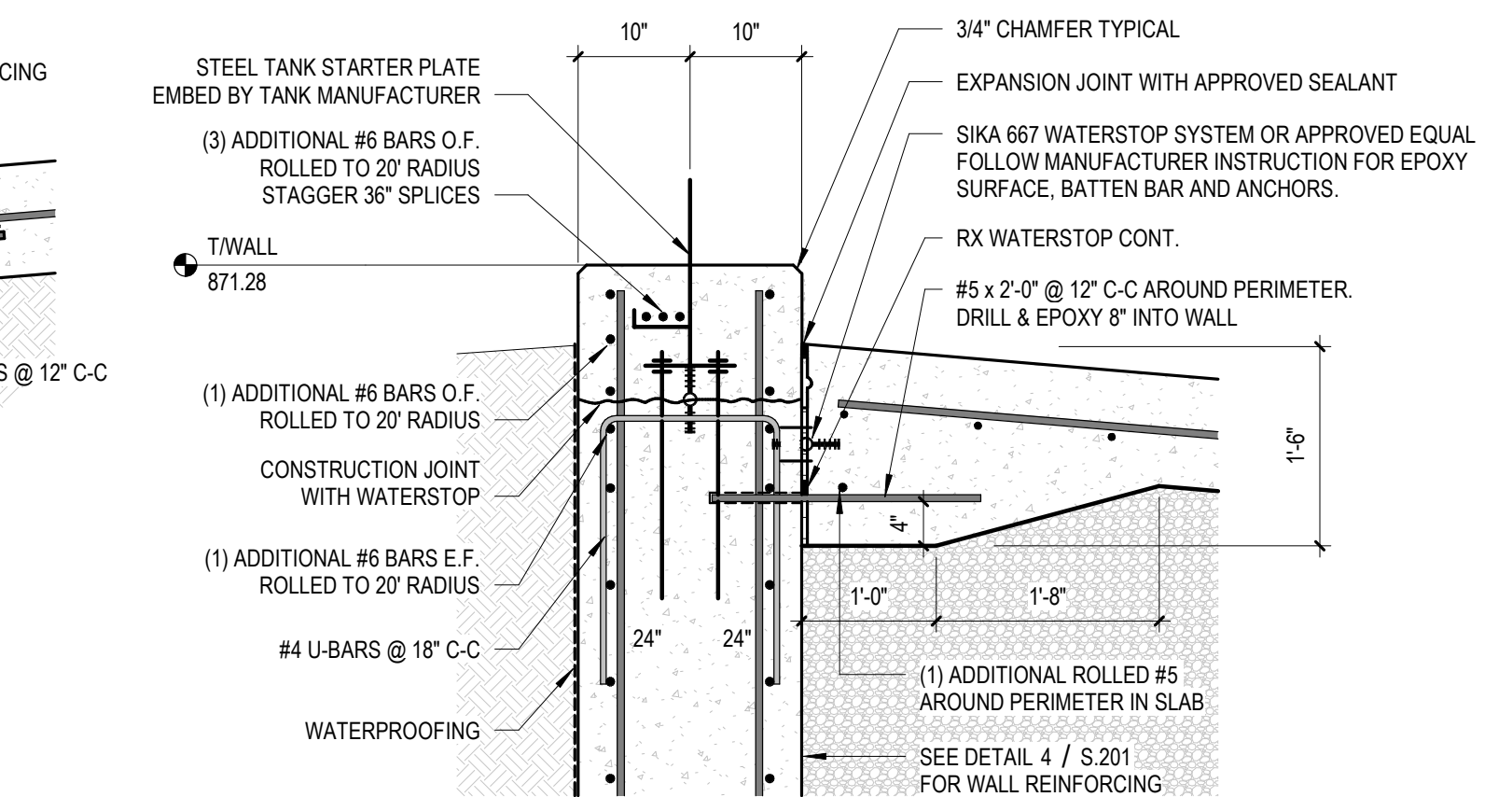
5 SECTION AT CHANNEL
S.201 3/4" = 1'-0"



6 CHANNEL SECTION
S.201 3/4" = 1'-0"



3 VAULT SECTION
S.201 1/2" = 1'-0"



7 TOP OF TANK WALL DETAIL
S.201 3/4" = 1'-0"

BID SET

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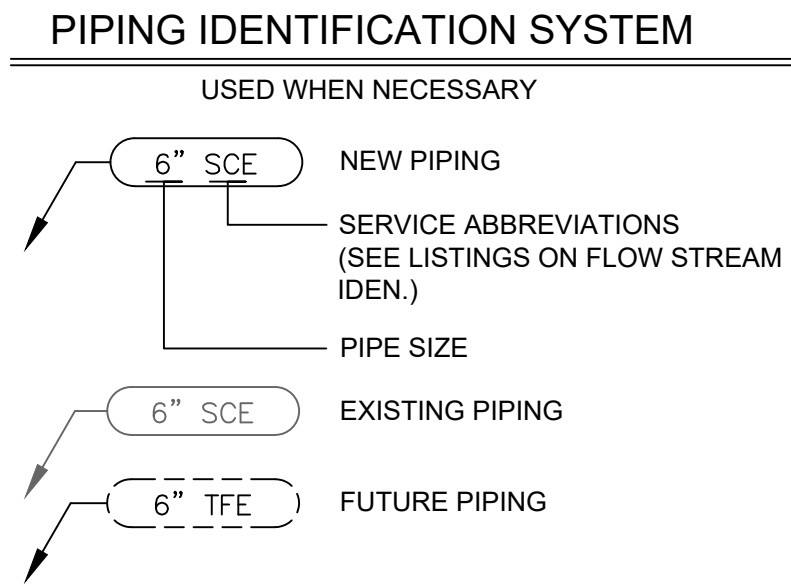
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FLOW EQUALIZATION IMPROVEMENTS
CITY OF MARSHALLTOWN
MARSHALLTOWN, IOWA

S-STRUCTURAL
SECTIONS & DETAILS

SHEET NO.
S.201

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AB	AERATION BLOWER
AF	ADJUSTABLE FREQUENCY DRIVE
AH	ACCESS HATCH
AU/AUH	AIR HANDLING UNIT
BC	BELT CONVEYOR
BCV	BALL CHECK VALVE
BFP	BELT FILTER PRESS
BFPF	BELT FILTER PRESS FILTRATE
BFV	BUTTERFLY VALVE
BP	BOOSTER PUMP
BSL	BLENDED SLUDGE
BV	BALL VALVE
CAV	COMBINATION AIR VALVE
CD	CENTRIFUGE DEWATERING
CR	CRANE
CP	CONTROL PANEL
CV	CHECK VALVE
DR	DRIVE
DS	DIGESTED SLUDGE
DTP	DIGESTER TRANSFER PUMP
EF	EXHAUST FAN
EP	EFFLUENT PUMP
FEB	FLOW EQUALIZATION BASIN
FECL	FERROUS CHLORIDE
FM	FLOW METER
GP	GRIT PUMP
GR	GRINDER
GS	GRIT SCREW CONVEYOR
GU	GRIT UNIT
HPF	HORIZONTAL PRESSURE FILTER
HY	HYDRANT
IN	INCUBATOR
IF	INSERTION FLOWMETER
LE	LAB EQUIPMENT
LT	LEVEL TRANSMITTER
MCC	MOTOR CONTROL CENTER
MP	METERING PUMP
MS	MECHANICAL FINE SCREEN
MX	MIXER

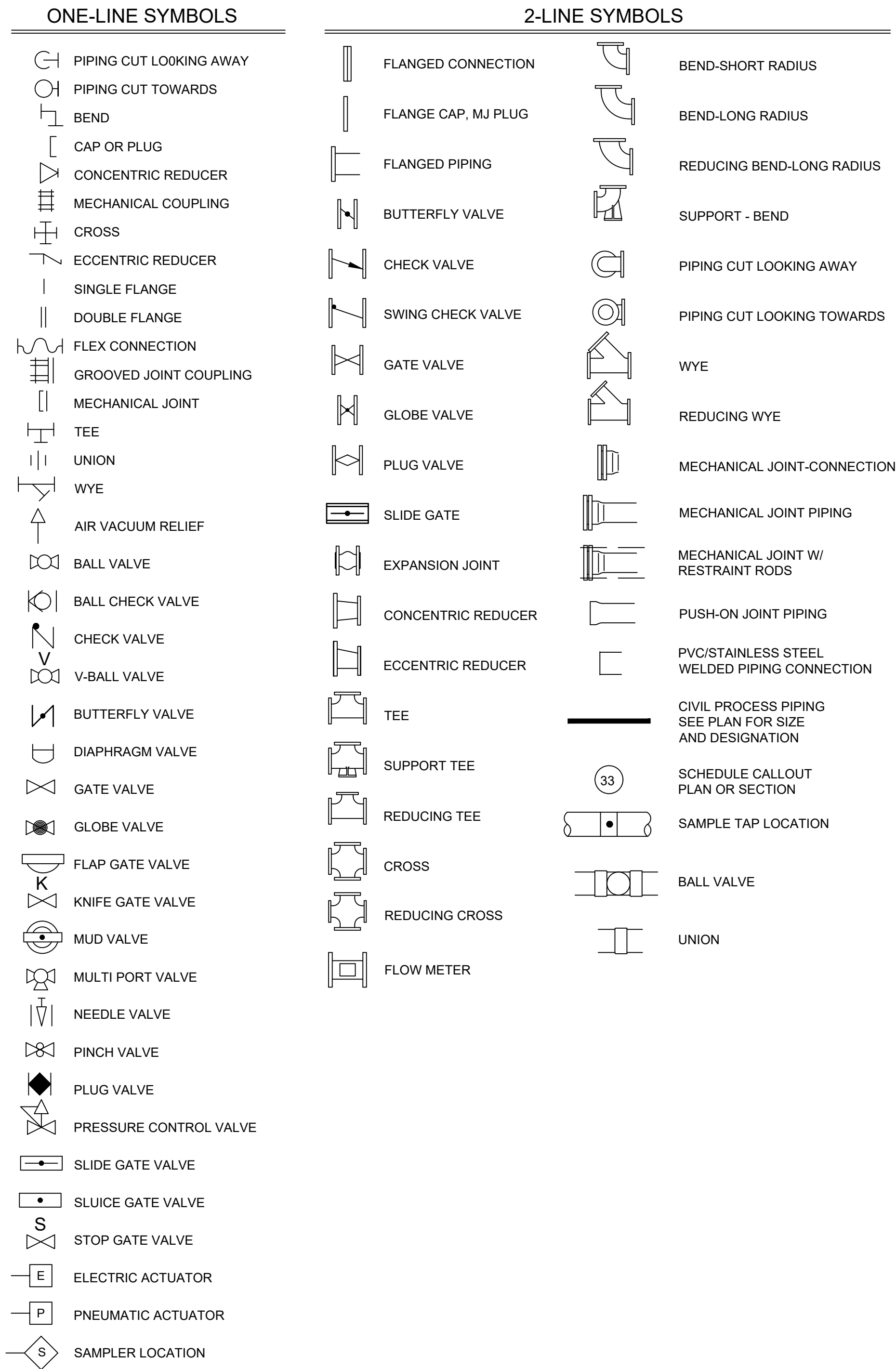


OV	OVERFLOW
PEW	PLANT EFFLUENT REUSE WATER
PF	PARSHALL FLUME
PNV	PINCH VALVE
POLY	POLYMER
PSL	PRIMARY SLUDGE
PV	PLUG VALVE
RO	REVERSE OSMOSIS SYSTEM
RDT	ROTARY DRUM THICKENER
RDTF	ROTARY DRUM THICKENER FILTRATE
RP	RETURN PUMP
SA	SAMPLER
SAN	SANITARY
SC	SCREEN CONVEYOR
SCL	SECONDARY CLARIFIER
SD	SLUDGE DRYER
SDC	SLUDGE SCREW CONVEYOR
SG	SLIDE GATE/SLUICE GATE
SPM	SUBMERSIBLE PROPELLER MIXER
SP	SLUDGE PUMP
STR	STRAINER
TK	TANK
TS	THICKENED SLUDGE
TSP	THICKENED SLUDGE PUMP
TWAS	THICKENED WASTE ACTIVATED SLUDGE
TWASP	THICKENED WASTE ACTIVATED SLUDGE PUMP
UNO	UNLESS NOTED OTHERWISE
UV	ULTRAVIOLET DISINFECTION
VCP	VITRIFIED CLAY PIPE
VPF	VERTICAL PRESSURE FILTER
WAS	WASTE ACTIVATED SLUDGE
WASP	WASTE ACTIVATED SLUDGE PUMP
WP	WASTE PUMP

NOTE:

NOT ALL ABBREVIATIONS OR SYMBOLS SHOWN IN THESE LISTS MAY BE USED IN THIS PROJECT. CONTACT ENGINEER FOR CLARIFICATION OF ANY DISCREPANCIES.

PROCESS SYMBOLS



GENERAL PROCESS NOTES:

- SOME EXISTING PIPING AND EQUIPMENT HAS BEEN OMITTED FROM PROCESS DRAWINGS FOR CLARITY. CONTRACTOR TO VERIFY ALL EXISTING INFORMATION PRIOR TO STARTING WORK.
- SCREENED (LIGHT) DELINEATION SHOWN ON PROCESS SHEETS DENOTES EXISTING CONDITIONS. "SCREENED" INFORMATION WAS TAKEN FROM PREVIOUS CONSTRUCTION DRAWINGS AND FIELD SURVEY. IS FOR REFERENCE ONLY, AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO ORDERING OF MATERIALS AND BEGINNING CONSTRUCTION. "BOLD" DELINEATION IS NEW WORK TO BE CONSTRUCTED UNDER THIS CONTRACT.
- CERTAIN TANK COMPONENTS AND ACCESSORIES SHOWN ON THE PROCESS DRAWINGS ARE PROVIDED AND/OR INSTALLED AS PART OF THE BOLTED STEEL TANK SYSTEM. REFER TO SPECIFICATION SECTION 33 3813 FOR TANK MANUFACTURER SCOPE AND REQUIREMENTS. CONTRACTOR SHALL COORDINATE LIMITS OF SUPPLY AND INSTALLATION, DIMENSIONS, CONNECTIONS, AND INTERFACES WITH THE TANK MANUFACTURER AND APPROVED SHOP DRAWINGS PRIOR TO FABRICATION OR INSTALLATION OF ADJACENT WORK.
- NOT ALL INSTRUMENTATION AND ACCESSORIES PROVIDED BY EQUIPMENT MANUFACTURERS ARE SHOWN. SEE E DRAWINGS AND SPECIFICATIONS FOR MORE DETAILS.
- CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO ORDERING MATERIALS AND BEGINNING FABRICATION. REPORT ANY SIGNIFICANT DISCREPANCIES TO OWNER AND ENGINEER.
- FLANGE ADAPTORS MAY BE USED WHERE APPROVED BY ENGINEER. FLANGE ADAPTORS SHALL BE PROVIDED AS NECESSARY TO FACILITATE CONVENIENT REMOVAL OF VALVES/EQUIPMENT. REFER TO SPECIFICATION SECTIONS 22 1116.01 AND 33 1416 FOR COMPLETE REQUIREMENTS.
- ALL NEW PIPING SHALL BE PRESSURE TESTED IN ACCORDANCE WITH SPECIFICATION SECTION 22 1117. AFTER THE PIPING HAS BEEN CLEANED, EACH LEAK WHICH IS DISCOVERED WITHIN THE MAINTENANCE BONDING PERIOD SHALL BE REPAIRED AT THE EXPENSE OF THE CONTRACTOR.
- PRIOR TO ORDERING MATERIALS OR PROCEEDING WITH INSTALLATION, THE CONTRACTOR SHALL FIELD VERIFY AND MEASURE ALL TIE-IN LOCATIONS AND CONFIRM THE LOCATION, SIZE, AND ORIENTATION OF ALL EXISTING PIPING TO WHICH NEW PIPING WILL BE CONNECTED. THE CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING ANY DISCREPANCIES BETWEEN THE EXISTING CONDITIONS AND THE CONTRACT DOCUMENTS. ANY VARIATIONS OR CONFLICTS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO FABRICATION OR MATERIAL PROCUREMENT.
- COORDINATE ALL TANK-MOUNTED PIPE SUPPORTS AND ATTACHMENT LOCATIONS WITH TANK MANUFACTURER. FIELD DRILLING, WELDING, OR MODIFICATION OF TANK COMPONENTS IS NOT PERMITTED WITHOUT TANK MANUFACTURER APPROVAL.
- EXISTING PIPING, EQUIPMENT, STRUCTURAL FEATURES, AND DIMENSIONS SHOWN WITHIN EXISTING FACILITIES ARE BASED ON AVAILABLE RECORD DRAWINGS AND LIMITED FIELD OBSERVATIONS. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS, DIMENSIONS, ELEVATIONS, AND CONNECTION LOCATIONS PRIOR TO FABRICATION OF NEW PIPING. COORDINATE NEW PIPING, VALVES, SUPPORTS, AND APPURTENANCES WITH EXISTING FACILITIES AND MAINTAIN REQUIRED ACCESS TO EXISTING EQUIPMENT, VALVES, AND OPERATING AREAS. REPORT CONFLICTS TO ENGINEER PRIOR TO FABRICATION OR INSTALLATION.
- CONTRACTOR SHALL COORDINATE CONNECTIONS TO AND MODIFICATIONS OF EXISTING PROCESS PIPING WITH OWNER. EXISTING FACILITIES SHALL REMAIN IN SERVICE EXCEPT DURING OWNER-APPROVED SHUTDOWNS. CONTRACTOR SHALL SUBMIT PROPOSED SHUTDOWN SEQUENCE AND DURATION IN ACCORDANCE WITH THE CONTRACT DOCUMENTS PRIOR TO PERFORMING WORK AFFECTING EXISTING OPERATIONS.

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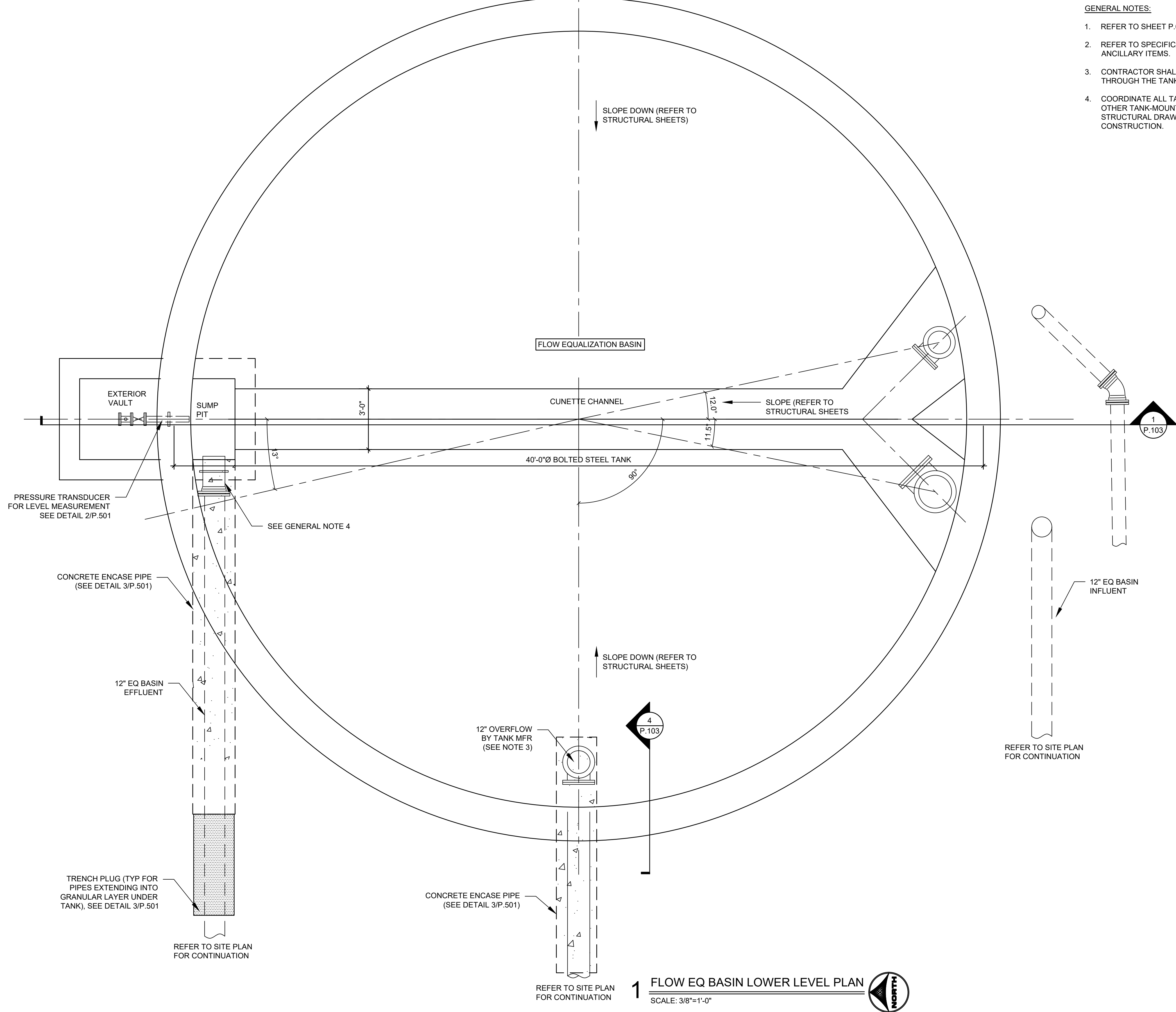


FLOW EQUALIZATION IMPROVEMENTS
CITY OF MARSHALLTOWN
MARSHALLTOWN, IOWA

P-PROCESS
PROCESS LEGEND & ABBREVIATIONS

SHEET NO.
P.001

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GENERAL NOTES:

1. REFER TO SHEET P.001 FOR ADDITIONAL GENERAL NOTES FOR PROCESS.
2. REFER TO SPECIFICATION SECTION 33 3613 FOR BOLTED STEEL TANK REQUIREMENTS AND ANCILLARY ITEMS.
3. CONTRACTOR SHALL CONNECT TO OVERFLOW WEIR WITH DUCTILE IRON PIPING EXTENDED THROUGH THE TANK FLOOR, AS INDICATED.
4. COORDINATE ALL TANK WALL AND FLOOR PENETRATIONS, MANWAYS, PIPE SUPPORTS, AND OTHER TANK-MOUNTED ACCESSORIES WITH THE BOLTED STEEL TANK MANUFACTURER, STRUCTURAL DRAWINGS, AND APPROVED SHOP DRAWINGS PRIOR TO FABRICATION AND CONSTRUCTION.

1 FLOW EQ BASIN LOWER LEVEL PLAN
SCALE: 3/8"=1'-0"



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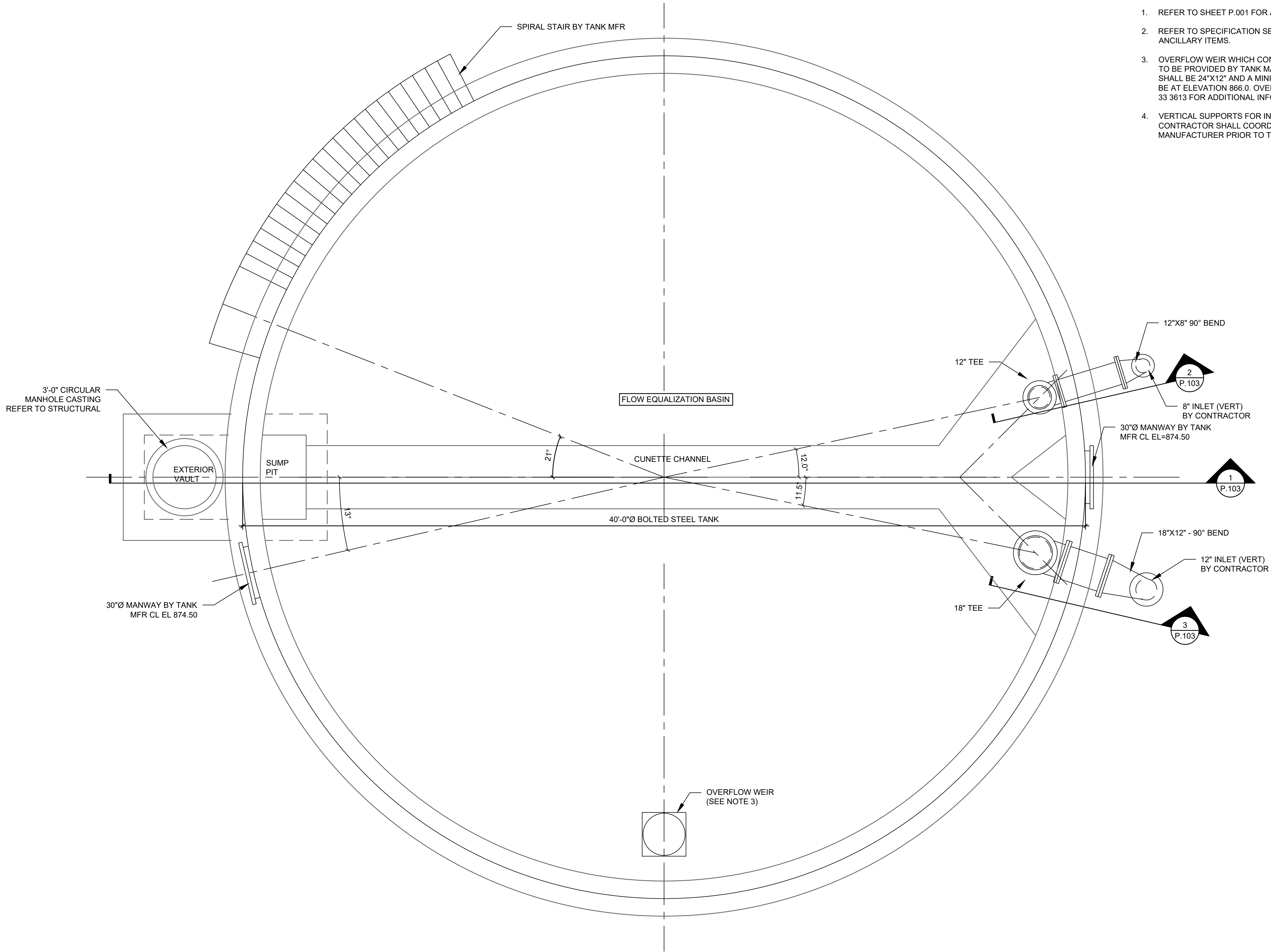
FLOW EQUALIZATION IMPROVEMENTS
CITY OF MARSHALLTOWN
MARSHALLTOWN, IOWA

P-PROCESS
TANK PIPING PLAN - LOWER LEVEL

BID SET

SHEET NO.
P.101

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- GENERAL NOTES:
- REFER TO SHEET P.001 FOR ADDITIONAL GENERAL NOTES FOR PROCESS.
 - REFER TO SPECIFICATION SECTION 33 3613 FOR BOLTED STEEL TANK REQUIREMENTS AND ANCILLARY ITEMS.
 - OVERFLOW WEIR WHICH CONNECTS TO TOP OF OVERFLOW PIPE AND ASSOCIATED SUPPORTS TO BE PROVIDED BY TANK MANUFACTURER. OVERFLOW WEIR REDUCING CIRCULAR CONE SHALL BE 24"x12" AND A MINIMUM OF 18" LONG. THE TOP OF THE OVERFLOW WEIR CONE SHALL BE AT ELEVATION 866.0. OVERFLOW PIPE BY CONTRACTOR. REFER TO SPECIFICATION SECTION 33 3613 FOR ADDITIONAL INFORMATION.
 - VERTICAL SUPPORTS FOR INLET PIPES AND 12" OVERFLOW PIPE BY TANK MANUFACTURER. CONTRACTOR SHALL COORDINATE PIPE BRACE ATTACHMENT POINTS WITH TANK MANUFACTURER PRIOR TO TANK FABRICATION.

1 FLOW EQ BASIN UPPER LEVEL PLAN
SCALE: 3/8"=1'-0"



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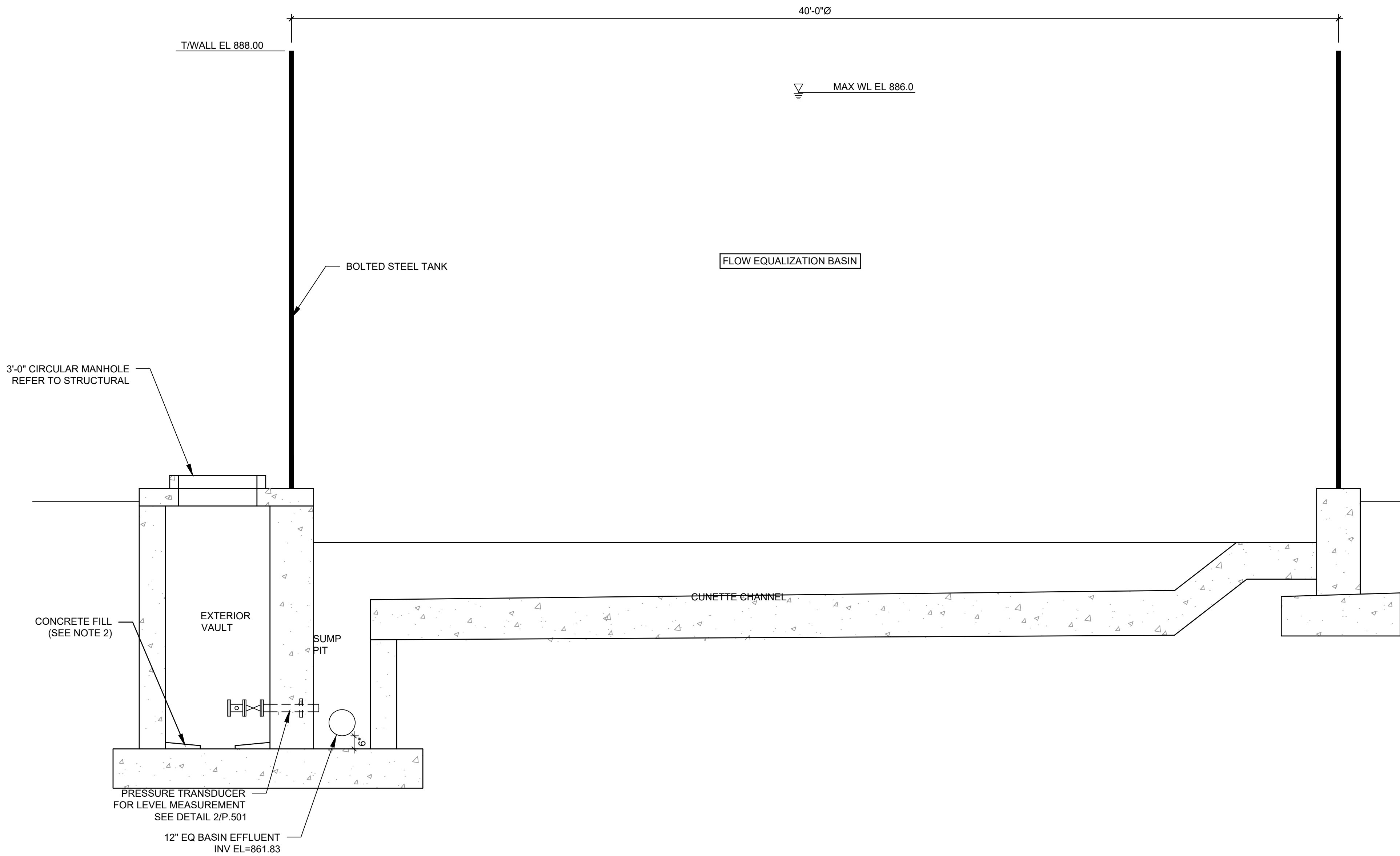
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CITY OF MARSHALLTOWN
MARSHALLTOWN, IOWA

P-PROCESS
TANK PIPING PLAN - UPPER LEVEL

SHEET NO.
P.102

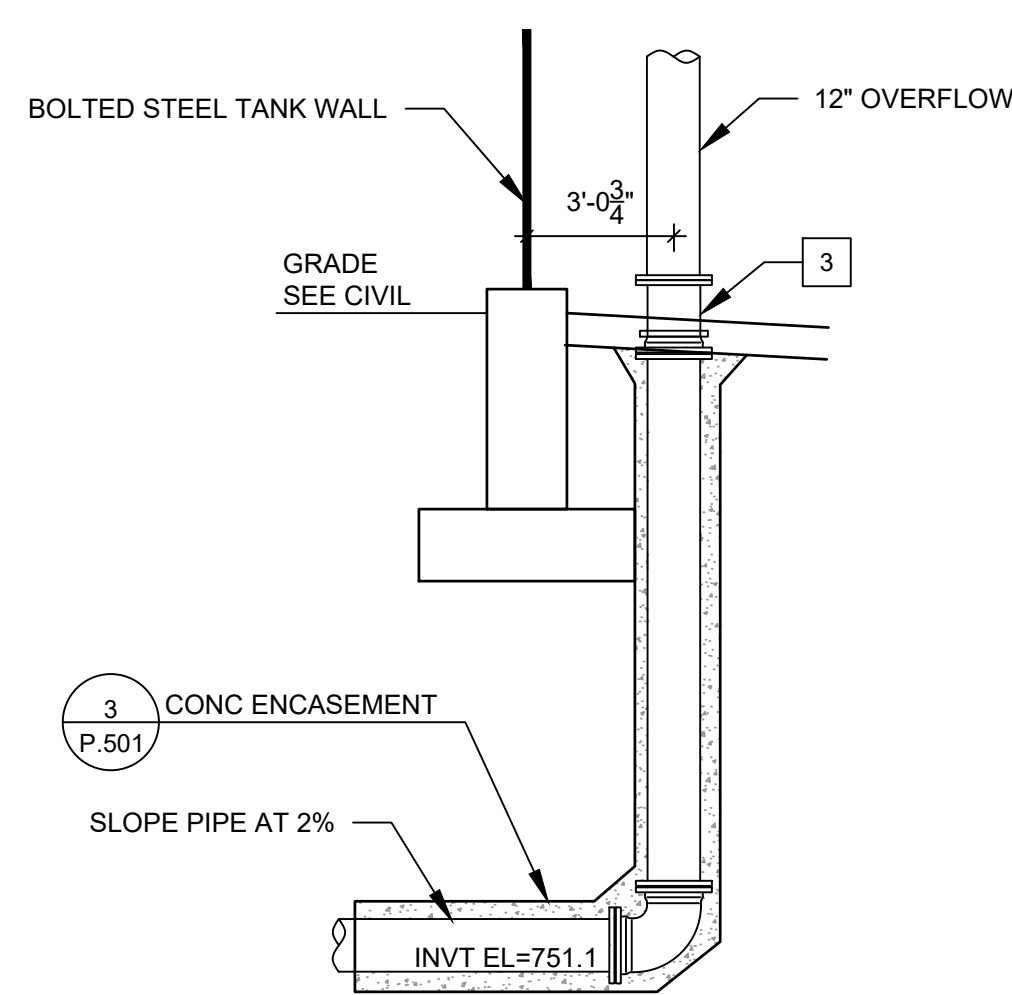
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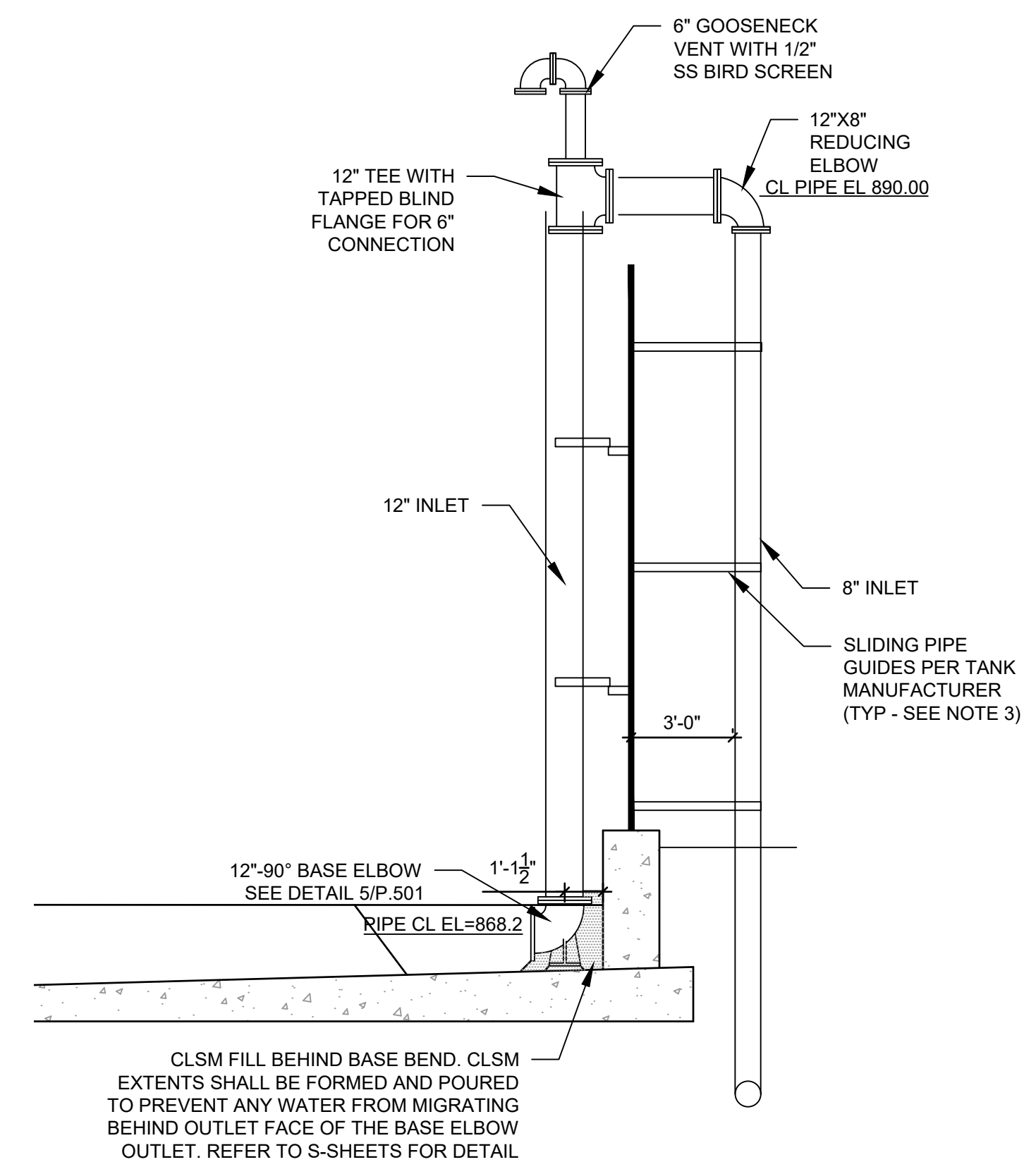
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GENERAL NOTES:

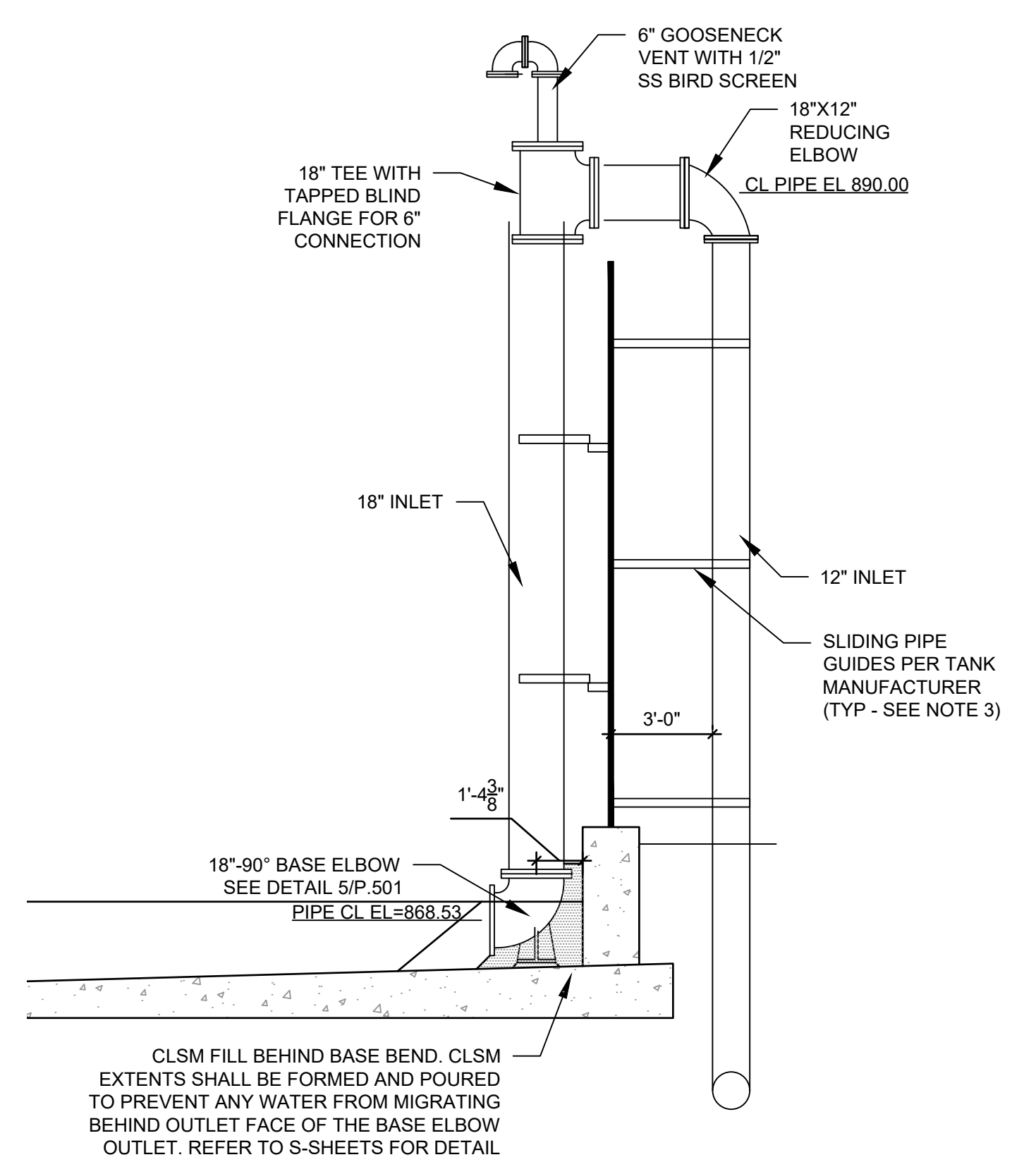
- REFER TO SHEET P.001 FOR ADDITIONAL GENERAL NOTES FOR PROCESS.
- ADD SLOPING CONCRETE FILL IN BOTTOM OF EXTERIOR VAULT. NO FILL IN 15"X15" AREA DIRECTLY BELOW MANHOLE CASTING. 1-1/2" MIN THICKNESS AT FLAT AREA SLOPING UP TO 3" AT HIGH POINT AROUND PERIMETER.
- TANK-MOUNTED PIPE SUPPORTS, GUIDE, BRACKETS, AND ATTACHMENTS SHALL BE PROVIDED BY THE BOLTED STEEL TANK MANUFACTURER. PROCESS PIPING CONTRACTOR SHALL COORDINATE FINAL PIPING GEOMETRY, SUPPORT LOCATIONS, AND CONNECTION DETAILS WITH THE TANK MANUFACTURER AND SHOP DRAWINGS PRIOR TO FABRICATION AND INSTALLATION.



4 OVERFLOW PIPE ELEVATION
SCALE: 1/4"=1'-0"



2 INLET PIPE ELEVATION
SCALE: 1/4"=1'-0"



3 INLET PIPE ELEVATION
SCALE: 1/4"=1'-0"

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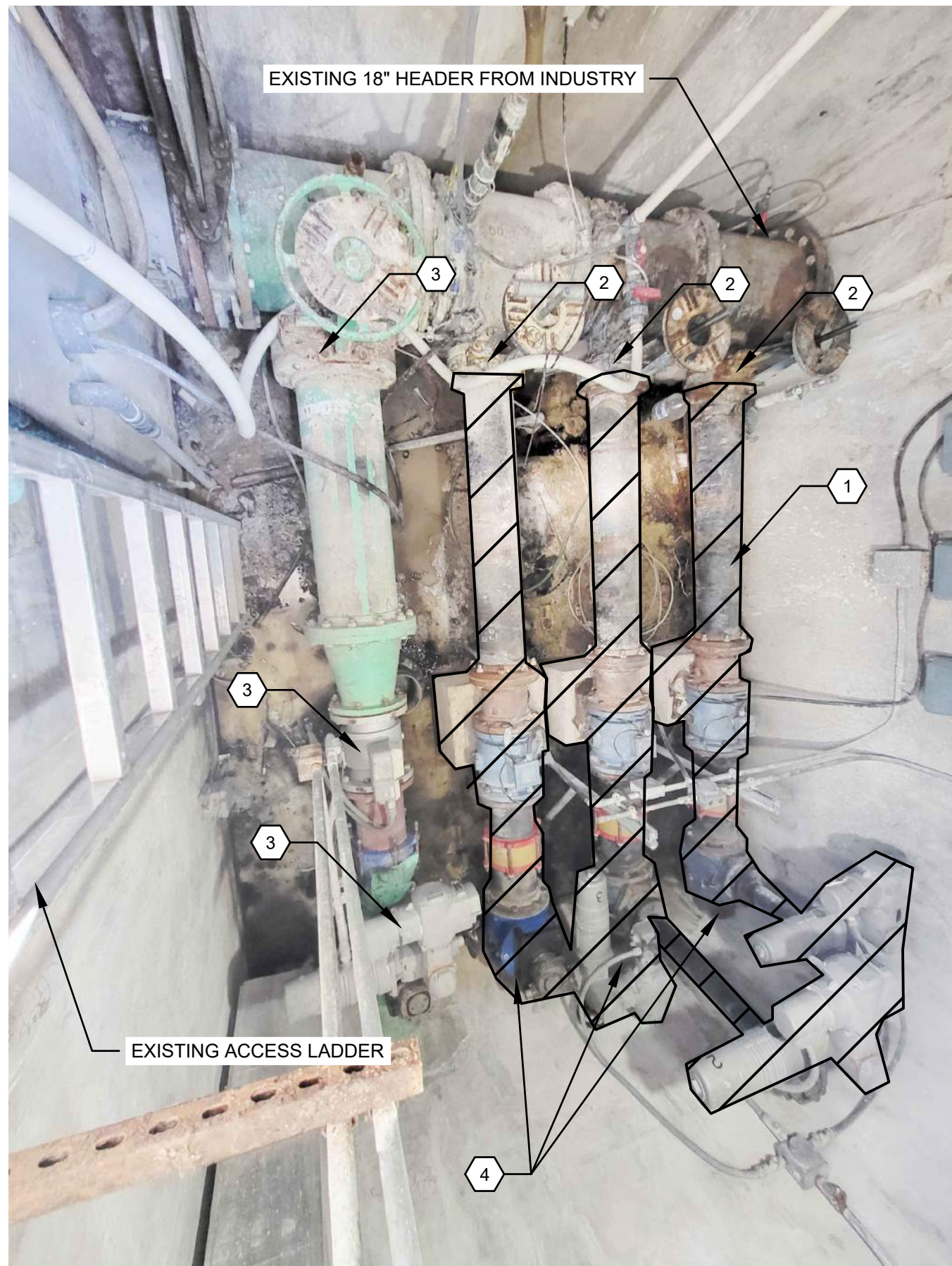
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FLOW EQUALIZATION IMPROVEMENTS
CITY OF MARSHALLTOWN
MARSHALLTOWN, IOWA

P-PROCESS
TANK PIPING SECTION & DETAILS

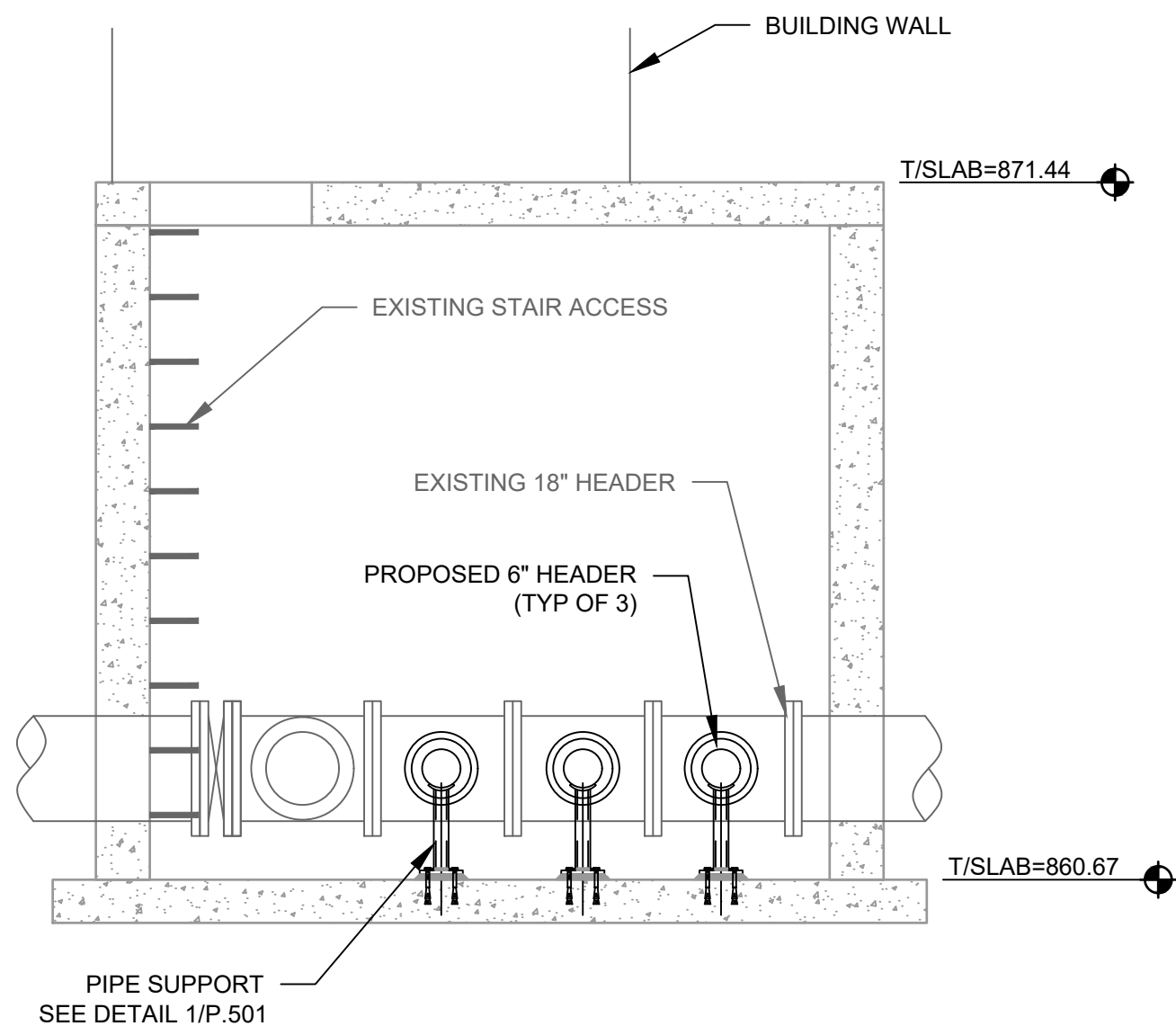
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P.103



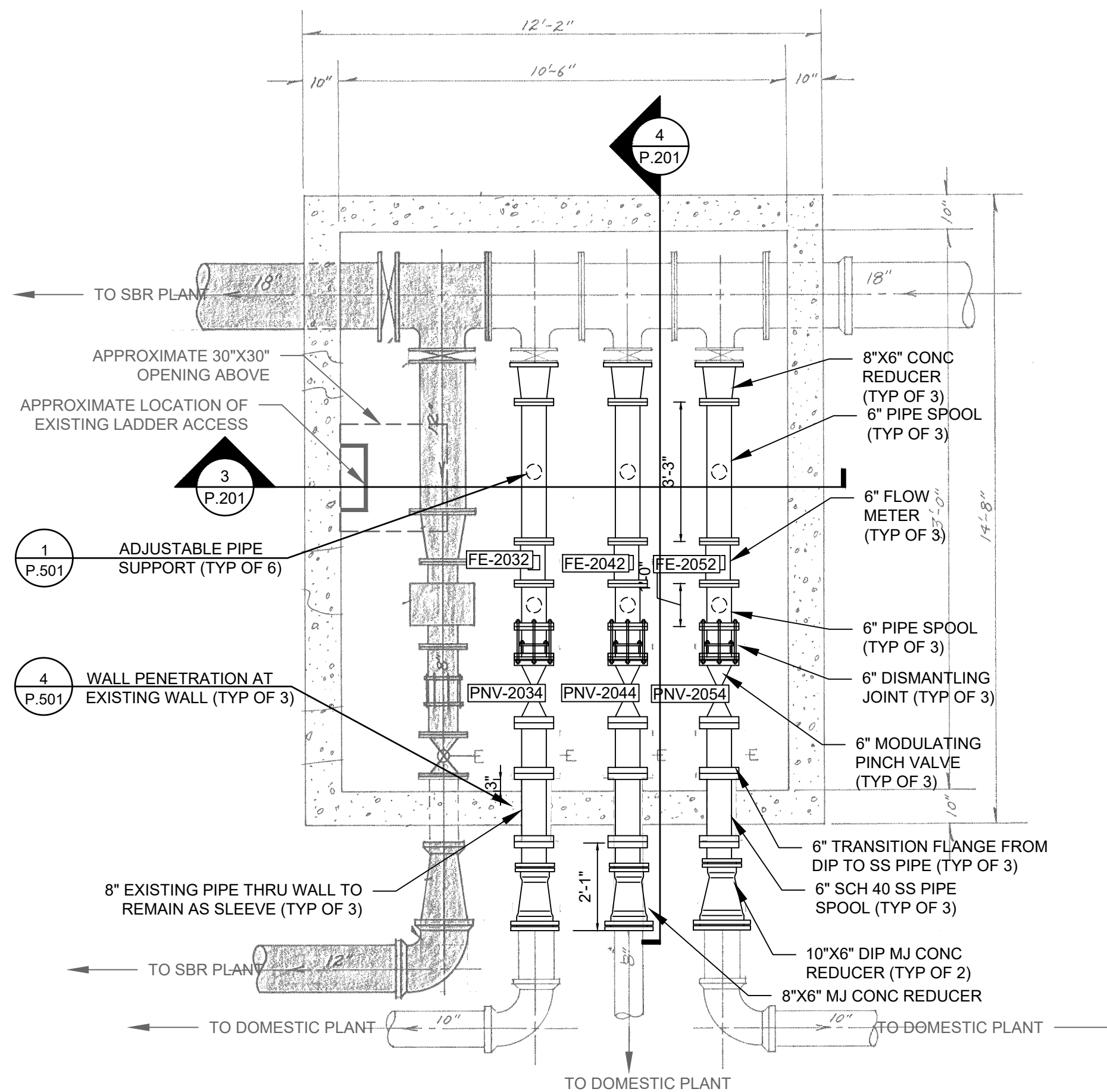
DEMOLITION KEY NOTES: #

1. REMOVE AND DISPOSE OF EXISTING PIPING, SUPPORTS, FLOW METERS, AND VALVES AS INDICATED HEREIN.
2. VALVES TO BE CLOSED BY OWNER PRIOR TO DEMOLITION, SEE GENERAL NOTE 9.
3. PROTECT EXISTING PIPING, VALVES, SUPPORTS, AND FLOW METER.
4. PROTECT EXISTING 8" DIP WEST OF EXISTING PLUG VALVE AS INDICATED FOR CONNECTION OF NEW PIPING (TYP OF 3).

1 MONFORT STRUCTURE
PIPING & VALVE DEMOLITION
SCALE: 3/8"=1'-0"



3 MONFORT STRUCTURE SECTION
SCALE: 3/8"=1'-0"

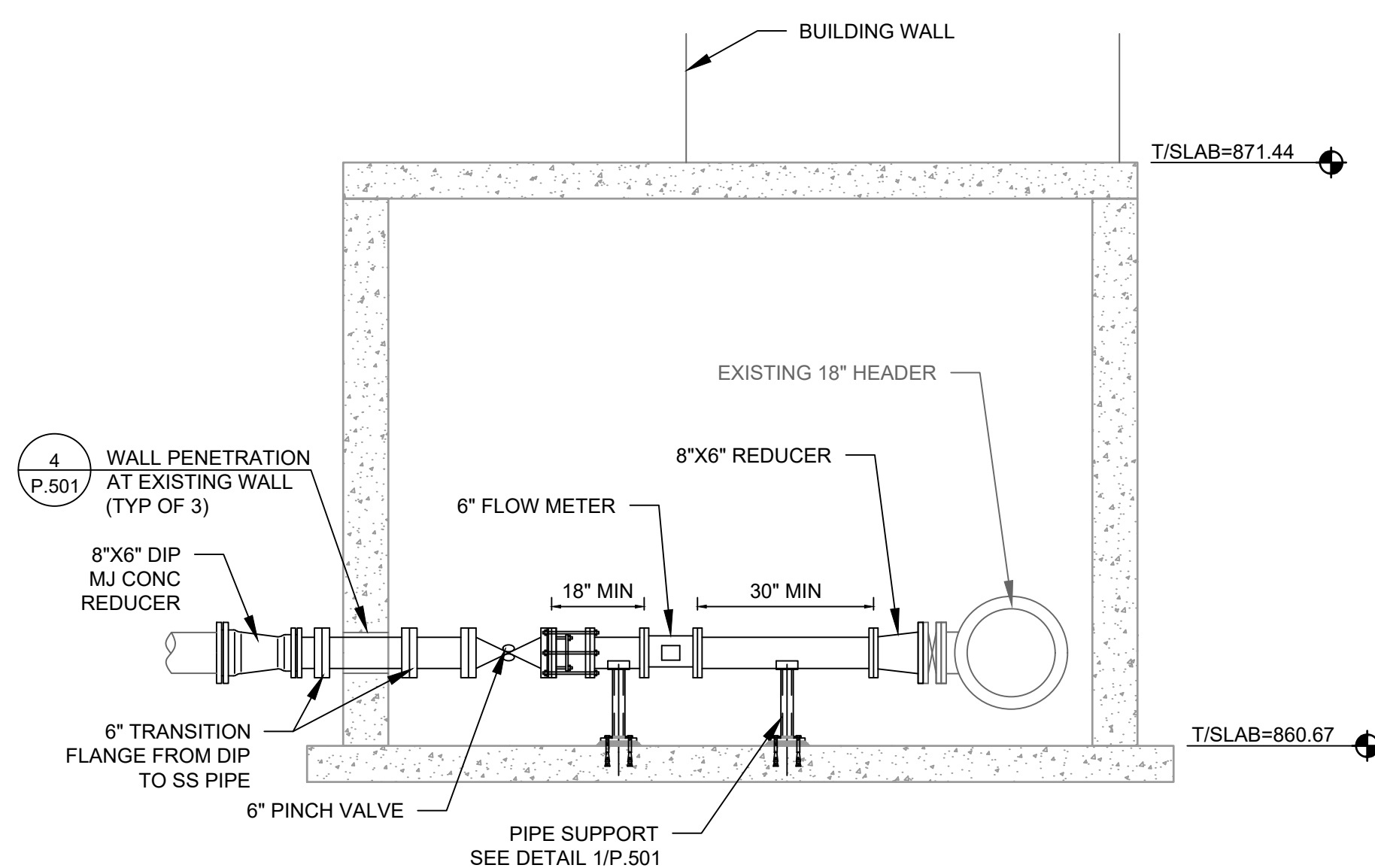


2 MONFORT STRUCTURE
PIPING IMPROVEMENTS
SCALE: 3/8"=1'-0"



GENERAL NOTES

1. REFER TO SHEET P.001 FOR ADDITIONAL GENERAL NOTES FOR PROCESS.
2. SOME EXISTING PIPING AND EQUIPMENT HAS BEEN OMITTED FROM THE DRAWING FOR CLARITY. CONTRACTOR TO VERIFY ALL EXISTING INFORMATION PRIOR TO STARTING WORK.
3. REFER TO SPECIFICATION SECTION 01 1000 FOR SEQUENCING REQUIREMENTS.
4. WHERE EMBEDDED METAL ANCHORS ARE REMOVED, GRIND METAL DOWN TO 1/2" BELOW CONCRETE SURFACE, PAINT WITH EPOXY PAINT, AND FILL HOLE WITH SMOOTH NON-SHRINK GROUT.
5. THE OWNER SHALL HAVE FIRST SALVAGE RIGHTS TO ALL FIXTURES, DEVICES AND EQUIPMENT REMOVED. COORDINATE WITH OWNER PRIOR TO DEMOLITION.
6. REPAIR OR REPLACE BUILDING ELEMENTS WHICH ARE DAMAGED AS PART OF DEMOLITION WORK.
7. DEMOLITION DRAWINGS INDICATE MAJOR PIECES OF EQUIPMENT WHICH ARE TO BE REMOVED OR RECONNECTED. REMOVE INDICATED ITEMS AND ASSOCIATED ITEMS NOT INDICATED BUT WHICH MUST BE REMOVED TO ACCOMMODATE THE WORK. THE ITEMS INDICATED SPECIFICALLY ON THE DRAWINGS TO BE REMOVED ARE ONLY TO INDICATE IN GENERAL TO THE CONTRACTOR THE AMOUNT OF DEMOLITION WORK REQUIRED. THE CONTRACTOR SHOULD VISIT THE SITE TO DETERMINE THE EXTENT OF DEMOLITION REQUIRED AND SHOULD BECOME FAMILIAR WITH EXISTING CONDITIONS PRIOR TO THE BID DATE. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
8. REMOVE DEMOLISHED ITEMS FROM THE PROJECT SITE. PROPERLY DISPOSE OF ITEMS.
9. EXISTING ISOLATION VALVES ARE NOT GUARANTEED TO FUNCTION. CONTRACTOR SHALL VERIFY VALVE OPERABILITY AND PROVIDE TEMPORARY BLIND, PANCAKE BLINDS, OR OTHER POSITIVE ISOLATION AS REQUIRED TO SAFELY COMPLETE THE WORK. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY ADDITIONAL ISOLATION MATERIALS REQUIRED FOR CONSTRUCTION SEQUENCING.
10. CONTRACTOR SHALL BE RESPONSIBLE FOR ISOLATING PIPING AS NECESSARY TO FACILITATE REPLACEMENT, INCLUDING INSTALLING TEMPORARY BLIND FLANGES OR PANCAKE BLINDS.
11. CONTENT ON THIS DRAWING IS ORIGINALLY FROM "WATER POLLUTION PLANT PHASE II & PHASE III IMPROVEMENTS PROJECT", 1989, PROJECT NO. 2373. INFORMATION SHALL BE VERIFIED BY CONTRACTOR PRIOR TO REMOVAL.
12. CONTRACTOR SHALL SUBMIT A PROPOSED DEMOLITION PLAN PER 02 4100 AND PROVIDE PRE-DEMOLITION PHOTOGRAPHS OR VIDEOTAPE PRIOR TO DEMOLITION WORK BEGINNING.
13. DIMENSIONS AND PIPE SPOOL LENGTHS SHOWN ARE APPROXIMATE. FIELD VERIFY EXISTING PIPE CENTERLINES, ELEVATIONS, AND AVAILABLE SPACE PRIOR TO FABRICATION. ADJUST PIPE SPOOL LENGTHS AS REQUIRED TO FIT EXISTING CONDITIONS WHILE MAINTAINING REQUIRED EQUIPMENT CLEARANCES AND FLOW METER STRAIGHT PIPE REQUIREMENTS.
14. CONTRACTOR SHALL CONTAIN AND REMOVE WASTEWATER, SOLIDS, AND DEBRIS RELEASED WITHIN THE MONFORT STRUCTURE DURING DEMOLITION AND PIPING MODIFICATIONS. MAINTAIN THE WORK AREA IN A CLEAN CONDITION AND DISPOSE OF COLLECTED MATERIAL AT AN OWNER-APPROVED LOCATION.



3 MONFORT STRUCTURE SECTION
SCALE: 3/8"=1'-0"

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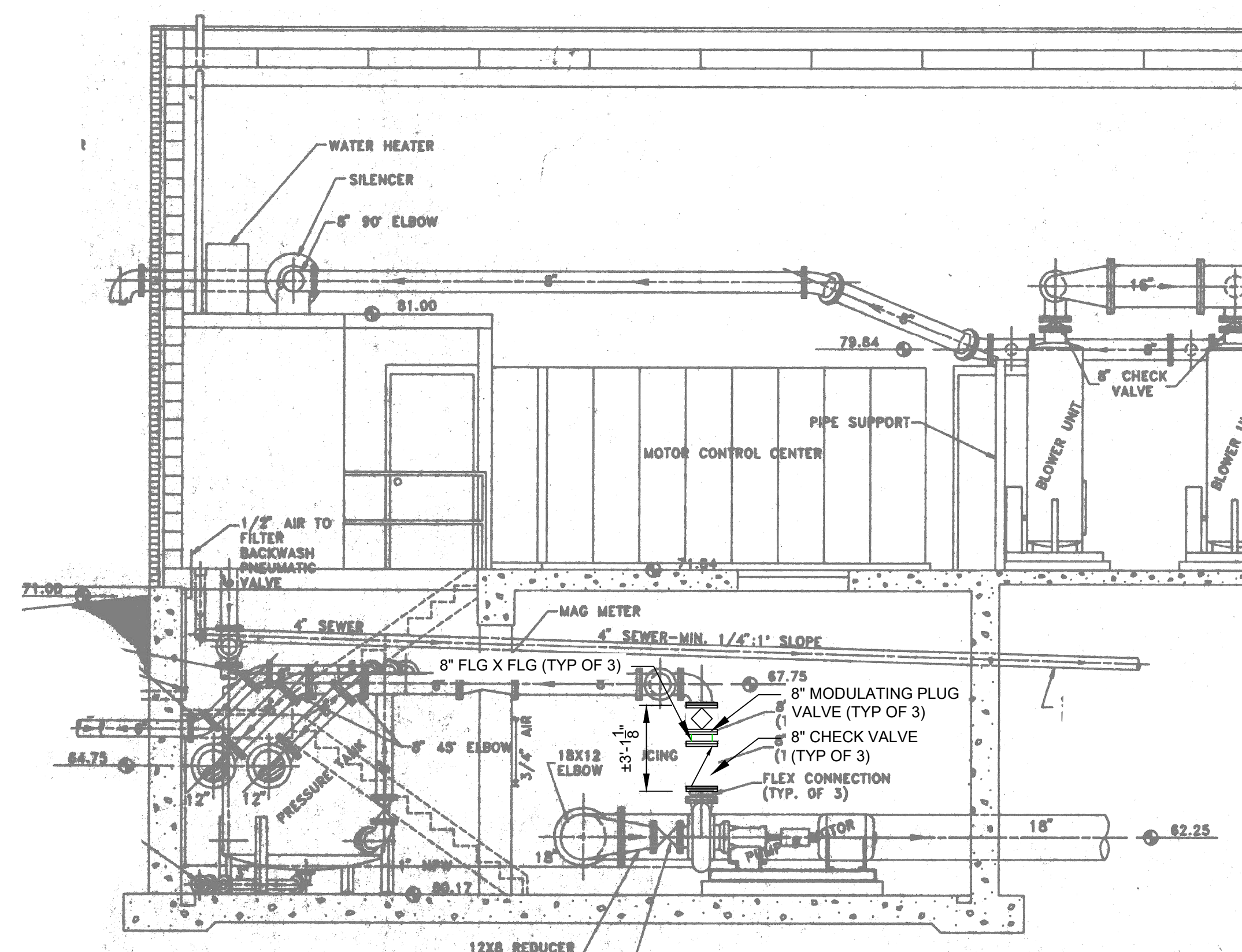
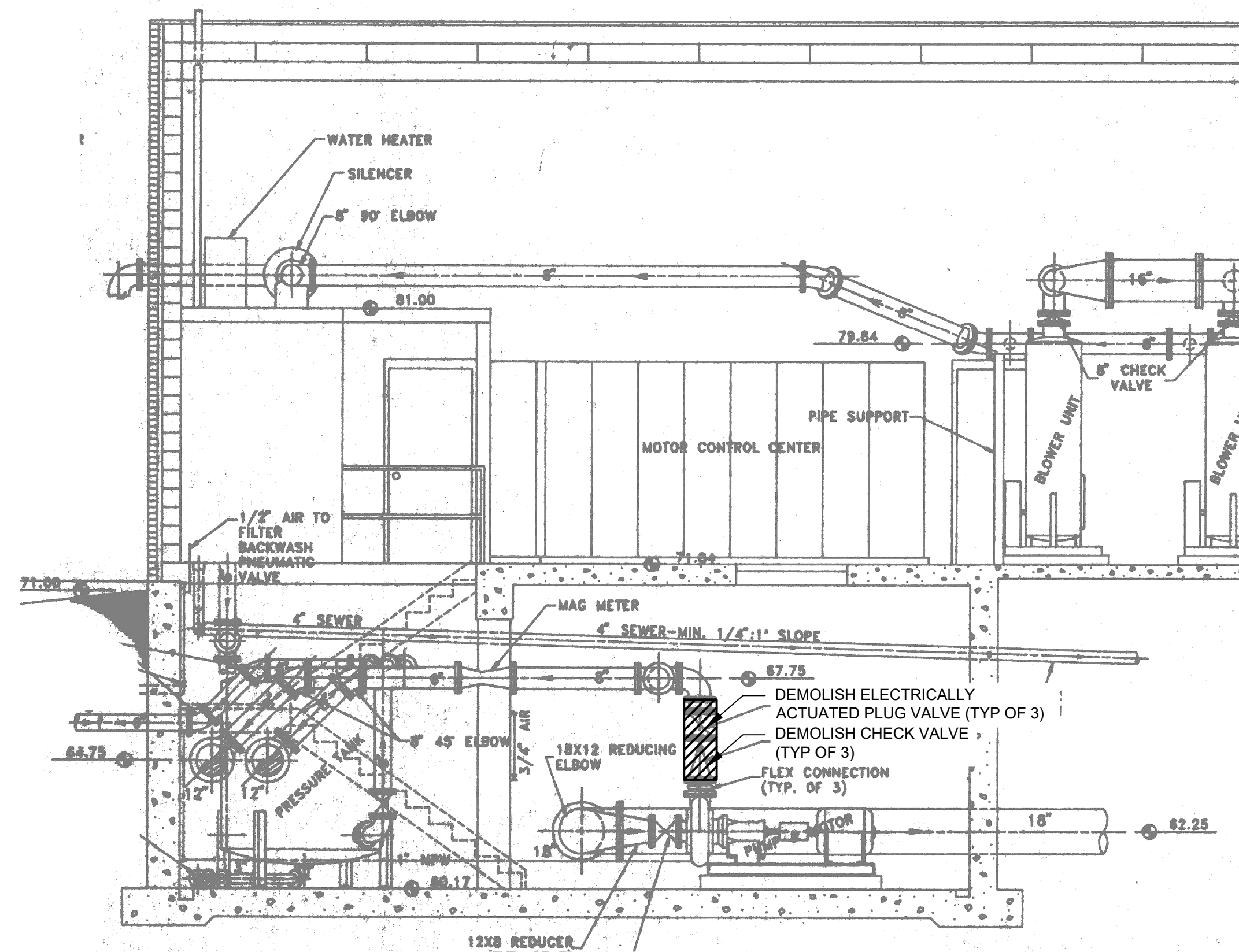


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CITY OF MARSHALLTOWN
MARSHALLTOWN, IOWA

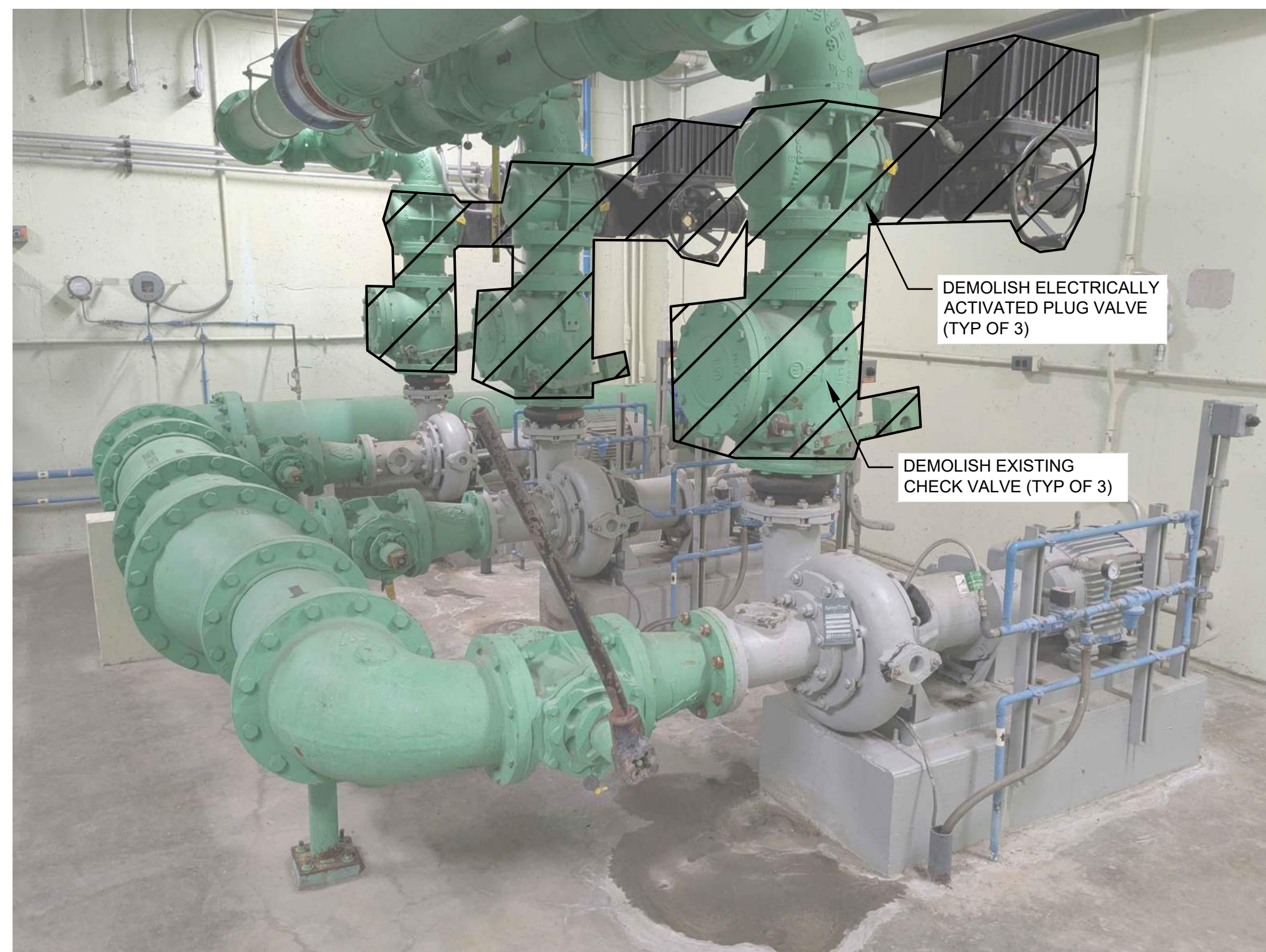
P-PROCESS
MONFORT PIPING & VALVE MODIFICATIONS

SHEET NO.
P.201



GENERAL NOTES

1. REFER TO SHEET P.001 FOR ADDITIONAL GENERAL PROCESS NOTES.
2. EXISTING CONDITIONS SHOWN ARE BASED ON 1989 RECORD DRAWINGS AND LIMITED FIELD OBSERVATIONS. CONTRACTOR SHALL FIELD VERIFY EXISTING PIPING, VALVE LOCATIONS, DIMENSIONS, AND ELEVATIONS PRIOR TO DEMOLITION AND FABRICATION OF NEW PIPING..



BID SET

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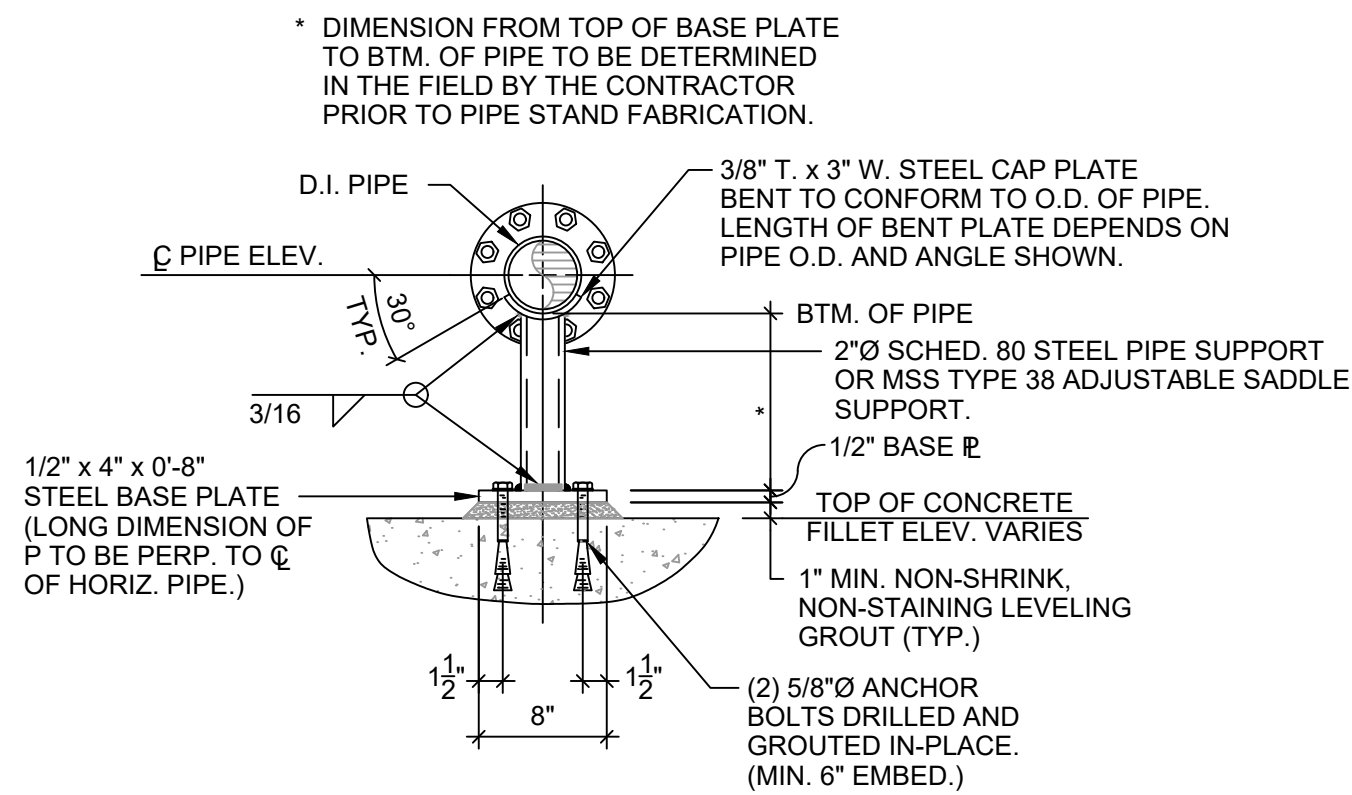
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FLOW EQUALIZATION IMPROVEMENTS
CITY OF MARSHALLTOWN
MARSHALLTOWN, IOWA

P-PROCESS
SBR PUMP BUILDING PIPING MODIFICATIONS

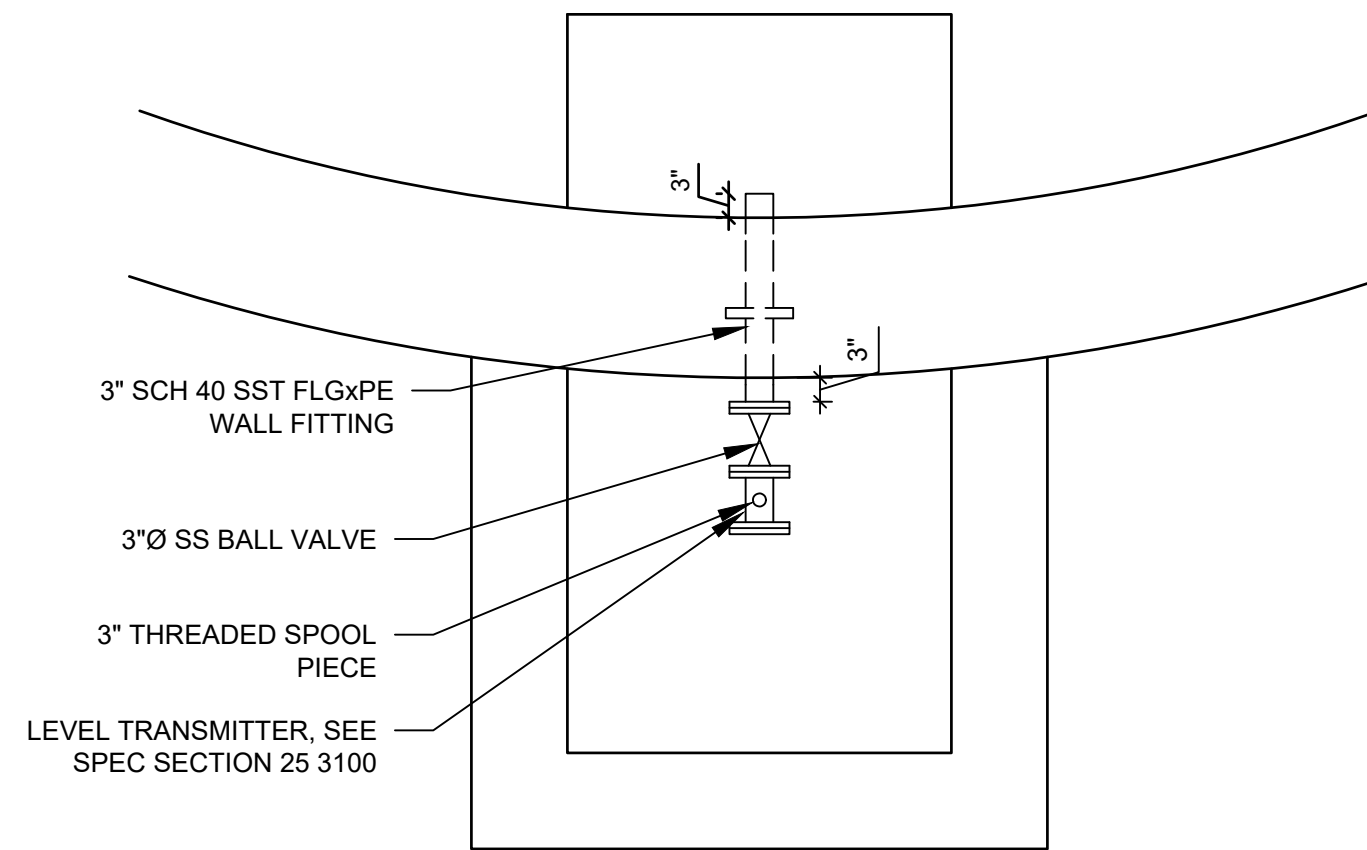
SHEET NO.
P.301



NOTE: ALL COMPONENTS SHALL BE STAINLESS STEEL

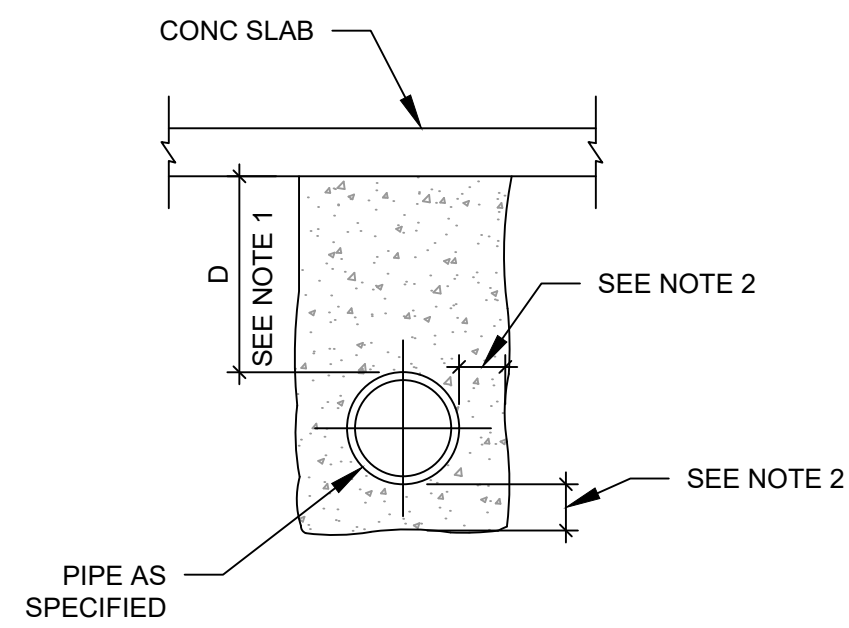
1 TYPICAL PIPE SUPPORT DETAIL

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2 LEVEL TRANSMITTER DETAIL

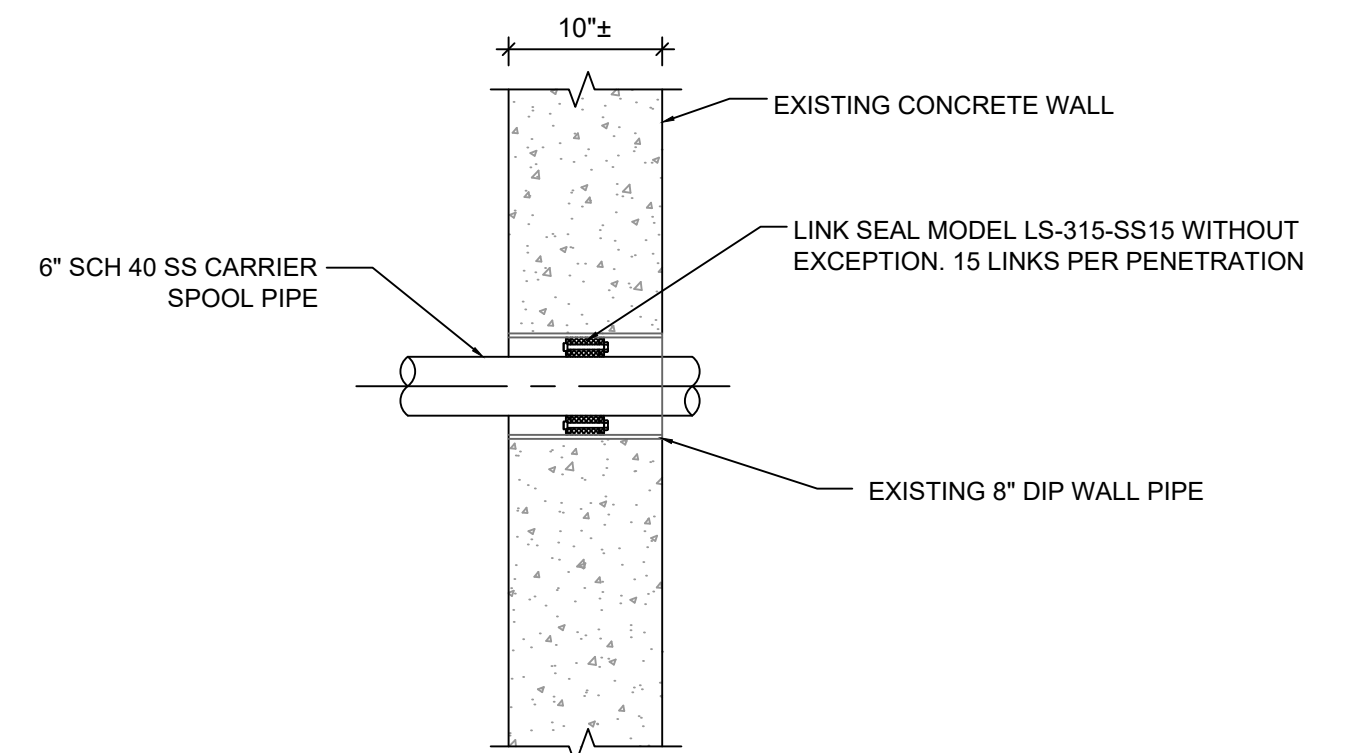
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- NOTES:
- IF "D" IS LESS THAN 1'-6", PROVIDE ENCASEMENT CONTINUOUS TO SLAB. IF "D" IS GREATER THAN 1'-6", ENCASEMENT MAY BE SEPARATED FROM SLAB.
 - 6" MINIMUM CONCRETE ENCASEMENT FOR 16" DIAMETER AND SMALLER PIPE, 12" MINIMUM CONCRETE ENCASEMENT FOR 18" DIAMETER AND LARGER PIPE.
 - AT PIPING PENETRATIONS BENEATH THE FEB FOUNDATION, EXTEND CONCRETE ENCASEMENT A MINIMUM OF 5 FEET BEYOND THE EXTERIOR FACE OF THE FOUNDATION. PROVIDE ENCASEMENT/CONTROLLED LOW-STRENGTH MATERIAL AND EXTEND THE FULL WIDTH AND DEPTH OF THE UTILITY TRENCH AS REQUIRED TO FORM A CONTINUOUS LOW-PERMEABILITY TRENCH PLUG AND PREVENT WATER MIGRATION BENEATH THE STRUCTURE.

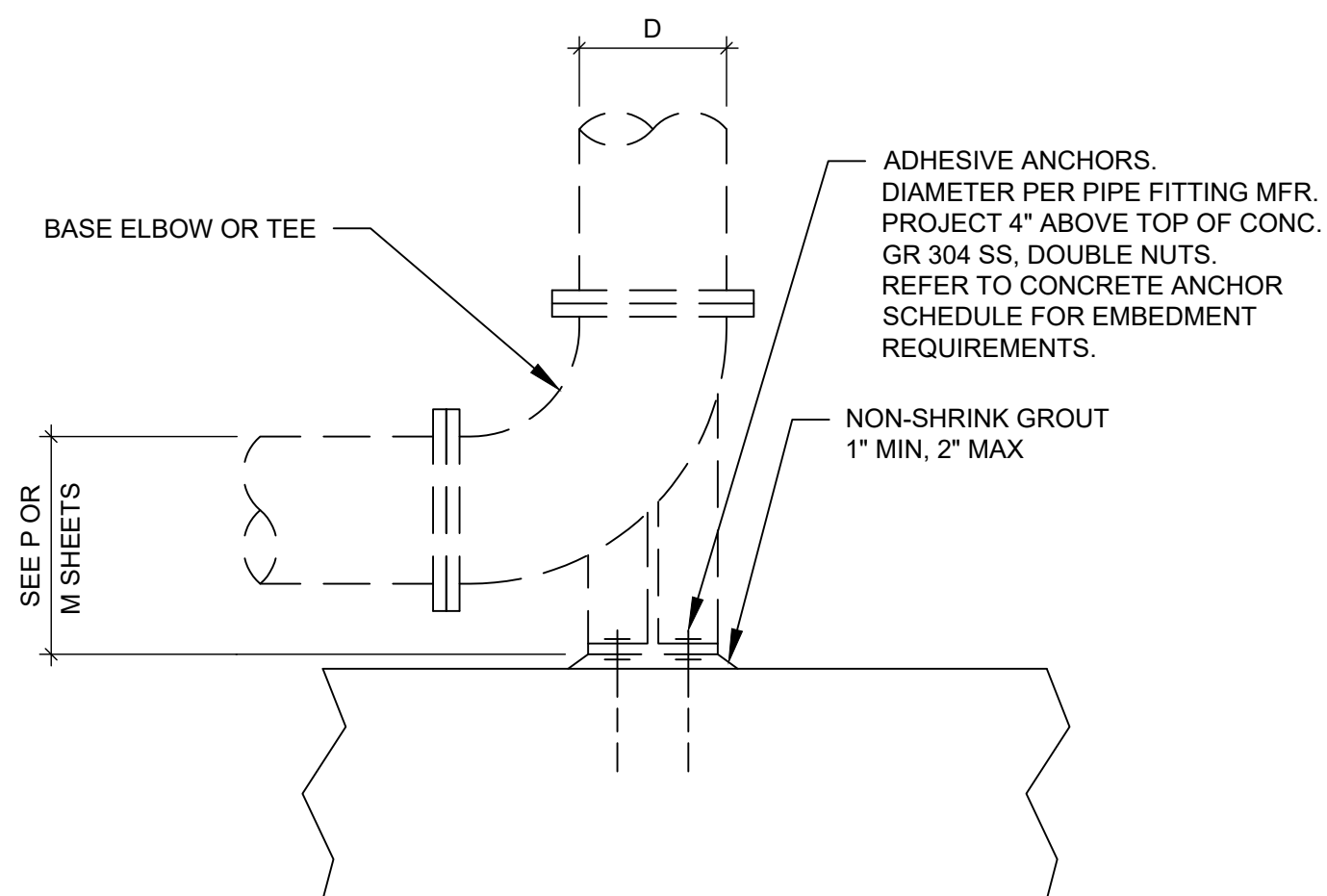
3 CONCRETE ENCASEMENT DETAIL

SCALE: NOT TO SCALE



4 WALL PENETRATION AT EXISTING CONCRETE WALL

SCALE: NOT TO SCALE



5 PIPE SUPPORT BASE BEND DETAIL

SCALE: NOT TO SCALE

WALL FITTING SCHEDULE		
PLAN DESIGNATION	DESCRIPTION	REMARKS
1	FLG X WS X FLG	SET TO ALLOW CLEARANCE TO INSTALL FLANGE BOLTS
2	FLG X WS X FLG	SET TO ALLOW CLEARANCE TO INSTALL FLANGE BOLTS
3	FLG X WS X MJ	SET TO ALLOW CLEARANCE TO INSTALL FLANGE BOLTS
4	MJ X WS X PE	
5	MJ X WS X MJ	
SCHEDULE NOTES: PLAN CALL OUT FITTING NUMBER AS A BOX # SYMBOL.		
A. ALL PIPING CONNECTIONS TO MJ SHALL BE RESTRAINED WITH APPROVED RETAINER GLAND.		
B. ALL FLANGES SHALL BE SET OUT OF THE WALL WITH PROPER CLEARANCE TO INSTALL FLANGE BOLTS UNLESS SPECIFICALLY SHOWN ON DRAWINGS AS FLUSH WITH WALL. CONTRACTOR WILL NEED TO MODIFY FORMWORK APPROPRIATELY TO ACCOMMODATE WALL FITTINGS THAT EXTEND THROUGH WALL.		
C. PLAIN END TO EXTEND 2" BEYOND WALL UNLESS NOTED OTHERWISE.		

BID SET

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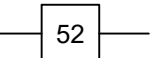
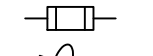
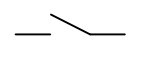
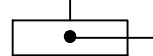
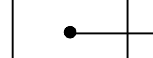
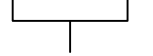
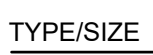
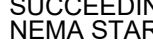
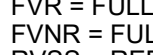
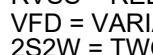
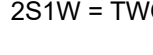
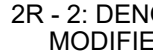
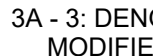
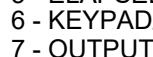
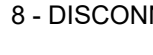
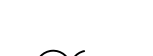
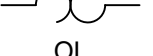
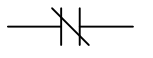
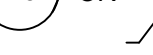
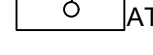
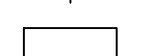
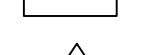
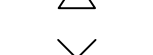
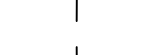
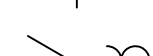
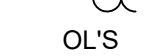
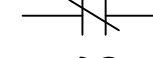
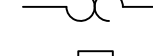
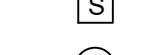
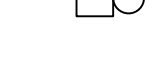
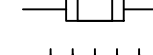
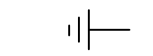
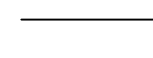
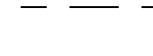
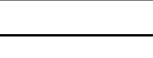
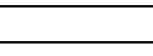
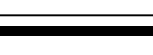


FLOW EQUALIZATION IMPROVEMENTS
CITY OF MARSHALLTOWN
MARSHALLTOWN, IOWA

P-PROCESS
PROCESS DETAILS

SHEET NO.
P.501

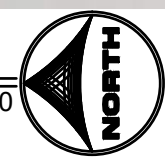
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ABBREVIATIONS		ELECTRICAL SYMBOLS		ELECTRICAL SYMBOLS		ELECTRICAL SYMBOLS PLANS	
A	AMPERES		UTILITY METERING		MEDIUM VOLTAGE CIRCUIT BREAKER		LIGHT FIXTURES
AC	ALTERNATING CURRENT		METERING DEVICE: AM-AMMETER VM-VOLTMETER FM-FREQUENCY METER WHM-KILOWATT HOUR METER DM-DIGITAL MULTI-FUNCTION METER MFM-MULTI-FUNCTION METER		FUSE, SIZE AND NUMBER OF FUSES AS NOTED		CEILING/PENDANT MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
AF	AMPERE FRAME				FUSED CUTOFF, CURRENT RATING, FUSE SIZE AND NUMBER OF POLES AS NOTED		WALL MOUNTED FIXTURE
AFF	ABOVE FINISHED FLOOR				FUSIBLE SWITCH, CURRENT RATING, FUSE SIZE AND QUANTITY AS NOTED		CEILING/PENDANT MOUNTED FIXTURE
AFG	ABOVE FINISHED GRADE				NON-FUSED SWITCH, CURRENT RATING AND NUMBER OF POLES AS NOTED		WALL MOUNTED FIXTURE
AICS	AMPERES INTERRUPTING CAPACITY, SYMMETRICAL				DISCONNECT OR DRAWOUT CONNECTION		CEILING/PENDANT MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
ASD	ADJUSTABLE SPEED DRIVE						WALL MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
AT	AMPERE TRIP		AMMETER SWITCH				CEILING/PENDANT MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
ATS	AUTOMATIC TRANSFER SWITCH		VOLTMETER SWITCH				WALL MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
AWG	AMERICAN WIRE GAUGE						CEILING/PENDANT MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
BC	BARE COPPER						WALL MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
C	CONDUIT		CURRENT TRANSFORMER, QUANTITY INDICATED				CEILING/PENDANT MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
CB	CIRCUIT BREAKER		POTENTIAL TRANSFORMER, QUANTITY INDICATED				WALL MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
CO	CONDUIT ONLY						CEILING/PENDANT MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
CKT	CIRCUIT						WALL MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
CPT	CONTROL POWER TRANSFORMER						CEILING/PENDANT MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
CT	CURRENT TRANSFORMER		SWITCHGEAR DEVICE:				WALL MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
DB	DIRECT BURIED						CEILING/PENDANT MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
DC	DIRECT CURRENT						WALL MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
DWG	DRAWING						CEILING/PENDANT MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
ELEV	ELEVATION						WALL MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
ENCL	ENCLOSURE						CEILING/PENDANT MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
EP	EXPLOSION PROOF						WALL MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
ETM	ELAPSED TIME METER						CEILING/PENDANT MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
EXIST	EXISTING						WALL MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
FLEX	FLEXIBLE						CEILING/PENDANT MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
GFI	GROUND FAULT INTERRUPTER						WALL MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
GFR	GROUND FAULT RELAY						CEILING/PENDANT MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
GND	GROUND						WALL MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
HH	HANDHOLE						CEILING/PENDANT MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
HOA	HAND OFF AUTOMATIC						WALL MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
HP	HORSEPOWER						CEILING/PENDANT MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
HVAC	HEATING, VENTILATING, AND AIR CONDITIONING						WALL MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
HZ	HERTZ						CEILING/PENDANT MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
JB	JUNCTION BOX						WALL MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
KVA	KILOVOLT-AMPERES						CEILING/PENDANT MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
KW	KILOWATT						WALL MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
LA	LIGHTNING ARRESTOR						CEILING/PENDANT MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
LOS	LOCKOUT STOP PUSH-BUTTON						WALL MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
LS	LIMIT SWITCH						CEILING/PENDANT MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
LTG	LIGHTING						WALL MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
MA	MILLIAMPERE						CEILING/PENDANT MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
MAX	MAXIMUM						WALL MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
MCC	MOTOR CONTROL CENTER						CEILING/PENDANT MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
MCM	THOUSAND CIRCULAR MILS						WALL MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
MIN	MINIMUM						CEILING/PENDANT MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
MT	EMPTY						WALL MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
MTD	MOUNTED						CEILING/PENDANT MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
N	NEUTRAL						WALL MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
NC	NORMALLY CLOSED						CEILING/PENDANT MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
NL	NIGHTLIGHT						WALL MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
NO	NORMALLY OPEN						CEILING/PENDANT MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
NO.	NUMBER						WALL MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
NTS	NOT TO SCALE						CEILING/PENDANT MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
OL'S	MOTOR OVERLOAD CONTACTS						WALL MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
P	POLE						CEILING/PENDANT MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
PB	PUSHBUTTON, PULLBOX						WALL MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
PH	PHASE						CEILING/PENDANT MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
PS	PRESSURE SWITCH						WALL MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
PT	POTENTIAL TRANSFORMER						CEILING/PENDANT MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
PVC	POLYVINYL CHLORIDE						WALL MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
REF	REFERENCE						CEILING/PENDANT MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
REQ'D	REQUIRED						WALL MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
SH	SHIELDED						CEILING/PENDANT MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
SHT	SHEET						WALL MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
STD	STANDARD						CEILING/PENDANT MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
SW	SWITCH						WALL MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
TACH	TACHOMETER						CEILING/PENDANT MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
TB	TERMINAL BOARD						WALL MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
TEL	TELEPHONE						CEILING/PENDANT MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
TEMP	TEMPERATURE						WALL MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
TP	TWISTED PAIR						CEILING/PENDANT MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
XFMR	TRANSFORMER						WALL MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
TSP	TWISTED SHIELDED PAIR						CEILING/PENDANT MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
TST	TWISTED SHIELDED TRIAD						WALL MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
TSTAT	THERMOSTAT						CEILING/PENDANT MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
TYP	TYPICAL						WALL MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
UG	UNDERGROUND						CEILING/PENDANT MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
UON	UNLESS OTHERWISE NOTED						WALL MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
V	VOLT						CEILING/PENDANT MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
VFD	VARIABLE SPEED DRIVE						WALL MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
VS	VARIABLE SPEED						CEILING/PENDANT MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
W	WATTS, WIRE						WALL MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
WP	WEATHERPROOF						CEILING/PENDANT MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
ZS	POSITION SWITCH						WALL MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
							CEILING/PENDANT MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
							WALL MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
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							CEILING/PENDANT MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
							WALL MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
							CEILING/PENDANT MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT
							WALL MOUNTED FIXTURE, EMERGENCY/NIGHT LIGHT

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1 OVERALL SITE PLAN
SCALE: 0 150
1"=150'



BID SET

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APPROVED: CSB JOB NUMBER: 2503420
CAD DATE: 8/11/2026 4:09 PM
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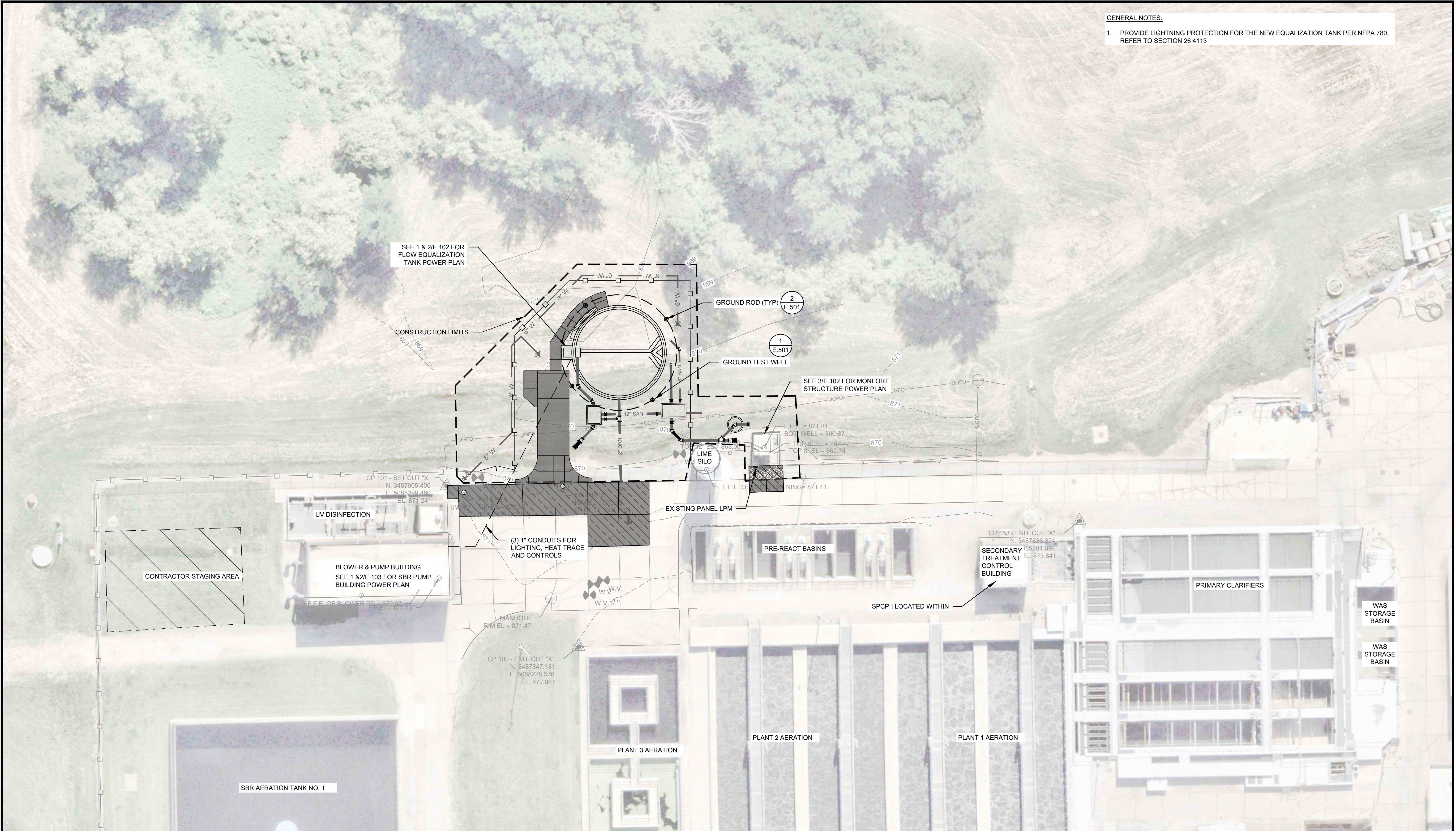


FLOW EQUALIZATION IMPROVEMENTS
CITY OF MARSHALLTOWN
MARSHALLTOWN, IOWA

E-ELECTRICAL
OVERALL SITE PLAN

SHEET NO.
E.100

- GENERAL NOTES:
1. PROVIDE LIGHTNING PROTECTION FOR THE NEW EQUALIZATION TANK PER NFPA 780. REFER TO SECTION 26 4113



1 ELECTRICAL SITE PLAN
SCALE: 1"=20'

BID SET

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APPROVED: CSB	JOB NUMBER: 2503420	
CAD DATE: 8/6/2026 1:14 PM		
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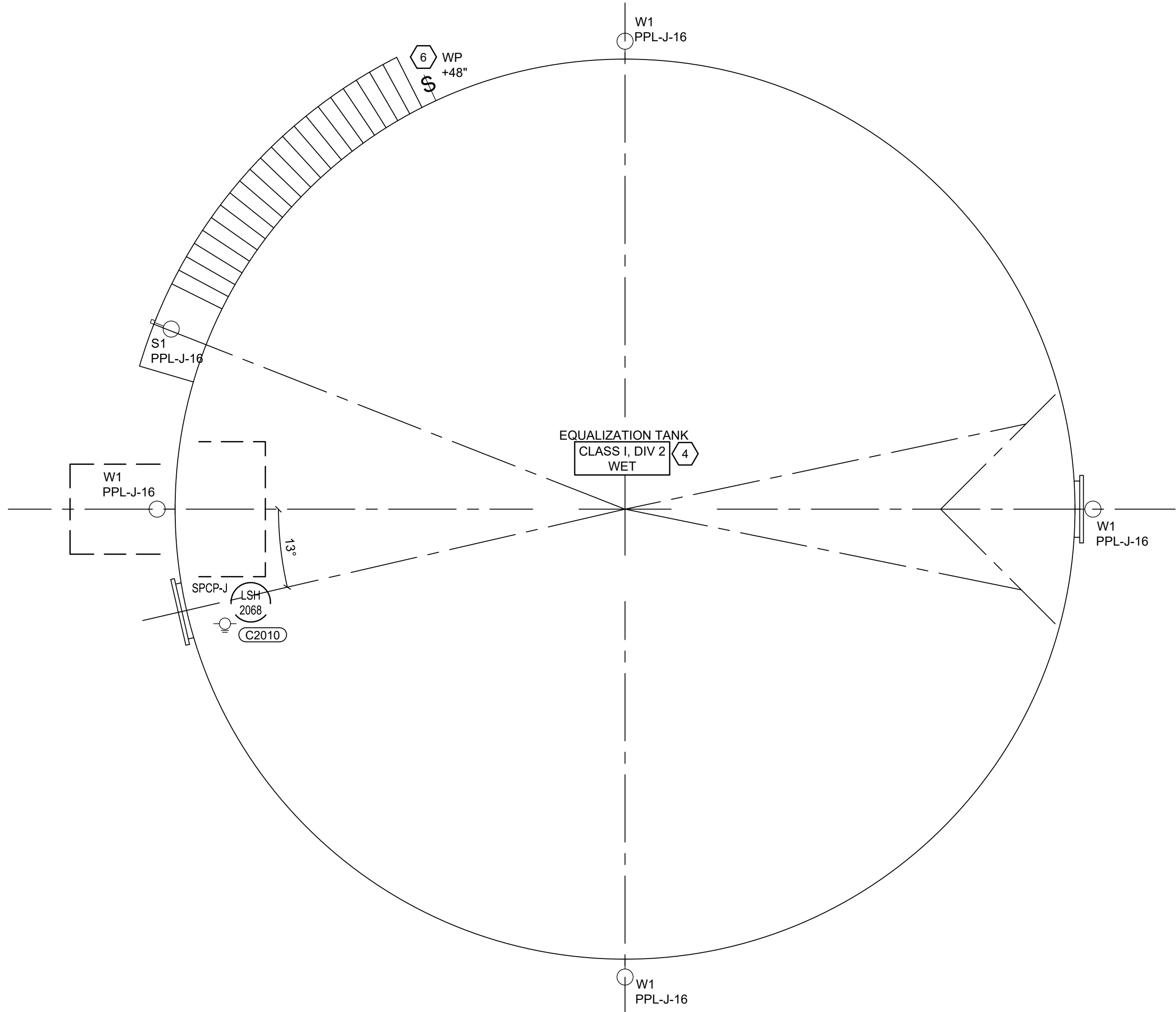


FLOW EQUALIZATION IMPROVEMENTS
CITY OF MARSHALLTOWN
MARSHALLTOWN, IOWA

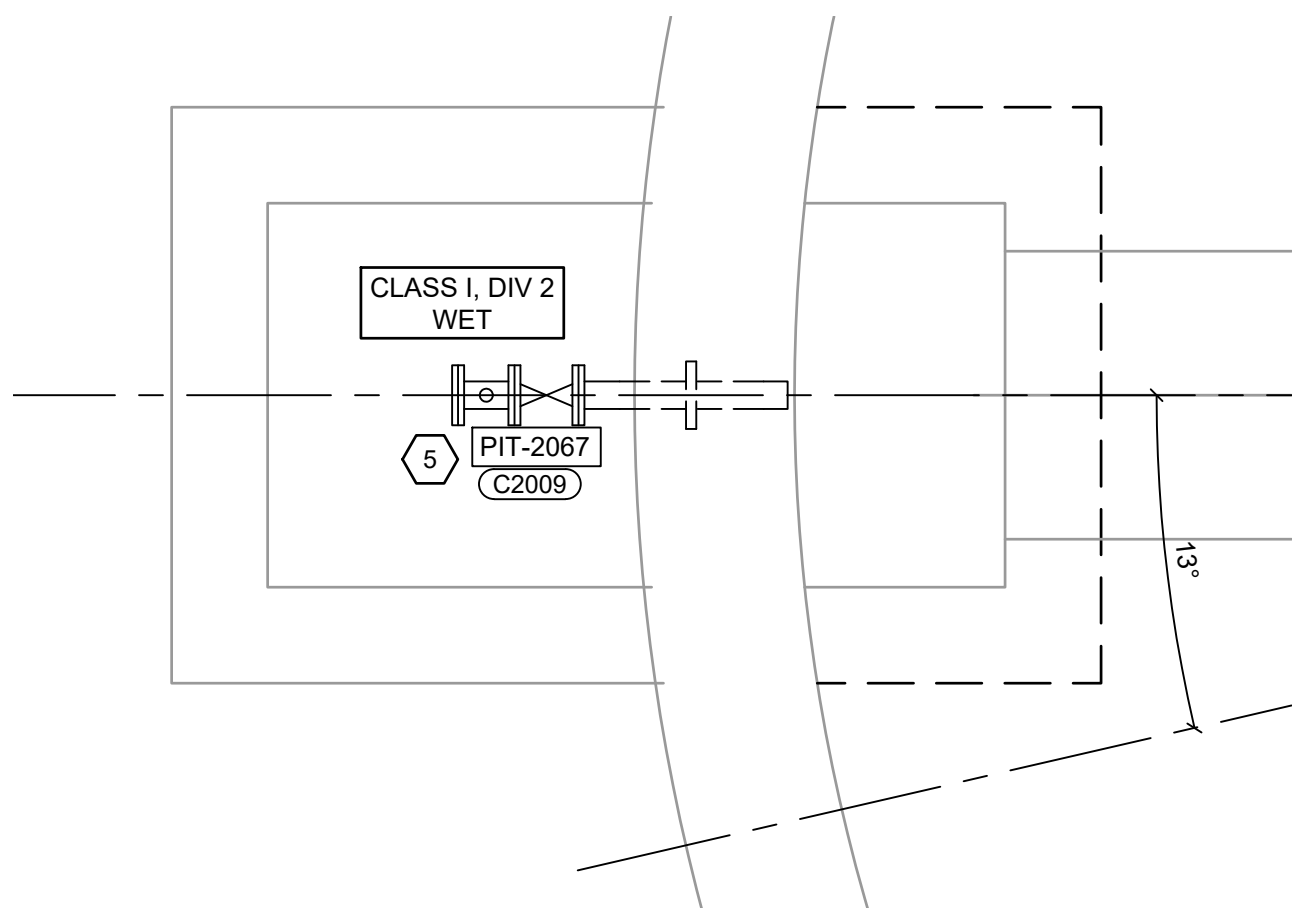
E-ELECTRICAL
ELECTRICAL SITE PLAN

SHEET NO.
E.101

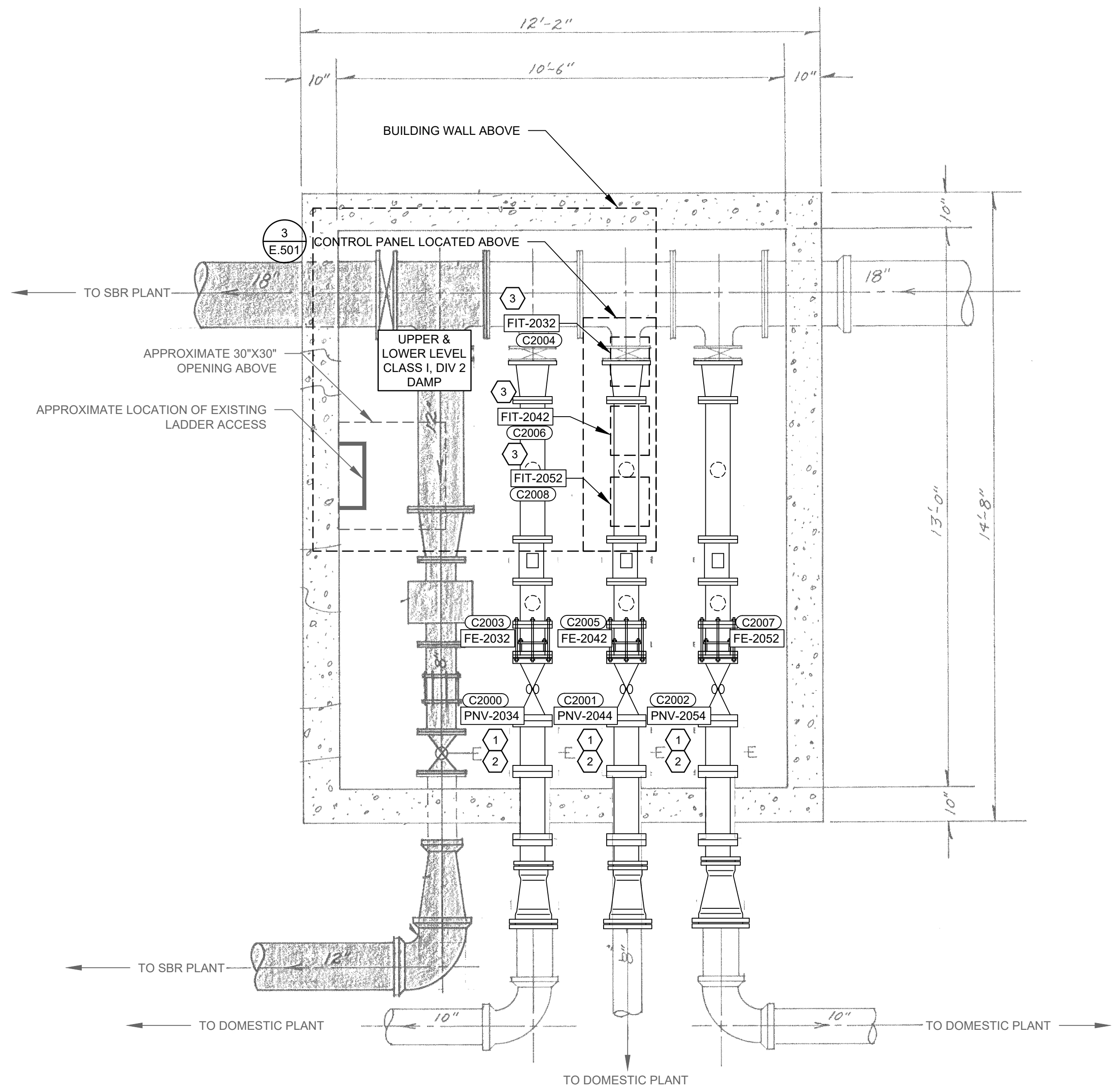
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1 ELECTRICAL PLAN
FLOW EQUALIZATION TANK - UPPER
SCALE: 1/4" = 1'-0"



2 ELECTRICAL PLAN
FLOW EQUALIZATION TANK - LOWER
SCALE: 1/2" = 1'-0"



3 ELECTRICAL PLAN
MONFORT STRUCTURE - LOWER
SCALE: 1/2" = 1'-0"

KEYNOTES: #

1. DISCONNECT EXISTING CONDUCTORS FOR POWER AND CONTROLS WITH REMOVAL OF EXISTING EQUIPMENT. CONNECT REPLACEMENT EQUIPMENT WITH EXISTING POWER CONDUCTORS.
2. POWERED FROM BREAKERS 1, 3, OR 5 FROM PANEL LPM NEXT TO THE DOOR OF THE MONFORT STRUCTURE. REFER TO PANEL SCHEDULE
3. DEMOLISH EXISTING FLOW TRANSMITTERS INSIDE MONFORT STRUCTURE CONTROL PANEL. PROVIDE NEW FLOW TRANSMITTERS TO REPLACE EXISTING. REUSE EXISTING 120V CIRCUIT AND CONDUCTORS TO POWER NEW DEVICES. EXTEND CONDUCTORS AS REQUIRED.
4. EQUALIZATION TANK IS RATED CLASS I, DIVISION 2 FROM 18" ABOVE THE TOP OF TANK, 18" OUT FROM TANK WALL, DOWN TO 18" ABOVE GRADE, AND OUT 10' FROM THE TANK WALL.
5. PROVIDE HEAT TRACE POWER FROM PPL-J-18.
6. SWITCH FOR CONTROL OF TYPE S1 TANK LIGHT. MOUNT TO UNISTRUT AT 48" ABOVE SIDEWALK.

BID SET

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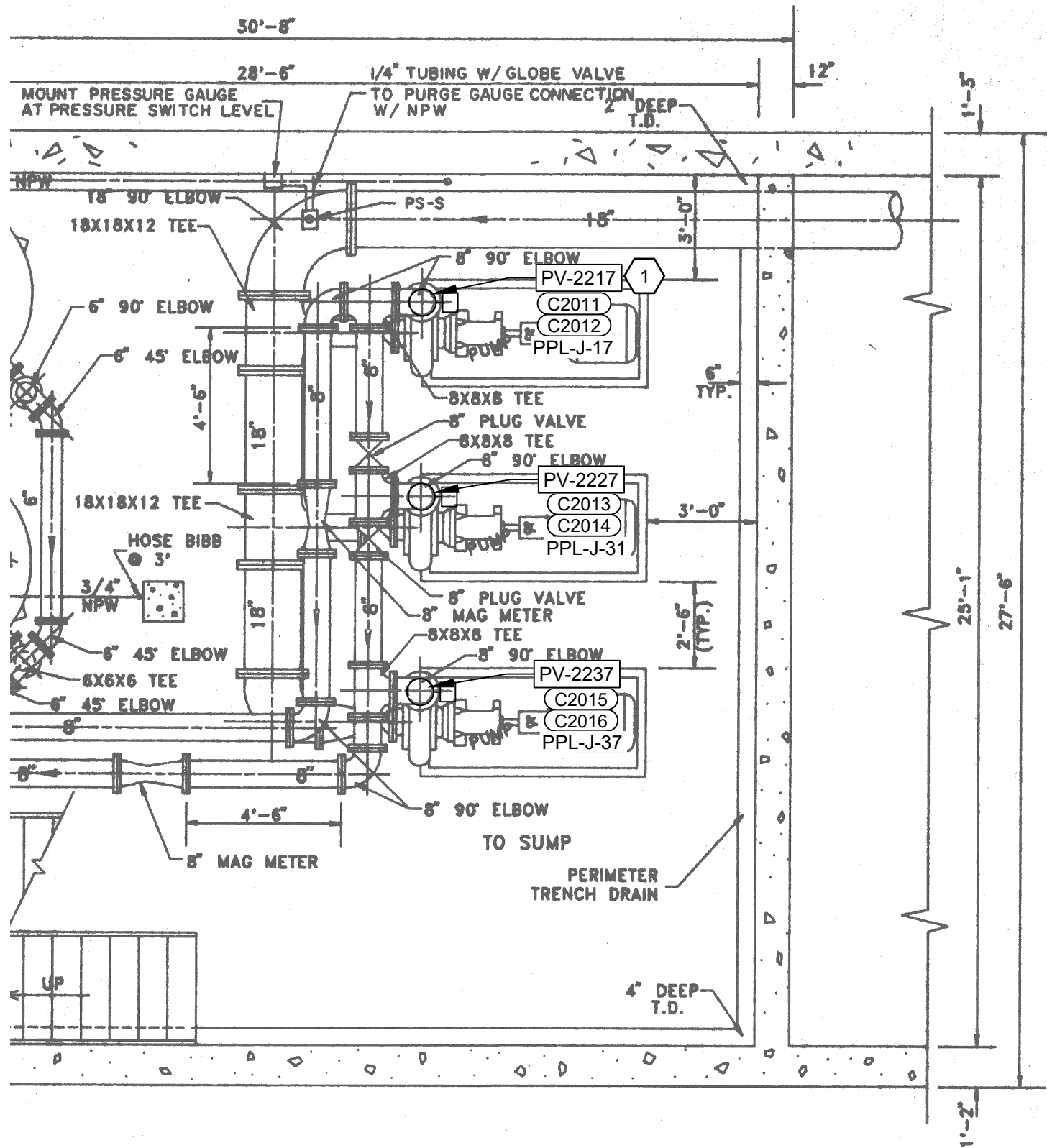
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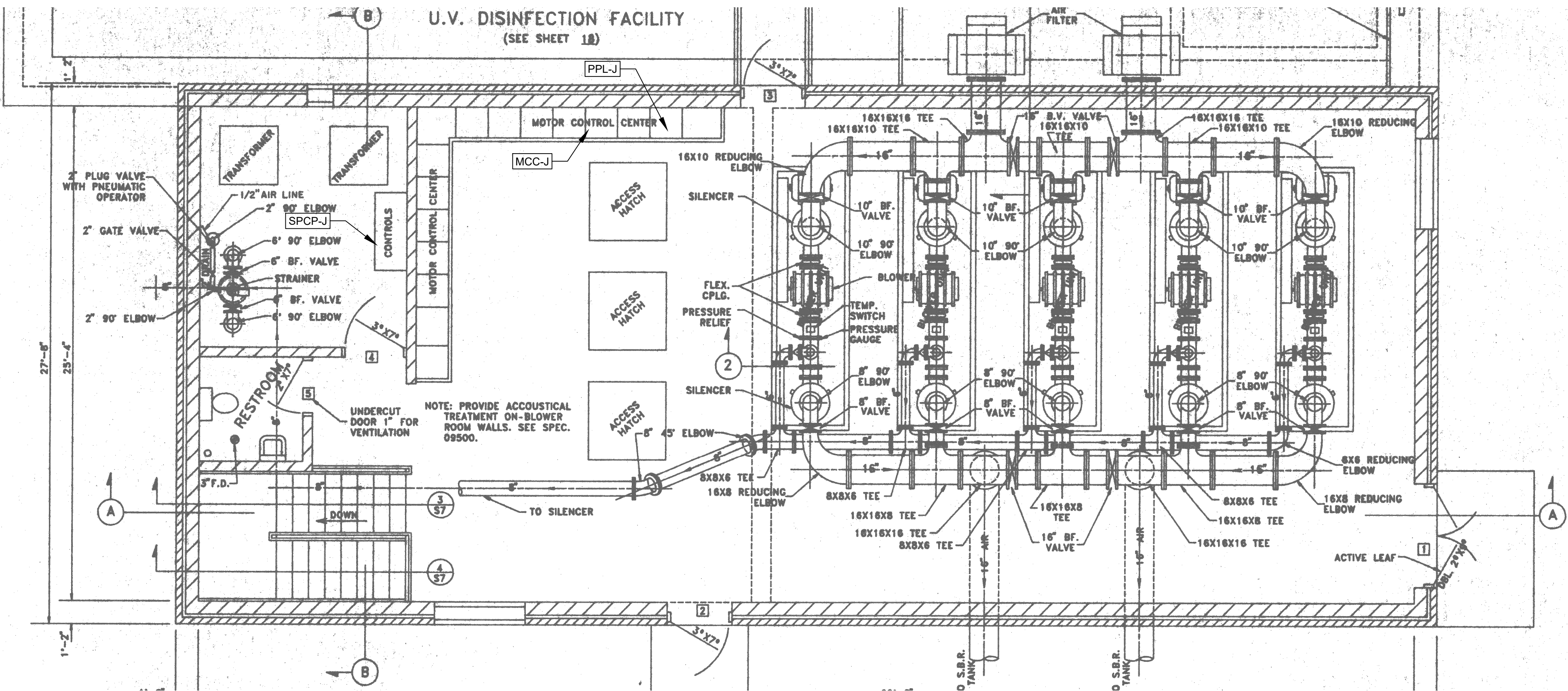
FLOW EQUALIZATION IMPROVEMENTS
CITY OF MARSHALLTOWN
MARSHALLTOWN, IOWA

E-ELECTRICAL
ELECTRICAL PLAN - TANK & MONFORT STRUCTURE

SHEET NO.
E.102



1
ELECTRICAL PLAN
SBR PUMP BUILDING - LOWER
SCALE: 1/4" = 1'-0"



2
ELECTRICAL PLAN
SBR PUMP BUILDING - UPPER
SCALE: 1/4" = 1'-0"

KEYNOTES: #

- DISCONNECT EXISTING CONDUCTORS FOR POWER AND CONTROLS WITH REMOVAL OF EXISTING EQUIPMENT. CONNECT REPLACEMENT EQUIPMENT WITH EXISTING POWER AND CONTROL CONDUCTORS. EXTEND CONDUIT AND CONDUCTORS AS REQUIRED.

BID SET

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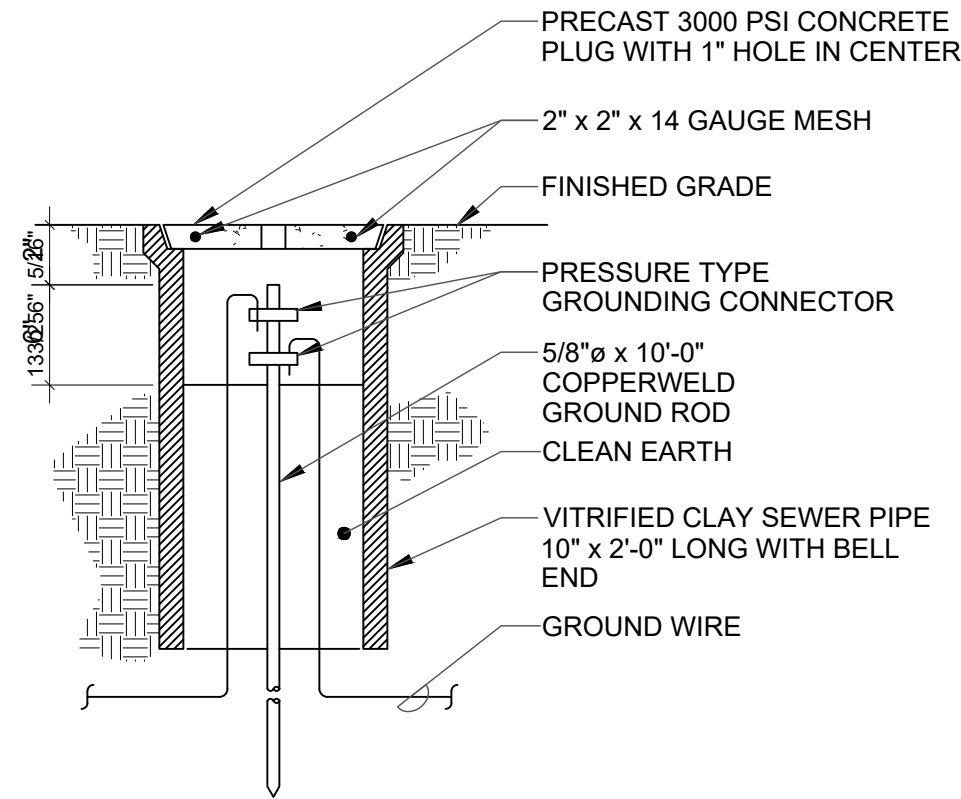
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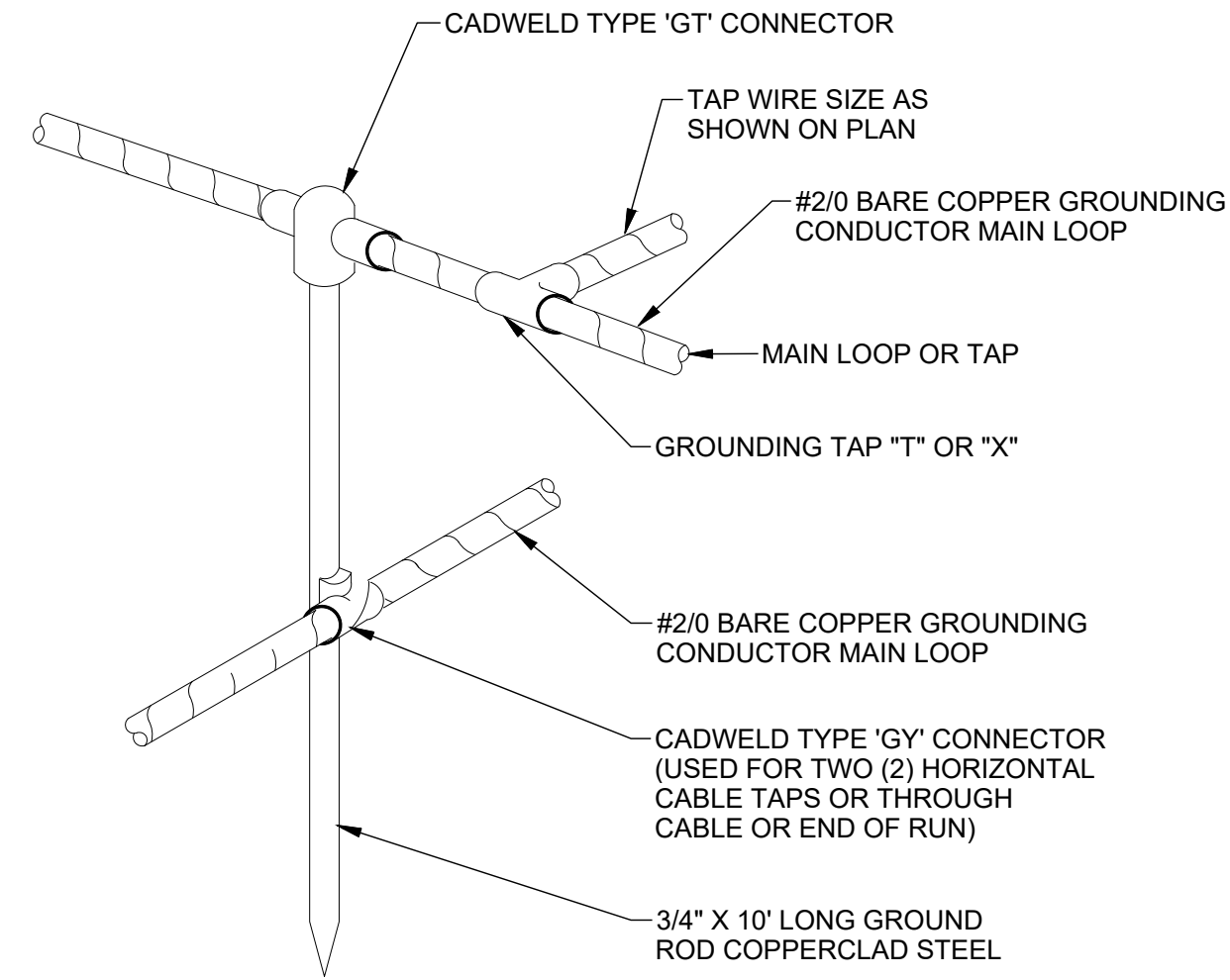
FLOW EQUALIZATION IMPROVEMENTS
CITY OF MARSHALLTOWN
MARSHALLTOWN, IOWA

E-ELECTRICAL
ELECTRICAL PLAN - SBR BUILDING

SHEET NO.
E.103



1 TEST WELL DETAIL
SCALE: NOT TO SCALE



2 CONDUCTOR TO GROUND ROD CONNECTION
SCALE: NOT TO SCALE



3 MONFORT STRUCTURE
UPPER LEVEL CONTROL PANEL
SCALE: NOT TO SCALE

BID SET

DRAWN BY: BDB JOB DATE: 2026 SCALE: ViewportScale
APPROVED: CSB JOB NUMBER: 2503420
CAD DATE: 7/23/2026 10:59 AM
CAD FILE: 2503420-E-DETAILS-E501.dwg

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FLOW EQUALIZATION IMPROVEMENTS
CITY OF MARSHALLTOWN
MARSHALLTOWN, IOWA

E-ELECTRICAL
ELECTRICAL DETAILS

SHEET NO.
E.501

CONTROL CABLE & RACEWAY SCHEDULE

CIRCUIT #	FROM	TAG #	TO	TAG #	CONDUCTORS	CONDUIT	REMARKS
C2000	SWIFT VALVE NO. 1	PNV-2034	SECONDARY CONTROL PANEL	SPCP-I	EXISTING - 2-#18 TSP, #14 GND	EXISTING	RECONNECT EXISTING CIRCUIT TO NEW VALVE ACTUATOR. EXTEND CONDUIT AND CONDUCTORS AS REQUIRED.
C2001	SWIFT VALVE NO. 2	PNV-2044	SECONDARY CONTROL PANEL	SPCP-I	EXISTING - 2-#18 TSP, #14 GND	EXISTING	RECONNECT EXISTING CIRCUIT TO NEW VALVE ACTUATOR. EXTEND CONDUIT AND CONDUCTORS AS REQUIRED.
C2002	SWIFT VALVE NO. 3	PNV-2054	SECONDARY CONTROL PANEL	SPCP-I	EXISTING - 2-#18 TSP, #14 GND	EXISTING	RECONNECT EXISTING CIRCUIT TO NEW VALVE ACTUATOR. EXTEND CONDUIT AND CONDUCTORS AS REQUIRED.
C2003	SWIFT FLOW 1 FLOW ELEMENT	FE-2032	SWIFT FLOW 1 FLOW TRANSMITTER	FIT-2032	MANUFACTURER'S CABLE	1"	
C2004	SWIFT FLOW 1 FLOW TRANSMITTER	FIT-2032	SECONDARY CONTROL PANEL	SPCP-I	EXISTING - 1-#18 TSP, #14 GND	EXISTING	RECONNECT EXISTING CIRCUIT TO NEW FLOW TRANSMITTER. EXTEND CONDUIT AND CONDUCTORS AS REQUIRED.
C2005	SWIFT FLOW 2 FLOW ELEMENT	FE-2042	SWIFT FLOW 1 FLOW TRANSMITTER	FIT-2042	MANUFACTURER'S CABLE	1"	
C2006	SWIFT FLOW 2 FLOW TRANSMITTER	FIT-2042	SECONDARY CONTROL PANEL	SPCP-I	EXISTING - 1-#18 TSP, #14 GND	EXISTING	RECONNECT EXISTING CIRCUIT TO NEW FLOW TRANSMITTER. EXTEND CONDUIT AND CONDUCTORS AS REQUIRED.
C2007	SWIFT FLOW 3 FLOW ELEMENT	FE-2052	SWIFT FLOW 1 FLOW TRANSMITTER	FIT-2052	MANUFACTURER'S CABLE	1"	
C2008	SWIFT FLOW 3 FLOW TRANSMITTER	FIT-2052	SECONDARY CONTROL PANEL	SPCP-I	EXISTING - 1-#18 TSP, #14 GND	EXISTING	RECONNECT EXISTING CIRCUIT TO NEW FLOW TRANSMITTER. EXTEND CONDUIT AND CONDUCTORS AS REQUIRED.
C2009	SBR EQ TANK PRESSURE/LEVEL TRANSMITTER	PIT-2067	SBR CONTROL PANEL	SPCP-J	1-#18 TSP, #14 GND	1"	
C2010	SBR EQ TANK HIGH LEVEL FLOAT	LSH-2068	SBR CONTROL PANEL	SPCP-J	2-#14, #14 GND	1"	INTRINSICALLY SAFE CIRCUIT.
C2011	SBR PUMP 1 DISCHARGE VALVE	PV-2217	SBR CONTROL PANEL	SPCP-J	4-#14, #14 GND	3/4"	DISCRETE SIGNALS.
C2012	SBR PUMP 1 DISCHARGE VALVE	PV-2217	SBR CONTROL PANEL	SPCP-J	2-#18 TSP, #14 GND	3/4"	ANALOG SIGNALS.
C2013	SBR PUMP 2 DISCHARGE VALVE	PV-2227	SBR CONTROL PANEL	SPCP-J	4-#14, #14 GND	3/4"	DISCRETE SIGNALS.
C2014	SBR PUMP 2 DISCHARGE VALVE	PV-2227	SBR CONTROL PANEL	SPCP-J	2-#18 TSP, #14 GND	3/4"	ANALOG SIGNALS.
C2015	SBR PUMP 3 DISCHARGE VALVE	PV-2237	SBR CONTROL PANEL	SPCP-J	4-#14, #14 GND	3/4"	DISCRETE SIGNALS.
C2016	SBR PUMP 3 DISCHARGE VALVE	PV-2237	SBR CONTROL PANEL	SPCP-J	2-#18 TSP, #14 GND	3/4"	ANALOG SIGNALS.
C2017	NOT USED						
C2018	NOT USED						
C2019	NOT USED						
C2020	NOT USED						
C2021	NOT USED						

EXISTING PANEL LPM

240/120V	1 PHASE 3 WIRE W/ GND BAR	SURFACE MOUNTED								REMARKS: EXISTING CIRCUIT BREAKERS ARE TO BE REUSED TO POWER NEW CIRCUITS. PROVIDE UPDATED CIRCUIT SCHEDULE.	
40 AMP	MCB										
20 POLES	ONE SECTION										
DESCRIPTION	LOAD VA	REMARKS	O/C	CKT #	PH	CKT #	O/C	REMARKS	LOAD VA	DESCRIPTION	
PNV-2034		EXISTING	15/1	1	A	2					
PNV-2044		EXISTING	15/1	3	B	4					
PNV-2054		EXISTING	15/1	5	A	6					
				7	B	8					
				9	A	10					
				11	B	12					
				13	A	14					
				15	B	16					
				17	A	18					
				19	B	20					

EXISTING PANEL PPL-J

480/277V	3 PHASE 4 WIRE W/ GND BAR	SURFACE MOUNTED							NOTE: ALL CIRCUITS SHOWN IN GREY ARE EXISTING AND ARE REFERENCE. CIRCUITS IN BLACK SHALL BE NEW OR RE-USED CIRCUITS PROVIDED BY THIS PROJECT.		
42 POLES	ONE SECTION										
DESCRIPTION		LOAD VA	REMARKS	O/C	CKT #	PH	CKT #	O/C	REMARKS	LOAD VA	DESCRIPTION
BLOWER & ELECTRIC RM LIGHTS					1	A	2				NW UV FLOOD LIGHT
BASEMENT & UV STORAGE LIGHTS					3	B	4				SW UV FLOOD LIGHT
CEILING FAN CF-1					5	C	6				NE UV FLOOD LIGHT
SPARE					7	A	8				SE UV FLOOD LIGHT
HALL HEATER & ELECTRICAL ROOM					9	B	10				OUTDOOR FLOOD LIGHTS
HOIST					11	C	12				OUTDOOR FLOOD LIGHTS
HOIST					13	A	14				OUTDOOR FLOOD LIGHTS
HOIST					15	B	16	15/1	NEW	250	EQUALIZATION TANK EXTERIOR LIGHTING
RAW WASTE VALVES 1		350	RE-USE	20/3	17	C	18	15/1	NEW	40	HEAT TRACE
-		350	RE-USE	-	19	A	20				SPACE
-		350	RE-USE	-	21	B	22				SPACE
BATHROOM HEATER					23	C	24				SPACE
HYDRAULIC CLEANER					25	A	26				LIGHTING TRANSFORMER
GATE 1 OPERATOR					27	B	28				LIGHTING TRANSFORMER
GATE 2 OPERATOR					29	C	30				LIGHTING TRANSFORMER
RAW WASTE VALVES 2		350	NEW	20/3	31	A	32				SPACE
-		350	NEW	-	33	B	34				SPACE
-		350	NEW	-	35	C	36				SPACE
RAW WASTE VALVES 3		350	NEW	20/3	37	A	38				SPACE
-		350	NEW	-	39	B	40				SPACE
-		350	NEW	-	41	C	42				SPACE

LUMINAIRE SCHEDULE

LUM. NO.	MANUFACTURER	CATALOG NO.	LAMP DATA	VOLTAGE	DESCRIPTION	MOUNTING	ALTERNATE MANUFACTURERS	REMARKS
W1	CROUSE-HINDS	CPMV5LN-UNV1-S891 PC2	LED, 5200L, 4000K, 45W	120/277	CLASS I, DIVISION 2 EXTERIOR WALLPACK	SURFACE, WALL		1
S1	CROUSE-HINDS	PVMA-5L-P-UNV1	LED, 5884L, 4000K, 48W	120/277	LOW BAY WALKWAY	STANCHION, RAILING		2

GENERAL NOTES

- SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
- CONTRACTOR TO VERIFY LUMINAIRE CATALOG NUMBER AND INSTALLATION REQUIREMENTS PRIOR TO ORDERING.
- LISTED ALTERNATE MANUFACTURERS ARE PERMITTED TO BID AN EQUIVALENT LUMINAIRE WHICH COMPLIES WITH THE PRODUCT REQUIREMENTS IDENTIFIED IN THIS SCHEDULE AND THE SPECIFICATIONS WITHOUT SUBMITTING A PRIOR APPROVAL REQUEST. ALTERNATE LUMINAIRES WILL BE REVIEWED DURING THE SUBMITTAL PROCESS AND THE MANUFACTURER WILL BE RESPONSIBLE TO PROVIDE A LUMINAIRE WHICH MEETS THE PRODUCT REQUIREMENTS. WHERE AN ALTERNATE MANUFACTURER IS NOT LISTED, A PRIOR APPROVAL REQUEST MUST BE SUBMITTED IN ACCORDANCE WITH THE SPECIFICATIONS IN ORDER TO BID THAT MANUFACTURER'S PRODUCT.

REMARKS

- MOUNT AT 16' AFF UNLESS OTHERWISE INDICATED.
- PROVIDE 10" HIGH, 1.5" DIAMETER ALUMINUM STANCHION ATTACHED TO RAILING FOR MOUNTING LUMINAIRE; SWIVELPOLE MODEL S3. PROVIDE REQUIRED MOUNTING ACCESSORIES.

BID SET

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FLOW EQUALIZATION IMPROVEMENTS
CITY OF MARSHALLTOWN
MARSHALLTOWN, IOWA

E-ELECTRICAL

SCHEDULES

SHEET NO.
E.601

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Specification No. _____

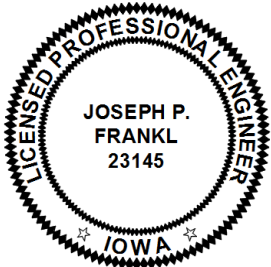
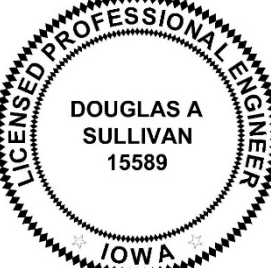
**PROJECT MANUAL
FOR
FLOW EQUALIZATION IMPROVEMENTS
INDUSTRIAL PRETREATED WASTEWATER
Project Number WPC25002
Marshalltown, Iowa
2026**

OWNERSHIP OF DOCUMENT

This document, and the ideas and designs incorporated herein, as an instrument of professional service, is the property of HR Green, Inc. and is not to be used, in whole or in part, for any other project without the written authorization of HR Green, Inc.

CERTIFICATION

PROJECT MANUAL Flow Equalization Improvements City of Marshalltown 2026

	I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa. <u>Joseph P. Frankl</u> Date: <u>08-14-26</u> JOSEPH P. FRANKL, P.E. License No. 23145 My renewal date is December 31, 2026. Pages or sheets covered by this seal: Division 1, 2, 9, 22 (except 22 0533 and 22 0719), 31, 32, and 33
	I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa. <u>Daniel J. Origer</u> Date: <u>08-14-26</u> DANIEL J. ORIGER, P.E. License No. P26358 My renewal date is December 31, 2027. Pages or sheets covered by this seal: Division 25
	I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa. <u>Douglas A. Sullivan</u> Date: <u>08-14-26</u> DOUGLAS A SULLIVAN, P.E. License No. 15589 My renewal date is December 31, 2026. Pages or sheets covered by this seal: 22 0533 and 22 0719
	I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa. <u>Caleb Barduson</u> Date: <u>08-14-26</u> CALEB S. BARDUSON, P.E. License No. 30641 My renewal date is December 31, 2027. Pages or sheets covered by this seal: Division 26

	I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.	
	<i>Derek Matthies</i>	Date: 08-14-26
	DEREK MATTHIES, P.E.	
	License No. P23006	
	My renewal date is December 31, 2026	
	Pages or sheets covered by this seal: Divisions 3 and 5	

HR Green, Inc.
5525 Merle Hay Road, Suite 200
Johnston, IA 50131
Phone: 515-278-2913
Fax: 515-278-1846

PROJECT MANUAL
Flow Equalization Improvements
City of Marshalltown

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**SECTION 00110
NOTICE TO BIDDERS**

FILING OF SEALED BIDS

Sealed Bids will be received by the City Clerk of the City of Marshalltown ("Owner"), at City of Marshalltown, 24 N. Center St., Marshalltown, IA 50158 until 10:00 AM, on October 6, 2026, for the construction of the proposed Flow Equalization Improvements for said Owner, as described in the Specifications and drawings therefore on file in the office of the City Clerk of the City of Marshalltown. Bids will be publicly opened, read, and tabulated on the day and hour specified above, and will be acted upon by the Owner at that time or at such later time and place as the Owner may then determine.

GENERAL PROJECT DESCRIPTION

All Work, materials, and equipment are to be in accordance with the Contract Documents on file in the office of the City Clerk, and at the office of HR Green, Des Moines ("Engineer"), 5525 Merle Hay Road Suite 200, Johnston, IA 50131, by this reference made a part hereof as though fully set out and incorporated herein.

The Work for the said improvement, as required by the Contract Documents, is generally described as follows:

This project includes the installation of a bolted steel tank flow equalization basin (FEB) and piping to equalize flow pumped from the nearby JBS processing plant and a future industrial client. Modulating valves will be replaced in the flow control structures upstream and downstream of the proposed FEB tank.

The City of Marshalltown, in accordance with Title VI of the Civil Rights Act of 1964, 78 Stat. 252, 42U.S.C. 2000d to 2000d-4 and Title 49, Code of Federal Regulations, Department of Transportation, Subtitle A, Office of the Secretary, Part 21, Nondiscrimination in Federally-assisted programs of the Department of Transportation issued pursuant to such Act, hereby notifies all bidders that it will affirmatively ensure that in any contract entered into pursuant to this advertisement, minority business enterprises will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, or national origin in consideration for an award.

Work under the proposed Contract Documents shall be commenced upon written Notice to Proceed anticipated to be issued within seven (7) days of the Effective Date of the Agreement and shall be substantially complete on or before August 31, 2027 and fully complete on or before September 30, 2027, subject to any extension of time, which may be granted by the Owner.

PRE-BID CONFERENCE

Prospective bidders are encouraged to attend a pre-bid walk through of the proposed Work site which will be conducted jointly by the Owner and Engineer at 10:00 AM on September 29, 2026 at Marshalltown WPCP. The objective of the walk through is to acquaint bidders with the site conditions.

OTHER PERTINENT INFORMATION

Each Bid shall be made on the Bid Form prepared for this purpose, which may be obtained from the Engineer. Any alteration in the official Bid Form will entitle the Owner, at its option, to reject the Bid from consideration. Each Bid shall be accompanied by a Bid Bond or a certified cashier's check, drawn on a solvent state or national bank, or a certified share draft drawn on a credit union in Iowa or chartered under the laws of the United States, and filed in a sealed envelope separate from the one containing the Bid. The Bid Bond shall be substantially in the form set forth in the Contract Documents. The Contractor's certified check or Bid Bond shall be in an amount equal to five (5) percent of the amount of the Bid, made payable to the Owner. The check may be cashed for the full amount by the Owner or the Bid Bond forfeited in the full amount to the Owner as liquidated damages in the event the successful Bidder fails to enter into contract and file acceptable bonds satisfactory to the Owner assuring the faithful fulfillment of the contract and maintenance of said improvements as required by law within ten (10) days after the acceptance of the Bid.

The Owner reserves the right to reject any or all Bids, to readvertise for Bids or to defer action on the Bids received for a period not to exceed 30 days from and after the date and time specified in this Notice to Bidders for receiving said Bids, and to waive irregularities and informalities.

The successful Bidder will be required to furnish a Performance Bond, a Payment Bond, and a Maintenance/Warranty bond. Contractor shall defer to the supplementary conditions for specific bond amounts required. Said bonds to be issued by a responsible Surety approved by the Owner and shall guarantee that the Principal shall promptly make payment to all persons, firms, Subcontractors, and corporations furnishing materials for or performing labor in the performance of the Work stated and the faithful performance of the contract and the terms and conditions therein contained and the guarantee and maintenance of said facilities in good repair and working conditions for not less than four (4) year(s) from the Notice of Acceptability of such improvements by the Owner.

Payment of the cost of said project will be made from cash on hand and/or received, payable from any fund or funds of Owner which may be legally used for such purpose, including, but not limited to, any of the following sources, or any combination thereof, at the sole discretion of Owner: (1) past and/or future earnings of Owner's utility; (2) proceeds of the sale and issuance of General Obligation Bonds and/or revenue bonds (or project notes anticipating the sale of such bonds); (3) federal, State or local grants or loans; and (4) proceeds from the sale of warrants, as authorized by Section 384.57 of the Code of Iowa. Payments will be made to the Contractor in accordance with the Contract Documents.

Construction items and materials included in the Project are exempt from State of Iowa and Local Option Sales and Use Taxes. Contractor is responsible for obtaining the exemption on items

included, as provided by law or for applying for reimbursement for such taxes paid. Contractor shall pay all other taxes required to be paid by Contractor in accordance with the laws and regulations of the place of the Project that are applicable during the performance of the Work. Contractor shall NOT include Sales and Use Tax in Contractor's bid. For more information on this exemption, please check the State of Iowa's website: www.state.ia.us/tax/business/Contr-ExEnt-Index.html

By virtue of statutory authority, preference will be given to products and provisions grown and coal produced within the State of Iowa, and to Iowa domestic labor, to the extent lawfully required under Iowa statutes provided that the award of contract will be made to the lowest responsible bidder submitting the lowest responsive bid, which shall be determined without regard to state or local laws whereby preference is given on factors other than the amount of the Bid.

The proposed Contract Documents are on file with the Owner and Engineer for public examination. Copies of said Contract Documents and one unbound copy of the Bid Form may be secured at the office of HR Green, Des Moines, 5525 Merle Hay Road Suite 200, Johnston, IA 50131, Phone Number 515-278-2913.

This public improvement is being constructed pursuant to the provisions of Chapters 26 and 573 of the latest edition of the Iowa Code, including revisions.

Published upon order of the City of Marshalltown.

City of Marshalltown

/s/ _____
Mike Ladehoff, Mayor

ATTEST:

/s/ _____
Alicia Hunter, City Clerk

END OF SECTION 00110

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SECTION 00120
NOTICE OF PUBLIC HEARING

NOTICE OF PUBLIC HEARING ON PROPOSED PLANS, SPECIFICATIONS, PROPOSED FORM OF CONTRACT AND ESTIMATED COSTS FOR THE CONSTRUCTION OF PROJECT Flow Equalization Improvements IN AND FOR THE City of Marshalltown, Marshalltown, IA 50158.

Notice is hereby given that there are on file with the Clerk, City of Marshalltown of the City of Marshalltown, Marshalltown, IA 50158, proposed drawings, project manual, proposed Form of Contract ("Contract Documents"), and opinion of probable cost for the construction of said improvement, for said Owner.

A hearing will be conducted thereon at a meeting of the City of Marshalltown to be held at 24 N. Center St., Marshalltown, IA 50158 at 5:30 PM, on September 28, 2026, at which time and place any person may appear and file objections to the proposed drawings, project manual, proposed Form of Contract ("Contract Documents"), and opinion of probable cost for the construction of said improvement.

Published upon order of the City of Marshalltown.

/s/ _____
Mike Ladehoff, Mayor

ATTEST:

/s/ _____
Alicia Hunter, City Clerk

END OF SECTION 00120

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**SECTION 00200
INSTRUCTIONS TO BIDDERS**

ARTICLE 1. DEFINED TERMS. Terms used in these Instructions to Bidders and the Notice to Bidders which are defined in the General Conditions have the meanings assigned to them in the General Conditions. The term "Bidder" means one who submits a Bid directly to Owner, as distinct from a sub-bidder, who submits a Bid to a Bidder.

ARTICLE 2. INTERPRETATIONS AND ADDENDA. All questions about the meaning or intent of the Contract Documents are to be directed to Engineer. Additions, deletions, or revisions to the Contract Documents considered necessary by the Engineer in response to such questions will be issued by Addenda mailed or delivered to all parties recorded by the Engineer or Owner as having received the Contract Documents. Questions received less than ten (10) days prior to the date of Bids may not be answered. Only answers to such questions issued by formal written Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

2.1 Addenda may also be issued to make other additions, deletions, or revisions to the Contract Documents.

ARTICLE 3. BIDDER'S EXAMINATION OF CONTRACT DOCUMENTS AND SITE.

3.1 It is the responsibility of each Bidder before submitting a Bid:

- A. To examine thoroughly the Contract Documents and other related data identified in the Bidding Documents (including "technical" data referred to below);
- B. To visit the site to become familiar with local conditions that may affect cost, progress, or performance, of the Work;
- C. To consider federal, state, and local laws and regulations that may affect cost, progress, or performance of the Work;
- D. To study and carefully correlate the Bidder's observations with the Contract Documents; and
- E. To notify the Engineer of all conflicts, errors, ambiguities, or discrepancies in or between the Contract Documents and such other related data.

3.2 Reference is made to the Supplementary Conditions for identification of:

- A. Those reports of explorations and tests of subsurface conditions at the site which have been utilized by the Engineer in the preparation of the Contract Documents. The Bidder may rely upon the accuracy of the technical data contained in such reports. However, the interpretation of such technical data, including any interpolation or extrapolation thereof, together with non-technical data,

interpretations, and opinions contained therein or the completeness thereof, is the responsibility of the Bidder.

- B. Those drawings of physical condition in or relating to existing surface and subsurface conditions (except Underground Utilities) which are at or contiguous to the site have been utilized by the Engineer in the preparation of the Contract Documents. The Bidder may rely upon the accuracy of the technical data contained in such drawings, however, the interpretation of such technical data, including any interpolation or extrapolation thereof, together with non-technical data, interpretations, and opinions contained in such drawings or the completeness thereof, is the responsibility of the Bidder.
- 3.3 Copies of reports and drawings referred to in Paragraph SC-5.03 of the Supplementary Conditions will be made available by the Owner to any Bidder at cost of reproduction, if copies are desired. Those reports and drawings are not part of the Contract Documents, but the technical data contained therein upon which the Bidder is entitled to rely, as provided in Paragraph SC-5.03 of the Supplementary Conditions, are incorporated herein by reference.
- 3.4 Information and data reflected in the Contract Documents with respect to Underground Utilities at or contiguous to the site is based upon information and data furnished to the Owner and the Engineer by the owners of such Underground Utilities or others, and neither the Owner nor the Engineer assume responsibility for the accuracy or completeness thereof.
- 3.5 Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders on subsurface conditions, Underground Utilities, and other physical conditions, and possible changes in the Contract Documents due to differing or unanticipated conditions appear in Paragraphs 5.03, 5.04 and 5.05 of the General Conditions.
- 3.6 Before submitting a Bid, each Bidder will, at Bidder's own expense, make or obtain any additional examinations, investigations, explorations, tests, and studies and obtain any additional information and data which pertain to the physical conditions (surface, subsurface, and Underground Utilities) at or contiguous to the site or otherwise which may affect cost, progress, or performance of the Work and which the Bidder deems necessary to determine its Bid for performing the Work in accordance with the time, price, and other items and conditions of the Contract Documents.
- 3.7 Upon request and a minimum of two (2) days' notice, the Owner will provide each Bidder access to the site to conduct such examinations, investigations, explorations, tests, and studies as each Bidder deems necessary for submission of a Bid. Location of any excavation or boring shall be subject to prior approval of Owner and applicable agencies. Bidder shall fill all holes, restore all pavement to match existing structural section, and shall clean up and restore the site to its former condition upon completion of such explorations.

- 3.8 The lands upon which the Work is to be performed, rights-of-way, and easements for access thereto and other land designated for use by the Contractor in performing the Work are identified in the Contract Documents. All additional lands and access thereto required for temporary construction facilities or storage of materials and equipment are to be provided by the Contractor. Easements for permanent structures or permanent changes in existing structures are to be obtained and paid for by the Owner unless otherwise provided in the Contract Documents.
- 3.9 The submission of a Bid will constitute an incontrovertible representation by the Bidder that the Bidder has complied with every requirement of this Article 3 and the following:
- A. That the Bid is premised upon performing and finishing the Work required by the Contract Documents without exception and applying such means, methods, techniques, sequences or procedures of construction (if any) as may be required by the Contract Documents;
 - B. That Bidder has given the Engineer written notice of all conflicts, errors, ambiguities, and discrepancies in the Contract Documents and the written resolutions thereof by the Engineer is acceptable to the Bidder; and
 - C. That the Contract Documents are sufficient in scope and detail to indicate and convey understanding of all terms and conditions for performing and furnishing of the Work.

ARTICLE 4. BID FORM AND DELIVERY OF BID. Each prospective Bidder shall be furnished one copy of the Contract Documents and one separate unbound copy of the Bid Form and Bid Bond as stipulated in the Notice to Bidders. The unbound copy of the Bid Form is to be completed in ink and submitted with the Bid Bond. All names must be printed below the signatures.

Each Bid shall be submitted in a sealed envelope with "Bid Proposal" and the "Due" date clearly printed on the front. The Bid Bond shall be submitted in a separate sealed envelope with "BID BOND" clearly printed on the front. When sent by mail, the sealed Bid shall be addressed as follows:

City of Marshalltown
ATTN: City Clerk
24 N. Center St.
Marshalltown, IA 50158

The Bidder may attach a substitute Bid Form printed by a computer in lieu of completing the furnished Bid Form. If a substitute Bid Form is used, it shall be attached to the back side of the furnished Bid Form. Such computer printed substitute Bid Form shall include, but not limited to, the following at the top of each page:

- A. Project Title
- B. Project Number
- C. Letting Date

D. Bidder's Name and Address

The substitute computer printed Bid Form shall have column headings that include the Line Number, Item Description, Unit Designation, Approximate Quantity, Unit Bid Price, Amount Bid for each item, Total or Gross Sum Bid below the last Bid Item and Bidder's name, signature in ink and title at the end of the Bid Form. The signature and Total Gross Sum Bid shall also be written in ink on the furnished Bid Form.

Bids shall be filed prior to the time and at the place specified by the Notice to Bidders. Bid proposals received after the time for opening of Bids will be returned to the Bidder unopened.

In case of a discrepancy between the line number, Bid Item description, and/or quantity shown in the furnished proposal and those shown on the substitute computer printed Bid Form, the Bid Item description and the quantity shown in the furnished proposal shall govern. The Unit Bid Price shown on the substitute computer printed Bid Form shall govern whether or not the amount Bid shown is correct. The substitute Bid Form page size and size of printed characters shall be approximately the same as the furnished Bid Form. Solid lines for separating columns and line numbers need not be printed. Pages must be arranged and numbered the same as those contained in the furnished Bid Form. Any irregularities, which are not waived by the Owner as a technicality, will result in rejection of the Bid.

ARTICLE 5. DISQUALIFICATION OF BIDDERS.

Bids will be considered non-responsive and shall be rejected for any of the following reasons:

More than one Bid from an individual, firm, partnership, corporation or association under the same or different names will not be considered. If the Owner believes that any Bidder is interested in more than one Bid for the Work contemplated, all Bids in which such Bidder is interested will be rejected. If the Owner believes that collusion exists among the Bidders, all Bids will be rejected. A party who has quoted prices to a Bidder is not hereby disqualified from quoting prices to other Bidders, or from submitting a Bid directly for the Work.

If there are unauthorized additions, conditional or alternate bids, or irregularities of any kind which may tend to make the proposal incomplete, indefinite or ambiguous as to its meaning, the Bid may be rejected.

If the Bidder submits an obviously unbalanced bid, the Bid may be rejected. An unbalanced bid shall be defined as a bid containing lump sum or unit bid prices which do not reflect reasonable actual costs plus a reasonable proportionate share of the Bidder's anticipated profit, overhead costs and other indirect costs to complete that bid.

ARTICLE 6. QUANTITIES OF WORK. The quantities of Work or material stated in additive items of the Bid are supplied only to give an indication of the general scope of the Work; the Owner does not expressly or by implication agree that the actual amount of Work or material will correspond therewith, and reserves the right after award to increase or decrease the quantity of any item of the Work by an amount up to and including 25 percent of any Bid item, without a

change in the unit price, and shall include the right to delete any Bid item in its entirety, or to add additional Bid items up to and including an aggregate total amount not to exceed 25 percent of the Contract Price.

ARTICLE 7. SUBSTITUTE OR “OR EQUAL” ITEMS. Whenever materials or equipment are specified or described in the Contract Documents by using the name of a particular Supplier and the name is followed by the words “or equal”, the procedure for the submittal of substitute or “Or equal” products is specified in Sections 01 2500 – Substitution Procedures and 01 6000 – Product Requirements.

Bidders wishing to obtain the Engineer’s approval for alternative materials or equipment prior to the bid opening shall do so in writing at least 10 days prior to the opening of sealed bids. Approval, if granted, will be made in the form of an Addendum issued by the Engineer to all Planholders of record. If such approval is not granted prior to the opening of the bids, then consideration of the alternative may be made after award of the Contract if beneficial to the Owner.

ARTICLE 8. COMPETENCY OF BIDDERS. In selecting the lowest responsive, responsible Bidder, consideration will be given not only to the financial standing but also to the general competency of the Bidder for the performance of the Work covered by the Bid.

ARTICLE 9. SUBMISSION OF BIDS. The Bid shall be delivered by the time and to the place stipulated in the Notice to Bidders. It is the Bidder’s sole responsibility to see that its Bid is received in proper time and at the proper place. Bidders shall hold bids for 30 days after the opening of bids.

ARTICLE 10. BID SECURITY, BONDS, AND INSURANCE. Each Bid shall be accompanied by a certified or cashier’s check or share draft or approved Bid Bond in the amount stated in the Notice to Bidders. Said check or bond shall be made payable to the Owner and shall be given as a guarantee that the Bidder, if awarded the Work, will enter into Contract with the Owner, and will furnish the necessary insurance certificates, Payment Bond, Performance Bond, and any required Warranty Bond; each of said bonds to be in the amount stated in the Supplementary Conditions. In case of refusal or failure to enter into said Contract, the check or Bid Bond, as the case may be, shall be forfeited to the Owner. If the Bidder elects to furnish a Bid Bond as its Bid security, the Bidder shall use the Bid Bond form bound herein, or one conforming substantially to it in form. Bonds shall be issued by a surety authorized to do business in the State of Iowa. Checks or share drafts shall be certified or issued by a State or National bank, or a credit union in Iowa or chartered under the laws of the United States.

ARTICLE 11. DISCREPANCIES IN BIDS. In the event there is more than one Bid Item in a Bid Schedule, the Bidder shall furnish a price for all Bid Items in the Bid Form, and failure to do so will render the Bid non-responsive and may cause its rejection. In the event there are Unit Price Bid Items in a Bid Schedule and the amount indicated for a Unit Price Bid Item does not equal the product of the unit price and quantity, the unit price shall govern and the amount will be corrected accordingly, and the Bidder shall be bound by said correction. In the event there is more than one Bid Item in a Bid Schedule and the total indicated for the Schedule does not agree with the sum of the prices Bid on the individual items, the prices Bid on the individual items shall govern

and the total for the Schedule will be corrected accordingly, and the Bidder shall be bound by said correction.

ARTICLE 12. MODIFICATIONS AND UNAUTHORIZED ALTERNATIVE BIDS. Unauthorized conditions, limitations or provisos attached to the Bid shall render it informal and may cause its rejection as being non-responsive. The completed Bid Form shall be without interlineation, alterations or erasures in the printed text. Alternative Bids will not be considered unless called for. Oral, telegraphic or telephonic Bids or modifications will not be considered.

ARTICLE 13. WITHDRAWAL OF BID. A Bidder may request, without prejudice, to withdraw its Bid after it has been submitted to the Owner, provided such request is made in writing to the Owner prior to the time set for receiving Bids.

Modifications or corrections to Bids may be made on the withdrawn Bid provided such modifications or corrections are initiated by the Bidder and are received by the Owner prior to the time set for receiving Bids. Modifications or corrections to a Bid will not be accepted if the modifications or corrections render the bid security inadequate or if not accompanied by sufficient additional bid security.

If a Bidder has requested in writing to withdraw its Bid, said Bidder may submit a different Bid and bid security any time prior to the time set for receiving proposals.

ARTICLE 14. AWARD OF CONTRACT. Award of the contract, if awarded, will be made to the lowest responsive, responsible Bidder whose Bid complies with the requirements of the Contract Documents. Unless otherwise specified, any such award will be made within the period stated in the Notice to Bidders that the Bids are to remain open. Unless otherwise indicated, a single award will be made for all the Bid items in an individual Bid Schedule. The Owner reserves the right to reject any or all Bids, to waive any informality in a Bid and to select alternate additive or deductive Bid items as desired by the Owner to determine the award of the Contract.

ARTICLE 15. RETURN OF BID SECURITY. After the Bids are opened, verified, and duly considered, the bid security will be released pursuant to the current statutory provisions of the Iowa Code. Should the successful Bidder fail to enter into contract, the Bid guaranty shall be forfeited to the Owner to compensate for administrative expenses of making a re-award or issuing a new request.

ARTICLE 16. EXECUTION OF AGREEMENT. The Bidder to whom award is made shall execute a written Agreement with the Owner on the form of agreement provided, shall secure all insurance, and shall furnish all certificates and bonds required by the Contract Documents within ten (10) days after receipt of the Notice of Award from the Owner. Failure or refusal to enter into contract as herein provided or to conform to any of the stipulated requirements in connection therewith shall be just cause for annulment of the award and forfeiture of the Bid security. If the lowest responsive, responsible Bidder refuses or fails to execute the Agreement, the Owner may award the Contract to the second lowest, responsive, responsible Bidder. If the second lowest responsive, responsible Bidder refuses or fails to execute the Agreement, the Owner may award the Contract to the third lowest, responsive, responsible Bidder.

ARTICLE 17. ADDENDA. Each Bid Form shall include specific acknowledgment, in the space provided in Section 00400, Bid Form, of receipt of all addenda issued and mailed by the Owner during the bidding period. Failure to so acknowledge may result in the Bid being rejected as not responsive.

ARTICLE 18. SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION. The Contractor shall comply with all state and federal laws and county and local ordinances and regulations which in any manner affect those engaged or employed in the Work.

ARTICLE 19. PRE-BID CONFERENCE. A pre-bid conference will be held at a time and place stated in Section 00110, Notice to Bidders. Representatives of the Owner and Engineer will be present. A tour of the site will be conducted at the end of the conference. Meeting minutes and attendance list for the pre-bid conference will be made available to all those in attendance.

ARTICLE 20. LIQUIDATED DAMAGES. Provisions for liquidated damages, if any, are set forth in the Agreement and the Supplementary Conditions.

ARTICLE 21. FEDERAL TAX ID NUMBER. Each Bidder shall state its Federal Tax Identification Number on the line provided on the Bid Form. The Owner is required to report to IRS on Form 1099 all payments involving labor or services provided by vendors, and lack of this number may delay contract payments until the number is provided.

ARTICLE 22. LOCAL PREFERENCE. By virtue of statutory authority, preference will be given to materials, products, and supplies found or produced within the State of Iowa. Bidders resident in Iowa shall be allowed a preference over the Bid of any Bidder from any other state enforcing or having a preference for resident Bidders, equal to such preference.

The Bidder Status Form is required by the Iowa Labor Commissioner, pursuant to Iowa Administrative Code rule 875-156.2(1). The Bidder must complete the form and submit it with the bid. Failure to provide the Bidder Status Form with the bid may result in the bid being deemed non-responsive and may result in the bid being rejected. If the Bidder does not qualify as a resident bidder, the nonresident bidder shall specify on the Bidder Status Form whether any preference is given to resident bidders, including but not limited to the form of any preference to bidders, the imposition of any type of labor force preference, or any other form of preferential treatment to bidders or laborers from that state or foreign country is in effect in the nonresident bidder's state or country of domicile at the time of a bid submittal. Application of the preference against a non-resident bidder shall be in accordance with the information filed with the Proposal on the Bidder Status Form.

Such preferences will not be given where funding requirements, federal or otherwise, prohibit the giving of such preferences.

ARTICLE 23. BIDDER'S CERTIFICATION.

A. QUALIFICATION OF BIDDER:

Bidder shall certify that they are, at the time of bidding, and shall be, throughout the period of the contract, licensed in the State of Iowa. The Bidder shall provide its Iowa Contractor license number on the Bid Form. Bidder shall further certify that he is skilled and regularly engaged in the general class and type of work called for in the Contract Documents.

Bidder also certifies that they are knowledgeable of the unusual and peculiar hazards associated with the general class and type of work required to construct the specified project within the terms given in the Contract Documents.

Bidder shall be competent and skilled in the protective measures necessary for the safe performance of the construction Work with respect to such unusual and peculiar hazards.

END OF SECTION 00200

SECTION 00400
BID FORM

BID TO: City of Marshalltown
24 N. Center St.
Marshalltown, IA 50158

1. The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with the Owner in the form included in the Contract Documents to perform the WORK as specified or indicated in said Contract Documents entitled:

Flow Equalization Improvements

2. Bidder accepts all of the terms and conditions of the Contract Documents, including without limitation those in the Notice to Bidders and Instructions to Bidders, dealing with the disposition of the Bid Security.
3. Schedule of prices for construction of Flow Equalization Improvements in accordance with the Contract Documents.

ITEM NO.	ITEM DESCRIPTION	UNIT	TOTAL
1	Complete Project	Lump Sum	\$

4. Name of person who inspected site of proposed WORK for your firm:

Name: _____ Date of Inspection: _____

5. Bidder has examined copies of all the Contract Documents including the following addenda (receipt of all of which is hereby acknowledged):

Number	_____	Date	_____
	_____		_____
	_____		_____

6. Failure to acknowledge addenda may render the Bid non-responsive and be cause for its rejection. Bidder has familiarized itself with the nature and extent of the Contract Documents, WORK, site, locality where the WORK is to be performed, the legal requirements (federal, state and local laws, ordinances, rules and regulations), and the conditions affecting cost, progress or performance of the WORK and has made such independent investigations as Bidder deems necessary.
7. The Bidder hereby agrees to comply with the additional requirements listed below which are included in this proposal and identified as Bid Form attachments:

ITEM NO. DESCRIPTION OF ATTACHMENT

1. Bidder Status Form and Worksheet: Authorization to Transact Business

To all the foregoing, and including all Bid Forms contained in this Bid, said Bidder further agrees to complete the WORK required under the Contract Documents within the Contract Time stipulated in said Contract Documents, and to accept in full payment therefore the Contract Price based on the Total Bid Price(s) named in the aforementioned Bid Form.

Signed this _____ day of _____, 2026.

By: _____
(Firm Name)

(Signature)

(Typed or Printed Name)

(Title)

- (1) BIDDER's name and address:

- (2) BIDDER's telephone numbers, and e-mail address:

- (3) Federal Tax I.D. No.: Iowa Contractor License No.:

(DO NOT OMIT)

- (4) BIDDER's authorized agent for contract execution: _____
Name and Title

- (5) BIDDER's attesting agent for contract execution: _____
Name and Title

- (6) BIDDER's type of business: _____
(Corporation, partnership, individual, etc.)

HR Green, Inc.
Project No. 2503420

Flow Equalization Improvements
Marshalltown, IA

END OF SECTION 00400

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Bidder Status Form

To be completed by all bidders

Part A

Please answer "Yes" or "No" for each of the following:

☐ Yes ☐ No

My company is authorized to transact business in Iowa.
(To help you determine if your company is authorized, please review the worksheet on the next page).

☐ Yes ☐ No

My company has an office to transact business in Iowa.

☐ Yes ☐ No

My company's office in Iowa is suitable for more than receiving mail, telephone calls, and email.

☐ Yes ☐ No

My company has been conducting business in Iowa for at least 3 years prior to the first request for bids on this project.

☐ Yes ☐ No

My company is not a subsidiary of another business entity or my company is a subsidiary of another business entity that would qualify as a resident bidder in Iowa.

If you answered "Yes" for each question above, your company qualifies as a resident bidder. Please complete Parts B and D of this form.

If you answered "No" to one or more questions above, your company is a nonresident bidder. Please complete Parts C and D of this form.

To be completed by resident bidders

Part B

My company has maintained offices in Iowa during the past 3 years at the following addresses:

Dates: _____ / _____ / _____ to _____ / _____ / _____

Address: _____

City, State, Zip: _____

Dates: _____ / _____ / _____ to _____ / _____ / _____

Address: _____

City, State, Zip: _____

Dates: _____ / _____ / _____ to _____ / _____ / _____

Address: _____

City, State, Zip: _____

You may attach additional sheet(s) if needed.

To be completed by non-resident bidders

Part C

1. Name of home state or foreign country reported to the Iowa Secretary of State:

2. Does your company's home state or foreign country offer preferences to resident bidders, resident labor force preferences or any other type of preference to bidders or laborers?

☐ Yes ☐ No

3. If you answered "Yes" to question 2, identify each preference offered by your company's home state or foreign country and the appropriate legal citation.

You may attach additional sheet(s) if needed.

To be completed by all bidders

Part D

I certify that the statements made on this document are true and complete to the best of my knowledge and I know that my failure to provide accurate and truthful information may be a reason to reject my bid.

Signed Name: _____

Signature: _____

Firm Name: _____

Date: _____

Email Address: _____

Phone Number: _____

Worksheet: Authorization to Transact Business

This worksheet may be used to help complete Part A of the Resident Bidder Status form. If at least one of the following describes your business, you are authorized to transact business in Iowa.

☐ Yes ☐ No

My business is currently registered as a contractor with the Iowa Division of Labor.

☐ Yes ☐ No

My business is a sole proprietorship and I am an Iowa resident for Iowa income tax purposes.

☐ Yes ☐ No

My business is a general partnership or joint venture. More than 50 percent of the general partners or joint venture parties are residents of Iowa for Iowa income tax purposes.

☐ Yes ☐ No

My business is an active corporation with the Iowa Secretary of State and has paid all fees required by the Secretary of State, has filed its most recent biennial report, and has not filed articles of dissolution.

☐ Yes ☐ No

My business is a corporation whose articles of incorporation are filed in a state other than Iowa, the corporation has received a certificate of authority from the Iowa secretary of state, has filed its most recent biennial report with the secretary of state, and has neither received a certificate of withdrawal from the secretary of state nor had its authority revoked.

☐ Yes ☐ No

My business is a limited liability partnership which has filed a statement of qualification in this state and the statement has not been canceled.

☐ Yes ☐ No

My business is a limited liability partnership which has filed a statement of qualification in a state other than Iowa, has filed a statement of foreign qualification in Iowa and a statement of cancellation has not been filed.

☐ Yes ☐ No

My business is a limited partnership or limited liability limited partnership which has filed a certificate of limited partnership in this state, and has not filed a statement of termination.

☐ Yes ☐ No

My business is a limited partnership or a limited liability limited partnership whose certificate of limited partnership is filed in a state other than Iowa, the limited partnership or limited liability limited partnership has received notification from the Iowa secretary of state that the application for certificate of authority has been approved and no notice of cancellation has been filed by the limited partnership or the limited liability limited partnership.

☐ Yes ☐ No

My business is a limited liability company whose certificate of organization is filed in Iowa and has not filed a statement of termination.

☐ Yes ☐ No

My business is a limited liability company whose certificate of organization is filed in a state other than Iowa, has received a certificate of authority to transact business in Iowa and the certificate has not been revoked or canceled.

SECTION 00430

BID BOND

KNOW ALL MEN BY THESE PRESENTS; That we _____,
of _____ as Principal, and _____, of _____,
as Surety, are held and firmly bound unto the City of
Marshalltown hereinafter referred to as the Obligee, in the penal sum of
_____, (\$_____) for which payment said Principal and Surety bind themselves, their heirs, executors, administrators, successors, and assigns jointly and severally, firmly by these presents.

WHEREAS, the Principal is herewith submitting their sealed proposal for constructing the Flow Equalization Improvements as described in Section 00110 Notice to Bidders.

Date of Letting: October 6, 2026

NOW THEREFORE, if the said proposal bid by said Principal is accepted, and the Principal shall enter into a contract with the Obligee in accordance with the terms of such bid, and shall post the bonds required by the contract documents in Article 6 of the Supplementary Conditions with good and sufficient surety for the faithful performance of such contract, for the prompt payment for all labor and material furnished in the prosecution thereof and for the maintenance of the improvements in good repair and specified working conditions for four (4) year(s) after substantial completion of the project by the Obligee, then this obligation shall become null and void, or in the event of the failure of the Principal to enter such contract and give such Performance Bond, Payment Bond, and Warranty Bond, the Principal and Surety on these bonds hereby agree to pay to the Obligee the full amount of this Bid Bond, together with court costs, attorney's fees, and any other expense of recovery.

IN WITNESS WHEREOF, the Principal and Surety have caused these presents to be signed this day of _____, 2026.

Principal

By _____

Contractor's Signature

Surety

END OF SECTION 00430

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SECTION 00520 AGREEMENT

THIS AGREEMENT is dated as of the _____ day of _____, 2026, by and between the City of Marshalltown (hereafter called Owner) and -- (hereafter called Contractor).

Owner and Contractor, in consideration of the mutual covenants hereinafter set forth, agree as follows:

ARTICLE 1. WORK.

Contractor shall complete all Work as specified or indicated under the Contract Documents entitled Flow Equalization Improvements generally described as follows:

This project includes the installation of a bolted steel tank flow equalization basin (FEB) and piping to equalize flow pumped from the nearby JBS processing plant and a future industrial client. Modulating valves will be replaced in the flow control structures upstream and downstream of the proposed FEB tank.

ARTICLE 2. CONTRACT TIMES.

Work shall commence upon written Notice to Proceed issued by Owner. Notice to Proceed is anticipated to be issued within 7 days of the Effective Date of the Agreement. All portions of the Work shall be substantially complete on or before August 31, 2027 and fully complete on or before September 30, 2027, subject to any extension of time, which may be granted by the Owner.

ARTICLE 3. LIQUIDATED DAMAGES.

Owner and the Contractor recognize that time is of the essence of this Agreement and that the Owner will suffer financial and other losses if the Work is not completed within the time specified in Article 2 herein, plus any extensions thereof allowed in accordance with Article 15 of the General Conditions. The parties also recognize the delays, expense, and difficulties involved in proving in a legal proceeding the actual loss suffered by the Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, the Owner and the Contractor agree that as liquidated damages for delay (but not as a penalty) the Contractor shall pay the Owner \$1,000 dollars per calendar day after the required Substantial Completion date until Substantial Completion is achieved, and \$1,000 dollars per calendar day after the required Final Completion date until Final Completion is achieved. Liquidated damaged for the Substantial Completion and Final Completion shall not be additive.

ARTICLE 4. CONTRACT PRICE.

Owner shall pay Contractor for completion of the Work pursuant to the Contractor's Bid Form and in accordance with the Contract Documents in current funds as follows: -- dollars, (\$--).

ARTICLE 5. PAYMENT PROCEDURES.

Contractor shall submit Applications for Payment in accordance with Article 15 of the General Conditions. Applications for Payment will be processed by Engineer as provided in the General Conditions.

ARTICLE 6. ASSIGNMENT.

No assignment by a party hereto of any rights under or interests in the Contract Documents will be binding on another party hereto without the written consent of the party sought to be bound; and specifically but without limitation monies that may become due and monies that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

Owner and Contractor each binds itself, its partners, successors, assigns and legal representatives to the other party hereto, its partners, successors, assigns and legal representatives in respect of all covenants, agreements and obligations contained in the Contract Documents.

ARTICLE 7. CONTRACT DOCUMENTS.

The Contract Documents, which comprise the entire contract between Owner and Contractor concerning the Work, consist of this Agreement; Performance and Warranty Bond and Payment Bond; Notice to Proceed; General Conditions; Supplementary Conditions; and Drawings and Technical Specifications, Contractor's Bid Form, and all written amendments and other documents amending, modifying or supplementing the Contract Documents pursuant to paragraph 3.04 of the General Conditions, which may be fully executed after the effective date of the Agreement, for the said project.

IN WITNESS WHEREOF, Owner and contractor have caused this Agreement to be executed the day and year first above written.

City of Marshalltown

By:

Mike Ladehoff, Mayor

By:

Contractor's Authorized Agent, Contractor's
Authorized Agent Title

HR Green, Inc.
Project No. 2503420

Flow Equalization Improvements
Marshalltown, IA

CORPORATE SEAL

Attest:

Alicia Hunter, City Clerk

Attest:

Contractor's Attest, Contractor's Attest
Title

Address for giving notices

City of Marshalltown
24 N. Center St.
Marshalltown, IA 50158

Address for giving notices

--
--
--

END OF SECTION 00520

AGREEMENT

00520 - 3

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**SECTION 00550
NOTICE TO PROCEED**

TO: ==
 ==
 ==

DATE: _____

Flow Equalization Improvements
City of Marshalltown
24 N. Center St.
Marshalltown, IA 50158

You are hereby notified to commence WORK in accordance with the Agreement dated _____, 2026, on or after _____. The date of completion of all WORK is September 30, 2027.

City of Marshalltown

By _____

Title _____

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE TO PROCEED is hereby acknowledged by:

==, this the _____ day of _____, 2026

By _____
CAuthorizedSignature, CAuthorizedTitle

END OF SECTION 00550

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PERFORMANCE BOND

Contractor Name: Address <i>(principal place of business)</i> :	Surety Name: Address <i>(principal place of business)</i> :
Owner Name: <u>[City of Marshalltown]</u> Mailing address <i>(principal place of business)</i> : <u>[24 N. Center St., Marshalltown, IA 50158]</u>	Contract Description <i>(name and location)</i> : <u>[Flow Equalization Improvements],</u> <u>[Marshalltown, IA]</u> Contract Price: Effective Date of Contract:
Bond Bond Amount: Date of Bond: <i>(Date of Bond cannot be earlier than Effective Date of Contract)</i> Modifications to this Bond form: ☒ None ☐ See Paragraph 16	
Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth in this Performance Bond, do each cause this Performance Bond to be duly executed by an authorized officer, agent, or representative.	
Contractor as Principal	Surety
<i>(Full formal name of Contractor)</i>	<i>(Full formal name of Surety) (corporate seal)</i>
By: _____ <i>(Signature)</i>	By: _____ <i>(Signature)(Attach Power of Attorney)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
Attest: _____ <i>(Signature)</i>	Attest: _____ <i>(Signature)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
<i>Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party is considered plural where applicable.</i>	

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.
2. If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Paragraph 3.
3. If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond will arise after:
 - 3.1. The Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice may indicate whether the Owner is requesting a conference among the Owner, Contractor, and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Paragraph 3.1 will be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor, and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement does not waive the Owner's right, if any, subsequently to declare a Contractor Default;
 - 3.2. The Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and
 - 3.3. The Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.
4. Failure on the part of the Owner to comply with the notice requirement in Paragraph 3.1 does not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.
5. When the Owner has satisfied the conditions of Paragraph 3, the Surety shall promptly and at the Surety's expense take one of the following actions:
 - 5.1. Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;
 - 5.2. Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;
 - 5.3. Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owners concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the

amount of damages as described in Paragraph 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or

- 5.4. Waive its right to perform and complete, arrange for completion, or obtain a new contractor, and with reasonable promptness under the circumstances:
 - 5.4.1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or
 - 5.4.2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.
6. If the Surety does not proceed as provided in Paragraph 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Paragraph 5.4, and the Owner refuses the payment, or the Surety has denied liability, in whole or in part, without further notice, the Owner shall be entitled to enforce any remedy available to the Owner.
7. If the Surety elects to act under Paragraph 5.1, 5.2, or 5.3, then the responsibilities of the Surety to the Owner will not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety will not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication for:
 - 7.1. the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;
 - 7.2. additional legal, design professional, and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Paragraph 5; and
 - 7.3. liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.
8. If the Surety elects to act under Paragraph 5.1, 5.3, or 5.4, the Surety's liability is limited to the amount of this Bond.
9. The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price will not be reduced or set off on account of any such unrelated obligations. No right of action will accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors, and assigns.
10. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.
11. Any proceeding, legal or equitable, under this Bond must be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and must be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the

minimum periods of limitations available to sureties as a defense in the jurisdiction of the suit will be applicable.

12. Notice to the Surety, the Owner, or the Contractor must be mailed or delivered to the address shown on the page on which their signature appears.
13. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement will be deemed deleted therefrom and provisions conforming to such statutory or other legal requirement will be deemed incorporated herein. When so furnished, the intent is that this Bond will be construed as a statutory bond and not as a common law bond.
14. Definitions
 - 14.1. *Balance of the Contract Price*—The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made including allowance for the Contractor for any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.
 - 14.2. *Construction Contract*—The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.
 - 14.3. *Contractor Default*—Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.
 - 14.4. *Owner Default*—Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.
 - 14.5. *Contract Documents*—All the documents that comprise the agreement between the Owner and Contractor.
15. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond will be deemed to be Subcontractor and the term Owner will be deemed to be Contractor.
16. Modifications to this Bond are as follows: None

WARRANTY BOND

Contractor Name: Address (principal place of business):	Surety Name: Address (principal place of business):
Owner Name: [City of Marshalltown] Address (principal place of business): 24 N. Center St., Marshalltown, IA 50158]	Construction Contract Description (name and location): [Flow Equalization Improvements], [Marshalltown, IA] Contract Price: Effective Date of Contract: Contract's Date of Substantial Completion:
Bond Bond Amount: _____ Bond Period: Commencing 364 days after Date of Bond: _____ Substantial Completion of the Work under the Construction Contract, and continuing until [four (4)] years after such Substantial Completion. Modifications to this Bond form: ☒ None ☐ See Paragraph 9	
Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth herein, do each cause this Warranty Bond to be duly executed by an authorized officer, agent, or representative.	
Contractor as Principal	Surety
By: _____ (Full formal name of Contractor) (Signature)	By: _____ (Full formal name of Surety) (corporate seal) (Signature) (Attach Power of Attorney)
Name: _____ (Printed or typed)	Name: _____ (Printed or typed)
Title: _____	Title: _____
Attest: _____ (Signature)	Attest: _____ (Signature)
Name: _____ (Printed or typed)	Name: _____ (Printed or typed)
Title: _____	Title: _____
Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party is considered plural where applicable.	

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner for the performance of the Construction Contract's Correction Period Obligations. The Construction Contract is incorporated herein by reference.
2. If the Contractor performs the Correction Period Obligations, the Surety and the Contractor shall have no obligation under this Warranty Bond.
3. If Owner gives written notice to Contractor and Surety during the Bond Period of Contractor's obligation under the Correction Period Obligations, and Contractor does not fulfill such obligation, then Surety shall be responsible for fulfillment of such Correction Period Obligations. Surety shall either fulfill the Correction Period Obligations itself, through its agents or contractors, or, in the alternative, Surety may waive the right to fulfill the Correction Period Obligations itself, and reimburse the Owner for all resulting costs incurred by Owner in performing Contractor's Correction Period Obligations, including but not limited to correction, removal, replacement, and repair costs.
4. The Surety's liability is limited to the amount of this Warranty Bond. Renewal or continuation of the Warranty Bond will not modify such amount, unless expressly agreed to by Surety in writing.
5. The Surety shall have no liability under this Warranty Bond for obligations of the Contractor that are unrelated to the Construction Contract. No right of action will accrue on this Warranty Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors, and assigns.
6. Any proceeding, legal or equitable, under this Warranty Bond may be instituted in any court of competent jurisdiction in the location in which the Work or part of the Work is located and must be instituted within two years after the Surety refuses or fails to perform its obligations under this Warranty Bond.
7. Written notice to the Surety, the Owner, or the Contractor must be mailed or delivered to the address shown in this Warranty Bond.
8. Definitions
 - 8.1. *Construction Contract*—The agreement between the Owner and Contractor identified on the cover page of this Warranty Bond, including all Contract Documents and changes made to the agreement and the Contract Documents.
 - 8.2. *Contract Documents*—All the documents that comprise the agreement between the Owner and Contractor.
 - 8.3. *Correction Period Obligations*—The duties, responsibilities, commitments, and obligations of the Contractor with respect to correction or replacement of defective Work, as set forth in the Construction Contract's Correction Period clause, EJCDC® C-700, Standard General Conditions of the Construction Contract (2018), Paragraph 15.08, as duly modified.
 - 8.4. *Substantial Completion*—As defined in the Construction Contract.
 - 8.5. *Work*—As defined in the Construction Contract.
9. Modifications to this Bond are as follows: **None**

PAYMENT BOND

Contractor Name: Address (<i>principal place of business</i>):	Surety Name: Address (<i>principal place of business</i>):
Owner Name: <u>[City of Marshalltown]</u> Mailing address (<i>principal place of business</i>): <u>24 N. Center St., Marshalltown, IA 50158</u>	Contract Description (<i>name and location</i>): [Flow Equalization Improvements], [Marshalltown, IA] Contract Price: Effective Date of Contract:
Bond Bond Amount: Date of Bond: (<i>Date of Bond cannot be earlier than Effective Date of Contract</i>) Modifications to this Bond form: ☒ None ☐ See Paragraph 18	
Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth in this Payment Bond, do each cause this Payment Bond to be duly executed by an authorized officer, agent, or representative.	
Contractor as Principal	Surety
(<i>Full formal name of Contractor</i>)	(<i>Full formal name of Surety</i>) (<i>corporate seal</i>)
By: _____ (<i>Signature</i>)	By: _____ (<i>Signature</i>)(<i>Attach Power of Attorney</i>)
Name: _____ (<i>Printed or typed</i>)	Name: _____ (<i>Printed or typed</i>)
Title: _____	Title: _____
Attest: _____ (<i>Signature</i>)	Attest: _____ (<i>Signature</i>)
Name: _____ (<i>Printed or typed</i>)	Name: _____ (<i>Printed or typed</i>)
Title: _____	Title: _____
Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party is considered plural where applicable.	

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner to pay for labor, materials, and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.
2. If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies, and holds harmless the Owner from claims, demands, liens, or suits by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.
3. If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond will arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Paragraph 13) of claims, demands, liens, or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, and tendered defense of such claims, demands, liens, or suits to the Contractor and the Surety.
4. When the Owner has satisfied the conditions in Paragraph 3, the Surety shall promptly and at the Surety's expense defend, indemnify, and hold harmless the Owner against a duly tendered claim, demand, lien, or suit.
5. The Surety's obligations to a Claimant under this Bond will arise after the following:
 - 5.1. Claimants who do not have a direct contract with the Contractor
 - 5.1.1. have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and
 - 5.1.2. have sent a Claim to the Surety (at the address described in Paragraph 13).
 - 5.2. Claimants who are employed by or have a direct contract with the Contractor have sent a Claim to the Surety (at the address described in Paragraph 13).
6. If a notice of non-payment required by Paragraph 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Paragraph 5.1.1.
7. When a Claimant has satisfied the conditions of Paragraph 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:
 - 7.1. Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and
 - 7.2. Pay or arrange for payment of any undisputed amounts.
 - 7.3. The Surety's failure to discharge its obligations under Paragraph 7.1 or 7.2 will not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim,

except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Paragraph 7.1 or 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.

8. The Surety's total obligation will not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Paragraph 7.3, and the amount of this Bond will be credited for any payments made in good faith by the Surety.
9. Amounts owed by the Owner to the Contractor under the Construction Contract will be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfying obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.
10. The Surety shall not be liable to the Owner, Claimants, or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to or give notice on behalf of Claimants, or otherwise have any obligations to Claimants under this Bond.
11. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.
12. No suit or action will be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Paragraph 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit will be applicable.
13. Notice and Claims to the Surety, the Owner, or the Contractor must be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, will be sufficient compliance as of the date received.
14. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement will be deemed deleted here from and provisions conforming to such statutory or other legal requirement will be deemed incorporated herein. When so furnished, the intent is that this Bond will be construed as a statutory bond and not as a common law bond.
15. Upon requests by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.
16. Definitions

16.1. *Claim*—A written statement by the Claimant including at a minimum:

EJCDC® C-615, Payment Bond.

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Page 3 of 4

- 16.1.1. The name of the Claimant;
- 16.1.2. The name of the person for whom the labor was done, or materials or equipment furnished;
- 16.1.3. A copy of the agreement or purchase order pursuant to which labor, materials, or equipment was furnished for use in the performance of the Construction Contract;
- 16.1.4. A brief description of the labor, materials, or equipment furnished;
- 16.1.5. The date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
- 16.1.6. The total amount earned by the Claimant for labor, materials, or equipment furnished as of the date of the Claim;
- 16.1.7. The total amount of previous payments received by the Claimant; and
- 16.1.8. The total amount due and unpaid to the Claimant for labor, materials, or equipment furnished as of the date of the Claim.
- 16.2. *Claimant*—An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials, or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond is to include without limitation in the terms of "labor, materials, or equipment" that part of the water, gas, power, light, heat, oil, gasoline, telephone service, or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials, or equipment were furnished.
- 16.3. *Construction Contract*—The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.
- 16.4. *Owner Default*—Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.
- 16.5. *Contract Documents*—All the documents that comprise the agreement between the Owner and Contractor.
- 17. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond will be deemed to be Subcontractor and the term Owner will be deemed to be Contractor.
- 18. Modifications to this Bond are as follows: None

SECTION 00700
STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

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This document has important legal consequences; consultation with an attorney is encouraged with respect to its use or modification. This document should be adapted to the particular circumstances of the contemplated Project and the controlling Laws and Regulations.

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared By



Endorsed By



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National Society of Professional Engineers
1420 King Street, Alexandria, VA 22314-2794
(703) 684-2882
www.nspe.org

American Council of Engineering Companies
1015 15th Street N.W., Washington, DC 20005
(202) 347-7474
www.acec.org

American Society of Civil Engineers
1801 Alexander Bell Drive, Reston, VA 20191-4400
(800) 548-2723
www.asce.org

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STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

ARTICLE 1—DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

- A. Wherever used in the Bidding Requirements or Contract Documents, a term printed with initial capital letters, including the term's singular and plural forms, will have the meaning indicated in the definitions below. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.
1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.
 2. *Agreement*—The written instrument, executed by Owner and Contractor, that sets forth the Contract Price and Contract Times, identifies the parties and the Engineer, and designates the specific items that are Contract Documents.
 3. *Application for Payment*—The document prepared by Contractor, in a form acceptable to Engineer, to request progress or final payments, and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
 4. *Bid*—The offer of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
 5. *Bidder*—An individual or entity that submits a Bid to Owner.
 6. *Bidding Documents*—The Bidding Requirements, the proposed Contract Documents, and all Addenda.
 7. *Bidding Requirements*—The Advertisement or invitation to bid, Instructions to Bidders, Bid Bond or other Bid security, if any, the Bid Form, and the Bid with any attachments.
 8. *Change Order*—A document which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, or other revision to the Contract, issued on or after the Effective Date of the Contract.
 9. *Change Proposal*—A written request by Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment in Contract Price or Contract Times; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; challenging a set-off against payments due; or seeking other relief with respect to the terms of the Contract.
 10. *Claim*
 - a. A demand or assertion by Owner directly to Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment of Contract Price or Contract Times; contesting an initial decision by Engineer concerning the

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requirements of the Contract Documents or the acceptability of Work under the Contract Documents; contesting Engineer's decision regarding a Change Proposal; seeking resolution of a contractual issue that Engineer has declined to address; or seeking other relief with respect to the terms of the Contract.

- b. A demand or assertion by Contractor directly to Owner, duly submitted in compliance with the procedural requirements set forth herein, contesting Engineer's decision regarding a Change Proposal, or seeking resolution of a contractual issue that Engineer has declined to address.
 - c. A demand or assertion by Owner or Contractor, duly submitted in compliance with the procedural requirements set forth herein, made pursuant to Paragraph 12.01.A.4, concerning disputes arising after Engineer has issued a recommendation of final payment.
 - d. A demand for money or services by a third party is not a Claim.
- 11. *Constituent of Concern*—Asbestos, petroleum, radioactive materials, polychlorinated biphenyls (PCBs), lead-based paint (as defined by the HUD/EPA standard), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to Laws and Regulations regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.
 - 12. *Contract*—The entire and integrated written contract between Owner and Contractor concerning the Work.
 - 13. *Contract Documents*—Those items so designated in the Agreement, and which together comprise the Contract.
 - 14. *Contract Price*—The money that Owner has agreed to pay Contractor for completion of the Work in accordance with the Contract Documents.
 - 15. *Contract Times*—The number of days or the dates by which Contractor shall: (a) achieve Milestones, if any; (b) achieve Substantial Completion; and (c) complete the Work.
 - 16. *Contractor*—The individual or entity with which Owner has contracted for performance of the Work.
 - 17. *Cost of the Work*—See Paragraph 13.01 for definition.
 - 18. *Drawings*—The part of the Contract that graphically shows the scope, extent, and character of the Work to be performed by Contractor.
 - 19. *Effective Date of the Contract*—The date, indicated in the Agreement, on which the Contract becomes effective.
 - 20. *Electronic Document*—Any Project-related correspondence, attachments to correspondence, data, documents, drawings, information, or graphics, including but not limited to Shop Drawings and other Submittals, that are in an electronic or digital format.
 - 21. *Electronic Means*—Electronic mail (email), upload/download from a secure Project website, or other communications methods that allow: (a) the transmission or communication of Electronic Documents; (b) the documentation of transmissions, including sending and receipt; (c) printing of the transmitted Electronic Document by the

recipient; (d) the storage and archiving of the Electronic Document by sender and recipient; and (e) the use by recipient of the Electronic Document for purposes permitted by this Contract. Electronic Means does not include the use of text messaging, or of Facebook, Twitter, Instagram, or similar social media services for transmission of Electronic Documents.

22. *Engineer*—The individual or entity named as such in the Agreement.
23. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but does not change the Contract Price or the Contract Times.
24. *Hazardous Environmental Condition*—The presence at the Site of Constituents of Concern in such quantities or circumstances that may present a danger to persons or property exposed thereto.
 - a. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated into the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, is not a Hazardous Environmental Condition.
 - b. The presence of Constituents of Concern that are to be removed or remediated as part of the Work is not a Hazardous Environmental Condition.
 - c. The presence of Constituents of Concern as part of the routine, anticipated, and obvious working conditions at the Site, is not a Hazardous Environmental Condition.
25. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and binding decrees, resolutions, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
26. *Liens*—Charges, security interests, or encumbrances upon Contract-related funds, real property, or personal property.
27. *Milestone*—A principal event in the performance of the Work that the Contract requires Contractor to achieve by an intermediate completion date, or by a time prior to Substantial Completion of all the Work.
28. *Notice of Award*—The written notice by Owner to a Bidder of Owner's acceptance of the Bid.
29. *Notice to Proceed*—A written notice by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work.
30. *Owner*—The individual or entity with which Contractor has contracted regarding the Work, and which has agreed to pay Contractor for the performance of the Work, pursuant to the terms of the Contract.
31. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising Contractor's plan to accomplish the Work within the Contract Times.
32. *Project*—The total undertaking to be accomplished for Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the Work to be performed under the Contract Documents is a part.

33. *Resident Project Representative*—The authorized representative of Engineer assigned to assist Engineer at the Site. As used herein, the term Resident Project Representative (RPR) includes any assistants or field staff of Resident Project Representative.
34. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and that establish the standards by which such portion of the Work will be judged.
35. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements for Engineer's review of the submittals.
36. *Schedule of Values*—A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.
37. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information that are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work. Shop Drawings, whether approved or not, are not Drawings and are not Contract Documents.
38. *Site*—Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements, and such other lands or areas furnished by Owner which are designated for the use of Contractor.
39. *Specifications*—The part of the Contract that consists of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable to the Work.
40. *Subcontractor*—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work.
41. *Submittal*—A written or graphic document, prepared by or for Contractor, which the Contract Documents require Contractor to submit to Engineer, or that is indicated as a Submittal in the Schedule of Submittals accepted by Engineer. Submittals may include Shop Drawings and Samples; schedules; product data; Owner-delegated designs; sustainable design information; information on special procedures; testing plans; results of tests and evaluations, source quality-control testing and inspections, and field or Site quality-control testing and inspections; warranties and certifications; Suppliers' instructions and reports; records of delivery of spare parts and tools; operations and maintenance data; Project photographic documentation; record documents; and other such documents required by the Contract Documents. Submittals, whether or not approved or accepted by Engineer, are not Contract Documents. Change Proposals, Change Orders, Claims, notices, Applications for Payment, and requests for interpretation or clarification are not Submittals.
42. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms "substantially complete" and "substantially completed" as applied to all or part of the Work refer to Substantial Completion of such Work.

43. *Successful Bidder*—The Bidder to which the Owner makes an award of contract.
44. *Supplementary Conditions*—The part of the Contract that amends or supplements these General Conditions.
45. *Supplier*—A manufacturer, fabricator, supplier, distributor, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or a Subcontractor.
46. *Technical Data*
- a. Those items expressly identified as Technical Data in the Supplementary Conditions, with respect to either (1) existing subsurface conditions at or adjacent to the Site, or existing physical conditions at or adjacent to the Site including existing surface or subsurface structures (except Underground Facilities) or (2) Hazardous Environmental Conditions at the Site.
 - b. If no such express identifications of Technical Data have been made with respect to conditions at the Site, then Technical Data is defined, with respect to conditions at the Site under Paragraphs 5.03, 5.04, and 5.06, as the data contained in boring logs, recorded measurements of subsurface water levels, assessments of the condition of subsurface facilities, laboratory test results, and other factual, objective information regarding conditions at the Site that are set forth in any geotechnical, environmental, or other Site or facilities conditions report prepared for the Project and made available to Contractor.
 - c. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data, and instead Underground Facilities are shown or indicated on the Drawings.
47. *Underground Facilities*—All active or not-in-service underground lines, pipelines, conduits, ducts, encasements, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or systems at the Site, including but not limited to those facilities or systems that produce, transmit, distribute, or convey telephone or other communications, cable television, fiber optic transmissions, power, electricity, light, heat, gases, oil, crude oil products, liquid petroleum products, water, steam, waste, wastewater, storm water, other liquids or chemicals, or traffic or other control systems. An abandoned facility or system is not an Underground Facility.
48. *Unit Price Work*—Work to be paid for on the basis of unit prices.
49. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction; furnishing, installing, and incorporating all materials and equipment into such construction; and may include related services such as testing, start-up, and commissioning, all as required by the Contract Documents.
50. *Work Change Directive*—A written directive to Contractor issued on or after the Effective Date of the Contract, signed by Owner and recommended by Engineer, ordering an addition, deletion, or revision in the Work.

1.02 Terminology

- A. The words and terms discussed in Paragraphs 1.02.B, C, D, and E are not defined terms that require initial capital letters, but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.
- B. *Intent of Certain Terms or Adjectives:* The Contract Documents include the terms “as allowed,” “as approved,” “as ordered,” “as directed” or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Article 10 or any other provision of the Contract Documents.
- C. *Day:* The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.
- D. *Defective:* The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:
 - 1. does not conform to the Contract Documents;
 - 2. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or
 - 3. has been damaged prior to Engineer’s recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 15.03 or Paragraph 15.04).
- E. *Furnish, Install, Perform, Provide*
 - 1. The word “furnish,” when used in connection with services, materials, or equipment, means to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.
 - 2. The word “install,” when used in connection with services, materials, or equipment, means to put into use or place in final position said services, materials, or equipment complete and ready for intended use.
 - 3. The words “perform” or “provide,” when used in connection with services, materials, or equipment, means to furnish and install said services, materials, or equipment complete and ready for intended use.
 - 4. If the Contract Documents establish an obligation of Contractor with respect to specific services, materials, or equipment, but do not expressly use any of the four words “furnish,” “install,” “perform,” or “provide,” then Contractor shall furnish and install said services, materials, or equipment complete and ready for intended use.

- F. *Contract Price or Contract Times*: References to a change in “Contract Price or Contract Times” or “Contract Times or Contract Price” or similar, indicate that such change applies to (1) Contract Price, (2) Contract Times, or (3) both Contract Price and Contract Times, as warranted, even if the term “or both” is not expressed.
- G. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

ARTICLE 2—PRELIMINARY MATTERS

2.01 *Delivery of Performance and Payment Bonds; Evidence of Insurance*

- A. *Performance and Payment Bonds*: When Contractor delivers the signed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner the performance bond and payment bond (if the Contract requires Contractor to furnish such bonds).
- B. *Evidence of Contractor’s Insurance*: When Contractor delivers the signed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner, with copies to each additional insured (as identified in the Contract), the certificates, endorsements, and other evidence of insurance required to be provided by Contractor in accordance with Article 6, except to the extent the Supplementary Conditions expressly establish other dates for delivery of specific insurance policies.
- C. *Evidence of Owner’s Insurance*: After receipt of the signed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor, with copies to each additional insured (as identified in the Contract), the certificates and other evidence of insurance required to be provided by Owner under Article 6.

2.02 *Copies of Documents*

- A. Owner shall furnish to Contractor four printed copies of the Contract (including one fully signed counterpart of the Agreement), and one copy in electronic portable document format (PDF). Additional printed copies will be furnished upon request at the cost of reproduction.
- B. Owner shall maintain and safeguard at least one original printed record version of the Contract, including Drawings and Specifications signed and sealed by Engineer and other design professionals. Owner shall make such original printed record version of the Contract available to Contractor for review. Owner may delegate the responsibilities under this provision to Engineer.

2.03 *Before Starting Construction*

- A. *Preliminary Schedules*: Within 10 days after the Effective Date of the Contract (or as otherwise required by the Contract Documents), Contractor shall submit to Engineer for timely review:
 - 1. a preliminary Progress Schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract;
 - 2. a preliminary Schedule of Submittals; and
 - 3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work

into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.04 *Preconstruction Conference; Designation of Authorized Representatives*

- A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work, and to discuss the schedules referred to in Paragraph 2.03.A, procedures for handling Shop Drawings, Samples, and other Submittals, processing Applications for Payment, electronic or digital transmittals, and maintaining required records.
- B. At this conference Owner and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit and receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

2.05 *Acceptance of Schedules*

- A. At least 10 days before submission of the first Application for Payment a conference, attended by Contractor, Engineer, and others as appropriate, will be held to review the schedules submitted in accordance with Paragraph 2.03.A. No progress payment will be made to Contractor until acceptable schedules are submitted to Engineer.
 - 1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work, nor interfere with or relieve Contractor from Contractor's full responsibility therefor.
 - 2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.
 - 3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to the component parts of the Work.
 - 4. If a schedule is not acceptable, Contractor will have an additional 10 days to revise and resubmit the schedule.

2.06 *Electronic Transmittals*

- A. Except as otherwise stated elsewhere in the Contract, the Owner, Engineer, and Contractor may send, and shall accept, Electronic Documents transmitted by Electronic Means.
- B. If the Contract does not establish protocols for Electronic Means, then Owner, Engineer, and Contractor shall jointly develop such protocols.
- C. Subject to any governing protocols for Electronic Means, when transmitting Electronic Documents by Electronic Means, the transmitting party makes no representations as to long-term compatibility, usability, or readability of the Electronic Documents resulting from the recipient's use of software application packages, operating systems, or computer hardware differing from those used in the drafting or transmittal of the Electronic Documents.

ARTICLE 3—CONTRACT DOCUMENTS: INTENT, REQUIREMENTS, REUSE

3.01 *Intent*

- A. The Contract Documents are complementary; what is required by one Contract Document is as binding as if required by all.
- B. It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents.
- C. Unless otherwise stated in the Contract Documents, if there is a discrepancy between the electronic versions of the Contract Documents (including any printed copies derived from such electronic versions) and the printed record version, the printed record version will govern.
- D. The Contract supersedes prior negotiations, representations, and agreements, whether written or oral.
- E. Engineer will issue clarifications and interpretations of the Contract Documents as provided herein.
- F. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation will be deemed stricken, and all remaining provisions will continue to be valid and binding upon Owner and Contractor, which agree that the Contract Documents will be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.
- G. Nothing in the Contract Documents creates:
 - 1. any contractual relationship between Owner or Engineer and any Subcontractor, Supplier, or other individual or entity performing or furnishing any of the Work, for the benefit of such Subcontractor, Supplier, or other individual or entity; or
 - 2. any obligation on the part of Owner or Engineer to pay or to see to the payment of any money due any such Subcontractor, Supplier, or other individual or entity, except as may otherwise be required by Laws and Regulations.

3.02 *Reference Standards*

- A. *Standards Specifications, Codes, Laws and Regulations*
 - 1. Reference in the Contract Documents to standard specifications, manuals, reference standards, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, means the standard specification, manual, reference standard, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Contract if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.
 - 2. No provision of any such standard specification, manual, reference standard, or code, and no instruction of a Supplier, will be effective to change the duties or responsibilities of Owner, Contractor, or Engineer from those set forth in the part of the Contract Documents prepared by or for Engineer. No such provision or instruction shall be effective to assign to Owner or Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility

inconsistent with the provisions of the part of the Contract Documents prepared by or for Engineer.

3.03 *Reporting and Resolving Discrepancies*

A. *Reporting Discrepancies*

1. *Contractor's Verification of Figures and Field Measurements:* Before undertaking each part of the Work, Contractor shall carefully study the Contract Documents, and check and verify pertinent figures and dimensions therein, particularly with respect to applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy that Contractor discovers, or has actual knowledge of, and shall not proceed with any Work affected thereby until the conflict, error, ambiguity, or discrepancy is resolved by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract issued pursuant to Paragraph 11.01.
2. *Contractor's Review of Contract Documents:* If, before or during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation, (b) actual field conditions, (c) any standard specification, manual, reference standard, or code, or (d) any instruction of any Supplier, then Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 7.15) until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract issued pursuant to Paragraph 11.01.
3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor had actual knowledge thereof.

B. *Resolving Discrepancies*

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the part of the Contract Documents prepared by or for Engineer take precedence in resolving any conflict, error, ambiguity, or discrepancy between such provisions of the Contract Documents and:
 - a. the provisions of any standard specification, manual, reference standard, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference as a Contract Document); or
 - b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.04 *Requirements of the Contract Documents*

- A. During the performance of the Work and until final payment, Contractor and Owner shall submit to the Engineer in writing all matters in question concerning the requirements of the Contract Documents (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Work under the Contract Documents, as soon as possible after such matters arise. Engineer will be the initial interpreter of the requirements of the Contract Documents, and judge of the acceptability of the Work.

- B. Engineer will, with reasonable promptness, render a written clarification, interpretation, or decision on the issue submitted, or initiate an amendment or supplement to the Contract Documents. Engineer's written clarification, interpretation, or decision will be final and binding on Contractor, unless it appeals by submitting a Change Proposal, and on Owner, unless it appeals by filing a Claim.
- C. If a submitted matter in question concerns terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work under the Contract Documents, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly notify Owner and Contractor in writing that Engineer is unable to provide a decision or interpretation. If Owner and Contractor are unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in Article 12.

3.05 *Reuse of Documents*

- A. Contractor and its Subcontractors and Suppliers shall not:
 - 1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media versions, or reuse any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer; or
 - 2. have or acquire any title or ownership rights in any other Contract Documents, reuse any such Contract Documents for any purpose without Owner's express written consent, or violate any copyrights pertaining to such Contract Documents.
- B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein precludes Contractor from retaining copies of the Contract Documents for record purposes.

ARTICLE 4—COMMENCEMENT AND PROGRESS OF THE WORK

4.01 *Commencement of Contract Times; Notice to Proceed*

- A. The Contract Times will commence to run on the 30th day after the Effective Date of the Contract or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Contract. In no event will the Contract Times commence to run later than the 60th day after the day of Bid opening or the 30th day after the Effective Date of the Contract, whichever date is earlier.

4.02 *Starting the Work*

- A. Contractor shall start to perform the Work on the date when the Contract Times commence to run. No Work may be done at the Site prior to such date.

4.03 *Reference Points*

- A. Owner shall provide engineering surveys to establish reference points for construction which in Engineer's judgment are necessary to enable Contractor to proceed with the Work. Contractor shall be responsible for laying out the Work, shall protect and preserve the

established reference points and property monuments, and shall make no changes or relocations without the prior written approval of Owner. Contractor shall report to Engineer whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

4.04 *Progress Schedule*

- A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.05 as it may be adjusted from time to time as provided below.
 - 1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.05) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times.
 - 2. Proposed adjustments in the Progress Schedule that will change the Contract Times must be submitted in accordance with the requirements of Article 11.
- B. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work will be delayed or postponed pending resolution of any disputes or disagreements, or during any appeal process, except as permitted by Paragraph 16.04, or as Owner and Contractor may otherwise agree in writing.

4.05 *Delays in Contractor's Progress*

- A. If Owner, Engineer, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times.
- B. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delay, disruption, or interference caused by or within the control of Contractor. Delay, disruption, and interference attributable to and within the control of a Subcontractor or Supplier shall be deemed to be within the control of Contractor.
- C. If Contractor's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Owner, Contractor, and those for which they are responsible, then Contractor shall be entitled to an equitable adjustment in Contract Times. Such an adjustment will be Contractor's sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption, or interference that may give rise to an adjustment in Contract Times under this paragraph include but are not limited to the following:
 - 1. Severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;
 - 2. Abnormal weather conditions;
 - 3. Acts or failures to act of third-party utility owners or other third-party entities (other than those third-party utility owners or other third-party entities performing other work at or adjacent to the Site as arranged by or under contract with Owner, as contemplated in Article 8); and
 - 4. Acts of war or terrorism.

- D. Contractor's entitlement to an adjustment of Contract Times or Contract Price is limited as follows:
1. Contractor's entitlement to an adjustment of the Contract Times is conditioned on the delay, disruption, or interference adversely affecting an activity on the critical path to completion of the Work, as of the time of the delay, disruption, or interference.
 2. Contractor shall not be entitled to an adjustment in Contract Price for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Contractor. Such a concurrent delay by Contractor shall not preclude an adjustment of Contract Times to which Contractor is otherwise entitled.
 3. Adjustments of Contract Times or Contract Price are subject to the provisions of Article 11.
- E. Each Contractor request or Change Proposal seeking an increase in Contract Times or Contract Price must be supplemented by supporting data that sets forth in detail the following:
1. The circumstances that form the basis for the requested adjustment;
 2. The date upon which each cause of delay, disruption, or interference began to affect the progress of the Work;
 3. The date upon which each cause of delay, disruption, or interference ceased to affect the progress of the Work;
 4. The number of days' increase in Contract Times claimed as a consequence of each such cause of delay, disruption, or interference; and
 5. The impact on Contract Price, in accordance with the provisions of Paragraph 11.07.
- Contractor shall also furnish such additional supporting documentation as Owner or Engineer may require including, where appropriate, a revised progress schedule indicating all the activities affected by the delay, disruption, or interference, and an explanation of the effect of the delay, disruption, or interference on the critical path to completion of the Work.
- F. Delays, disruption, and interference to the performance or progress of the Work resulting from the existence of a differing subsurface or physical condition, an Underground Facility that was not shown or indicated by the Contract Documents, or not shown or indicated with reasonable accuracy, and those resulting from Hazardous Environmental Conditions, are governed by Article 5, together with the provisions of Paragraphs 4.05.D and 4.05.E.
- G. Paragraph 8.03 addresses delays, disruption, and interference to the performance or progress of the Work resulting from the performance of certain other work at or adjacent to the Site.

ARTICLE 5—SITE; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS

5.01 *Availability of Lands*

- A. Owner shall furnish the Site. Owner shall notify Contractor in writing of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work.

- B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which permanent improvements are to be made and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.
- C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

5.02 *Use of Site and Other Areas*

A. *Limitation on Use of Site and Other Areas*

1. Contractor shall confine construction equipment, temporary construction facilities, the storage of materials and equipment, and the operations of workers to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and such other adjacent areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for (a) damage to the Site; (b) damage to any such other adjacent areas used for Contractor's operations; (c) damage to any other adjacent land or areas, or to improvements, structures, utilities, or similar facilities located at such adjacent lands or areas; and (d) for injuries and losses sustained by the owners or occupants of any such land or areas; provided that such damage or injuries result from the performance of the Work or from other actions or conduct of the Contractor or those for which Contractor is responsible.
 2. If a damage or injury claim is made by the owner or occupant of any such land or area because of the performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible, Contractor shall (a) take immediate corrective or remedial action as required by Paragraph 7.13, or otherwise; (b) promptly attempt to settle the claim as to all parties through negotiations with such owner or occupant, or otherwise resolve the claim by arbitration or other dispute resolution proceeding, or in a court of competent jurisdiction; and (c) to the fullest extent permitted by Laws and Regulations, indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, from and against any such claim, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused directly or indirectly, in whole or in part by, or based upon, Contractor's performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible.
- B. *Removal of Debris During Performance of the Work:* During the progress of the Work the Contractor shall keep the Site and other adjacent areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris will conform to applicable Laws and Regulations.
 - C. *Cleaning:* Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site and adjacent areas all tools, appliances, construction equipment

and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.

- D. *Loading of Structures:* Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent structures or land to stresses or pressures that will endanger them.

5.03 *Subsurface and Physical Conditions*

- A. *Reports and Drawings:* The Supplementary Conditions identify:

1. Those reports of explorations and tests of subsurface conditions at or adjacent to the Site that contain Technical Data;
2. Those drawings of existing physical conditions at or adjacent to the Site, including those drawings depicting existing surface or subsurface structures at or adjacent to the Site (except Underground Facilities), that contain Technical Data; and
3. Technical Data contained in such reports and drawings.

- B. *Underground Facilities:* Underground Facilities are shown or indicated on the Drawings, pursuant to Paragraph 5.05, and not in the drawings referred to in Paragraph 5.03.A. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data.

- C. *Reliance by Contractor on Technical Data:* Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely upon the accuracy of the Technical Data as defined in Paragraph 1.01.A.46.b.

- D. *Limitations of Other Data and Documents:* Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:
 1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto;
 2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings;
 3. the contents of other Site-related documents made available to Contractor, such as record drawings from other projects at or adjacent to the Site, or Owner's archival documents concerning the Site; or
 4. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions, or information.

5.04 *Differing Subsurface or Physical Conditions*

- A. *Notice by Contractor:* If Contractor believes that any subsurface or physical condition that is uncovered or revealed at the Site:
1. is of such a nature as to establish that any Technical Data on which Contractor is entitled to rely as provided in Paragraph 5.03 is materially inaccurate;
 2. is of such a nature as to require a change in the Drawings or Specifications;
 3. differs materially from that shown or indicated in the Contract Documents; or
 4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except with respect to an emergency) until receipt of a written statement permitting Contractor to do so.

- B. *Engineer's Review:* After receipt of written notice as required by the preceding paragraph, Engineer will promptly review the subsurface or physical condition in question; determine whether it is necessary for Owner to obtain additional exploration or tests with respect to the condition; conclude whether the condition falls within any one or more of the differing site condition categories in Paragraph 5.04.A; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the subsurface or physical condition in question and the need for any change in the Drawings or Specifications; and advise Owner in writing of Engineer's findings, conclusions, and recommendations.
- C. *Owner's Statement to Contractor Regarding Site Condition:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the subsurface or physical condition in question, addressing the resumption of Work in connection with such condition, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations, in whole or in part.
- D. *Early Resumption of Work:* If at any time Engineer determines that Work in connection with the subsurface or physical condition in question may resume prior to completion of Engineer's review or Owner's issuance of its statement to Contractor, because the condition in question has been adequately documented, and analyzed on a preliminary basis, then the Engineer may at its discretion instruct Contractor to resume such Work.
- E. *Possible Price and Times Adjustments*
1. Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times, to the extent that the existence of a differing subsurface or physical condition, or any related delay, disruption, or interference, causes an increase or decrease in

Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:

- a. Such condition must fall within any one or more of the categories described in Paragraph 5.04.A;
 - b. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03; and,
 - c. Contractor's entitlement to an adjustment of the Contract Times is subject to the provisions of Paragraphs 4.05.D and 4.05.E.
2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times with respect to a subsurface or physical condition if:
 - a. Contractor knew of the existence of such condition at the time Contractor made a commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract, or otherwise;
 - b. The existence of such condition reasonably could have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas expressly required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such commitment; or
 - c. Contractor failed to give the written notice required by Paragraph 5.04.A.
 3. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, then any such adjustment will be set forth in a Change Order.
 4. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the subsurface or physical condition in question.
- F. *Underground Facilities; Hazardous Environmental Conditions:* Paragraph 5.05 governs rights and responsibilities regarding the presence or location of Underground Facilities. Paragraph 5.06 governs rights and responsibilities regarding Hazardous Environmental Conditions. The provisions of Paragraphs 5.03 and 5.04 are not applicable to the presence or location of Underground Facilities, or to Hazardous Environmental Conditions.

5.05 *Underground Facilities*

- A. *Contractor's Responsibilities:* Unless it is otherwise expressly provided in the Supplementary Conditions, the cost of all of the following are included in the Contract Price, and Contractor shall have full responsibility for:
1. reviewing and checking all information and data regarding existing Underground Facilities at the Site;
 2. complying with applicable state and local utility damage prevention Laws and Regulations;

3. verifying the actual location of those Underground Facilities shown or indicated in the Contract Documents as being within the area affected by the Work, by exposing such Underground Facilities during the course of construction;
 4. coordination of the Work with the owners (including Owner) of such Underground Facilities, during construction; and
 5. the safety and protection of all existing Underground Facilities at the Site, and repairing any damage thereto resulting from the Work.
- B. *Notice by Contractor:* If Contractor believes that an Underground Facility that is uncovered or revealed at the Site was not shown or indicated on the Drawings, or was not shown or indicated on the Drawings with reasonable accuracy, then Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), notify Owner and Engineer in writing regarding such Underground Facility.
- C. *Engineer's Review:* Engineer will:
1. promptly review the Underground Facility and conclude whether such Underground Facility was not shown or indicated on the Drawings, or was not shown or indicated with reasonable accuracy;
 2. identify and communicate with the owner of the Underground Facility; prepare recommendations to Owner (and if necessary issue any preliminary instructions to Contractor) regarding the Contractor's resumption of Work in connection with the Underground Facility in question;
 3. obtain any pertinent cost or schedule information from Contractor; determine the extent, if any, to which a change is required in the Drawings or Specifications to reflect and document the consequences of the existence or location of the Underground Facility; and
 4. advise Owner in writing of Engineer's findings, conclusions, and recommendations.
- During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.
- D. *Owner's Statement to Contractor Regarding Underground Facility:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the Underground Facility in question addressing the resumption of Work in connection with such Underground Facility, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations in whole or in part.
- E. *Early Resumption of Work:* If at any time Engineer determines that Work in connection with the Underground Facility may resume prior to completion of Engineer's review or Owner's issuance of its statement to Contractor, because the Underground Facility in question and conditions affected by its presence have been adequately documented, and analyzed on a preliminary basis, then the Engineer may at its discretion instruct Contractor to resume such Work.
- F. *Possible Price and Times Adjustments*
1. Contractor shall be entitled to an equitable adjustment in the Contract Price or Contract Times, to the extent that any existing Underground Facility at the Site that was not shown

or indicated on the Drawings, or was not shown or indicated with reasonable accuracy, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:

- a. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03;
 - b. Contractor's entitlement to an adjustment of the Contract Times is subject to the provisions of Paragraphs 4.05.D and 4.05.E; and
 - c. Contractor gave the notice required in Paragraph 5.05.B.
2. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, then any such adjustment will be set forth in a Change Order.
 3. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the Underground Facility in question.
 4. The information and data shown or indicated on the Drawings with respect to existing Underground Facilities at the Site is based on information and data (a) furnished by the owners of such Underground Facilities, or by others, (b) obtained from available records, or (c) gathered in an investigation conducted in accordance with the current edition of ASCE 38, Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data, by the American Society of Civil Engineers. If such information or data is incorrect or incomplete, Contractor's remedies are limited to those set forth in this Paragraph 5.05.F.

5.06 *Hazardous Environmental Conditions at Site*

A. *Reports and Drawings:* The Supplementary Conditions identify:

1. those reports known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site;
2. drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site; and
3. Technical Data contained in such reports and drawings.

B. *Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely on the accuracy of the Technical Data as defined in Paragraph 1.01.A.46.b. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures

- of construction to be employed by Contractor, and safety precautions and programs incident thereto;
2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
 3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions or information.
- C. Contractor shall not be responsible for removing or remediating any Hazardous Environmental Condition encountered, uncovered, or revealed at the Site unless such removal or remediation is expressly identified in the Contract Documents to be within the scope of the Work.
- D. Contractor shall be responsible for controlling, containing, and duly removing all Constituents of Concern brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible, and for any associated costs; and for the costs of removing and remediating any Hazardous Environmental Condition created by the presence of any such Constituents of Concern.
- E. If Contractor encounters, uncovers, or reveals a Hazardous Environmental Condition whose removal or remediation is not expressly identified in the Contract Documents as being within the scope of the Work, or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, then Contractor shall immediately: (1) secure or otherwise isolate such condition; (2) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 7.15); and (3) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 5.06.F. If Contractor or anyone for whom Contractor is responsible created the Hazardous Environmental Condition in question, then Owner may remove and remediate the Hazardous Environmental Condition, and impose a set-off against payments to account for the associated costs.
- F. Contractor shall not resume Work in connection with such Hazardous Environmental Condition or in any affected area until after Owner has obtained any required permits related thereto, and delivered written notice to Contractor either (1) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or (2) specifying any special conditions under which such Work may be resumed safely.
- G. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, as a result of such Work stoppage, such special conditions under which Work is agreed to be resumed by Contractor, or any costs or expenses incurred in response to the Hazardous Environmental Condition, then within 30 days of Owner's written notice regarding the resumption of Work, Contractor may submit a Change Proposal, or Owner may impose a set-off. Entitlement to any such adjustment is subject to the provisions of Paragraphs 4.05.D, 4.05.E, 11.07, and 11.08.
- H. If, after receipt of such written notice, Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special

conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work, following the contractual change procedures in Article 11. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 8.

- I. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court, arbitration, or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition (1) was not shown or indicated in the Drawings, Specifications, or other Contract Documents, identified as Technical Data entitled to limited reliance pursuant to Paragraph 5.06.B, or identified in the Contract Documents to be included within the scope of the Work, and (2) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.I obligates Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- J. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the failure to control, contain, or remove a Constituent of Concern brought to the Site by Contractor or by anyone for whom Contractor is responsible, or to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.J obligates Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- K. The provisions of Paragraphs 5.03, 5.04, and 5.05 do not apply to the presence of Constituents of Concern or to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 6—BONDS AND INSURANCE

6.01 *Performance, Payment, and Other Bonds*

- A. Contractor shall furnish a performance bond and a payment bond, each in an amount at least equal to the Contract Price, as security for the faithful performance and payment of Contractor's obligations under the Contract. These bonds must remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 15.08, whichever is later, except as provided otherwise by Laws or Regulations, the terms of a prescribed bond form, the Supplementary Conditions, or other provisions of the Contract.
- B. Contractor shall also furnish such other bonds (if any) as are required by the Supplementary Conditions or other provisions of the Contract.
- C. All bonds must be in the form included in the Bidding Documents or otherwise specified by Owner prior to execution of the Contract, except as provided otherwise by Laws or

Regulations, and must be issued and signed by a surety named in “Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies” as published in Department Circular 570 (as amended and supplemented) by the Bureau of the Fiscal Service, U.S. Department of the Treasury. A bond signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual’s authority to bind the surety. The evidence of authority must show that it is effective on the date the agent or attorney-in-fact signed the accompanying bond.

- D. Contractor shall obtain the required bonds from surety companies that are duly licensed or authorized, in the state or jurisdiction in which the Project is located, to issue bonds in the required amounts.
- E. If the surety on a bond furnished by Contractor is declared bankrupt or becomes insolvent, or the surety ceases to meet the requirements above, then Contractor shall promptly notify Owner and Engineer in writing and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which must comply with the bond and surety requirements above.
- F. If Contractor has failed to obtain a required bond, Owner may exclude the Contractor from the Site and exercise Owner’s termination rights under Article 16.
- G. Upon request to Owner from any Subcontractor, Supplier, or other person or entity claiming to have furnished labor, services, materials, or equipment used in the performance of the Work, Owner shall provide a copy of the payment bond to such person or entity.
- H. Upon request to Contractor from any Subcontractor, Supplier, or other person or entity claiming to have furnished labor, services, materials, or equipment used in the performance of the Work, Contractor shall provide a copy of the payment bond to such person or entity.

6.02 *Insurance—General Provisions*

- A. Owner and Contractor shall obtain and maintain insurance as required in this article and in the Supplementary Conditions.
- B. All insurance required by the Contract to be purchased and maintained by Owner or Contractor shall be obtained from insurance companies that are duly licensed or authorized in the state or jurisdiction in which the Project is located to issue insurance policies for the required limits and coverages. Unless a different standard is indicated in the Supplementary Conditions, all companies that provide insurance policies required under this Contract shall have an A.M. Best rating of A-VII or better.
- C. Alternative forms of insurance coverage, including but not limited to self-insurance and “Occupational Accident and Excess Employer’s Indemnity Policies,” are not sufficient to meet the insurance requirements of this Contract, unless expressly allowed in the Supplementary Conditions.
- D. Contractor shall deliver to Owner, with copies to each additional insured identified in the Contract, certificates of insurance and endorsements establishing that Contractor has obtained and is maintaining the policies and coverages required by the Contract. Upon request by Owner or any other insured, Contractor shall also furnish other evidence of such required insurance, including but not limited to copies of policies, documentation of applicable self-insured retentions (if allowed) and deductibles, full disclosure of all relevant exclusions, and evidence of insurance required to be purchased and maintained by

Subcontractors or Suppliers. In any documentation furnished under this provision, Contractor, Subcontractors, and Suppliers may block out (redact) (1) any confidential premium or pricing information and (2) any wording specific to a project or jurisdiction other than those applicable to this Contract.

- E. Owner shall deliver to Contractor, with copies to each additional insured identified in the Contract, certificates of insurance and endorsements establishing that Owner has obtained and is maintaining the policies and coverages required of Owner by the Contract (if any). Upon request by Contractor or any other insured, Owner shall also provide other evidence of such required insurance (if any), including but not limited to copies of policies, documentation of applicable self-insured retentions (if allowed) and deductibles, and full disclosure of all relevant exclusions. In any documentation furnished under this provision, Owner may block out (redact) (1) any confidential premium or pricing information and (2) any wording specific to a project or jurisdiction other than those relevant to this Contract.
- F. Failure of Owner or Contractor to demand such certificates or other evidence of the other party's full compliance with these insurance requirements, or failure of Owner or Contractor to identify a deficiency in compliance from the evidence provided, will not be construed as a waiver of the other party's obligation to obtain and maintain such insurance.
- G. In addition to the liability insurance required to be provided by Contractor, the Owner, at Owner's option, may purchase and maintain Owner's own liability insurance. Owner's liability policies, if any, operate separately and independently from policies required to be provided by Contractor, and Contractor cannot rely upon Owner's liability policies for any of Contractor's obligations to the Owner, Engineer, or third parties.
- H. Contractor shall require:
 - 1. Subcontractors to purchase and maintain worker's compensation, commercial general liability, and other insurance that is appropriate for their participation in the Project, and to name as additional insureds Owner and Engineer (and any other individuals or entities identified in the Supplementary Conditions as additional insureds on Contractor's liability policies) on each Subcontractor's commercial general liability insurance policy; and
 - 2. Suppliers to purchase and maintain insurance that is appropriate for their participation in the Project.
- I. If either party does not purchase or maintain the insurance required of such party by the Contract, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage.
- J. If Contractor has failed to obtain and maintain required insurance, Contractor's entitlement to enter or remain at the Site will end immediately, and Owner may impose an appropriate set-off against payment for any associated costs (including but not limited to the cost of purchasing necessary insurance coverage), and exercise Owner's termination rights under Article 16.
- K. Without prejudice to any other right or remedy, if a party has failed to obtain required insurance, the other party may elect (but is in no way obligated) to obtain equivalent insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and the Contract Price will be adjusted accordingly.

- L. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor or Contractor's interests. Contractor is responsible for determining whether such coverage and limits are adequate to protect its interests, and for obtaining and maintaining any additional insurance that Contractor deems necessary.
- M. The insurance and insurance limits required herein will not be deemed as a limitation on Contractor's liability, or that of its Subcontractors or Suppliers, under the indemnities granted to Owner and other individuals and entities in the Contract or otherwise.
- N. All the policies of insurance required to be purchased and maintained under this Contract will contain a provision or endorsement that the coverage afforded will not be canceled, or renewal refused, until at least 10 days prior written notice has been given to the purchasing policyholder. Within three days of receipt of any such written notice, the purchasing policyholder shall provide a copy of the notice to each other insured and Engineer.

6.03 *Contractor's Insurance*

- A. *Required Insurance:* Contractor shall purchase and maintain Worker's Compensation, Commercial General Liability, and other insurance pursuant to the specific requirements of the Supplementary Conditions.
- B. *General Provisions:* The policies of insurance required by this Paragraph 6.03 as supplemented must:
 - 1. include at least the specific coverages required;
 - 2. be written for not less than the limits provided, or those required by Laws or Regulations, whichever is greater;
 - 3. remain in effect at least until the Work is complete (as set forth in Paragraph 15.06.D), and longer if expressly required elsewhere in this Contract, and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work as a warranty or correction obligation, or otherwise, or returning to the Site to conduct other tasks arising from the Contract;
 - 4. apply with respect to the performance of the Work, whether such performance is by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable; and
 - 5. include all necessary endorsements to support the stated requirements.
- C. *Additional Insureds:* The Contractor's commercial general liability, automobile liability, employer's liability, umbrella or excess, pollution liability, and unmanned aerial vehicle liability policies, if required by this Contract, must:
 - 1. include and list as additional insureds Owner and Engineer, and any individuals or entities identified as additional insureds in the Supplementary Conditions;
 - 2. include coverage for the respective officers, directors, members, partners, employees, and consultants of all such additional insureds;
 - 3. afford primary coverage to these additional insureds for all claims covered thereby (including as applicable those arising from both ongoing and completed operations);

4. not seek contribution from insurance maintained by the additional insured; and
5. as to commercial general liability insurance, apply to additional insureds with respect to liability caused in whole or in part by Contractor's acts or omissions, or the acts and omissions of those working on Contractor's behalf, in the performance of Contractor's operations.

6.04 *Builder's Risk and Other Property Insurance*

- A. *Builder's Risk*: Unless otherwise provided in the Supplementary Conditions, Contractor shall purchase and maintain builder's risk insurance upon the Work on a completed value basis, in the amount of the Work's full insurable replacement cost (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). The specific requirements applicable to the builder's risk insurance are set forth in the Supplementary Conditions.
- B. *Property Insurance for Facilities of Owner Where Work Will Occur*: Owner is responsible for obtaining and maintaining property insurance covering each existing structure, building, or facility in which any part of the Work will occur, or to which any part of the Work will attach or be adjoined. Such property insurance will be written on a special perils (all-risk) form, on a replacement cost basis, providing coverage consistent with that required for the builder's risk insurance, and will be maintained until the Work is complete, as set forth in Paragraph 15.06.D.
- C. *Property Insurance for Substantially Complete Facilities*: Promptly after Substantial Completion, and before actual occupancy or use of the substantially completed Work, Owner will obtain property insurance for such substantially completed Work, and maintain such property insurance at least until the Work is complete, as set forth in Paragraph 15.06.D. Such property insurance will be written on a special perils (all-risk) form, on a replacement cost basis, and provide coverage consistent with that required for the builder's risk insurance. The builder's risk insurance may terminate upon written confirmation of Owner's procurement of such property insurance.
- D. *Partial Occupancy or Use by Owner*: If Owner will occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work, as provided in Paragraph 15.04, then Owner (directly, if it is the purchaser of the builder's risk policy, or through Contractor) will provide advance notice of such occupancy or use to the builder's risk insurer, and obtain an endorsement consenting to the continuation of coverage prior to commencing such partial occupancy or use.
- E. *Insurance of Other Property; Additional Insurance*: If the express insurance provisions of the Contract do not require or address the insurance of a property item or interest, then the entity or individual owning such property item will be responsible for insuring it. If Contractor elects to obtain other special insurance to be included in or supplement the builder's risk or property insurance policies provided under this Paragraph 6.04, it may do so at Contractor's expense.

6.05 *Property Losses; Subrogation*

- A. The builder's risk insurance policy purchased and maintained in accordance with Paragraph 6.04 (or an installation floater policy if authorized by the Supplementary Conditions), will contain provisions to the effect that in the event of payment of any loss or damage the insurer will have no rights of recovery against any insureds thereunder, or against

Engineer or its consultants, or their officers, directors, members, partners, employees, agents, consultants, or subcontractors.

1. Owner and Contractor waive all rights against each other and the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from any of the perils, risks, or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Engineer, its consultants, all individuals or entities identified in the Supplementary Conditions as builder's risk or installation floater insureds, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, under such policies for losses and damages so caused.
 2. None of the above waivers extends to the rights that any party making such waiver may have to the proceeds of insurance held by Owner or Contractor as trustee or fiduciary, or otherwise payable under any policy so issued.
- B. Any property insurance policy maintained by Owner covering any loss, damage, or consequential loss to Owner's existing structures, buildings, or facilities in which any part of the Work will occur, or to which any part of the Work will attach or adjoin; to adjacent structures, buildings, or facilities of Owner; or to part or all of the completed or substantially completed Work, during partial occupancy or use pursuant to Paragraph 15.04, after Substantial Completion pursuant to Paragraph 15.03, or after final payment pursuant to Paragraph 15.06, will contain provisions to the effect that in the event of payment of any loss or damage the insurer will have no rights of recovery against any insureds thereunder, or against Contractor, Subcontractors, or Engineer, or the officers, directors, members, partners, employees, agents, consultants, or subcontractors of each and any of them, and that the insured is allowed to waive the insurer's rights of subrogation in a written contract executed prior to the loss, damage, or consequential loss.
1. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from fire or any of the perils, risks, or causes of loss covered by such policies.
- C. The waivers in this Paragraph 6.05 include the waiver of rights due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other insured peril, risk, or cause of loss.
- D. Contractor shall be responsible for assuring that each Subcontract contains provisions whereby the Subcontractor waives all rights against Owner, Contractor, all individuals or entities identified in the Supplementary Conditions as insureds, the Engineer and its consultants, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, relating to, or resulting from fire or other peril, risk, or cause of loss covered by builder's risk insurance, installation floater, and any other property insurance applicable to the Work.

6.06 *Receipt and Application of Property Insurance Proceeds*

- A. Any insured loss under the builder's risk and other policies of property insurance required by Paragraph 6.04 will be adjusted and settled with the named insured that purchased the policy. Such named insured shall act as fiduciary for the other insureds, and give notice to such other insureds that adjustment and settlement of a claim is in progress. Any other insured may state its position regarding a claim for insured loss in writing within 15 days after notice of such claim.
- B. Proceeds for such insured losses may be made payable by the insurer either jointly to multiple insureds, or to the named insured that purchased the policy in its own right and as fiduciary for other insureds, subject to the requirements of any applicable mortgage clause. A named insured receiving insurance proceeds under the builder's risk and other policies of insurance required by Paragraph 6.04 shall maintain such proceeds in a segregated account, and distribute such proceeds in accordance with such agreement as the parties in interest may reach, or as otherwise required under the dispute resolution provisions of this Contract or applicable Laws and Regulations.
- C. If no other special agreement is reached, Contractor shall repair or replace the damaged Work, using allocated insurance proceeds.

ARTICLE 7—CONTRACTOR'S RESPONSIBILITIES

7.01 *Contractor's Means and Methods of Construction*

- A. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction.
- B. If the Contract Documents note, or Contractor determines, that professional engineering or other design services are needed to carry out Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures, or for Site safety, then Contractor shall cause such services to be provided by a properly licensed design professional, at Contractor's expense. Such services are not Owner-delegated professional design services under this Contract, and neither Owner nor Engineer has any responsibility with respect to (1) Contractor's determination of the need for such services, (2) the qualifications or licensing of the design professionals retained or employed by Contractor, (3) the performance of such services, or (4) any errors, omissions, or defects in such services.

7.02 *Supervision and Superintendence*

- A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents.
- B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who will not be replaced without written notice to Owner and Engineer except under extraordinary circumstances.

7.03 *Labor; Working Hours*

- A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall maintain good discipline and order at the Site.

- B. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of Contractor's employees; of Suppliers and Subcontractors, and their employees; and of any other individuals or entities performing or furnishing any of the Work, just as Contractor is responsible for Contractor's own acts and omissions.
- C. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site will be performed during regular working hours, Monday through Friday. Contractor will not perform Work on a Saturday, Sunday, or any legal holiday. Contractor may perform Work outside regular working hours or on Saturdays, Sundays, or legal holidays only with Owner's written consent, which will not be unreasonably withheld.

7.04 *Services, Materials, and Equipment*

- A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start up, and completion of the Work, whether or not such items are specifically called for in the Contract Documents.
- B. All materials and equipment incorporated into the Work must be new and of good quality, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications will expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.
- C. All materials and equipment must be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

7.05 *"Or Equals"*

- A. *Contractor's Request; Governing Criteria:* Whenever an item of equipment or material is specified or described in the Contract Documents by using the names of one or more proprietary items or specific Suppliers, the Contract Price has been based upon Contractor furnishing such item as specified. The specification or description of such an item is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or equal" item is permitted, Contractor may request that Engineer authorize the use of other items of equipment or material, or items from other proposed Suppliers, under the circumstances described below.
 - 1. If Engineer in its sole discretion determines that an item of equipment or material proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, Engineer will deem it an "or equal" item. For the purposes of this paragraph, a proposed item of equipment or material will be considered functionally equal to an item so named if:
 - a. in the exercise of reasonable judgment Engineer determines that the proposed item:
 - 1) is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;

- 2) will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole;
 - 3) has a proven record of performance and availability of responsive service; and
 - 4) is not objectionable to Owner.
- b. Contractor certifies that, if the proposed item is approved and incorporated into the Work:
- 1) there will be no increase in cost to the Owner or increase in Contract Times; and
 - 2) the item will conform substantially to the detailed requirements of the item named in the Contract Documents.
- B. *Contractor's Expense*: Contractor shall provide all data in support of any proposed "or equal" item at Contractor's expense.
- C. *Engineer's Evaluation and Determination*: Engineer will be allowed a reasonable time to evaluate each "or-equal" request. Engineer may require Contractor to furnish additional data about the proposed "or-equal" item. Engineer will be the sole judge of acceptability. No "or-equal" item will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an "or-equal," which will be evidenced by an approved Shop Drawing or other written communication. Engineer will advise Contractor in writing of any negative determination.
- D. *Effect of Engineer's Determination*: Neither approval nor denial of an "or-equal" request will result in any change in Contract Price. The Engineer's denial of an "or-equal" request will be final and binding, and may not be reversed through an appeal under any provision of the Contract.
- E. *Treatment as a Substitution Request*: If Engineer determines that an item of equipment or material proposed by Contractor does not qualify as an "or-equal" item, Contractor may request that Engineer consider the item a proposed substitute pursuant to Paragraph 7.06.

7.06 Substitutes

- A. *Contractor's Request; Governing Criteria*: Unless the specification or description of an item of equipment or material required to be furnished under the Contract Documents contains or is followed by words reading that no substitution is permitted, Contractor may request that Engineer authorize the use of other items of equipment or material under the circumstances described below. To the extent possible such requests must be made before commencement of related construction at the Site.
1. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is functionally equivalent to that named and an acceptable substitute therefor. Engineer will not accept requests for review of proposed substitute items of equipment or material from anyone other than Contractor.
 2. The requirements for review by Engineer will be as set forth in Paragraph 7.06.B, as supplemented by the Specifications, and as Engineer may decide is appropriate under the circumstances.

3. Contractor shall make written application to Engineer for review of a proposed substitute item of equipment or material that Contractor seeks to furnish or use. The application:
 - a. will certify that the proposed substitute item will:
 - 1) perform adequately the functions and achieve the results called for by the general design;
 - 2) be similar in substance to the item specified; and
 - 3) be suited to the same use as the item specified.
 - b. will state:
 - 1) the extent, if any, to which the use of the proposed substitute item will necessitate a change in Contract Times;
 - 2) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item; and
 - 3) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty.
 - c. will identify:
 - 1) all variations of the proposed substitute item from the item specified; and
 - 2) available engineering, sales, maintenance, repair, and replacement services.
 - d. will contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including but not limited to changes in Contract Price, shared savings, costs of redesign, and claims of other contractors affected by any resulting change.
- B. *Engineer's Evaluation and Determination*: Engineer will be allowed a reasonable time to evaluate each substitute request, and to obtain comments and direction from Owner. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No substitute will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an acceptable substitute. Engineer's determination will be evidenced by a Field Order or a proposed Change Order accounting for the substitution itself and all related impacts, including changes in Contract Price or Contract Times. Engineer will advise Contractor in writing of any negative determination.
- C. *Special Guarantee*: Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.
- D. *Reimbursement of Engineer's Cost*: Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.

- E. *Contractor's Expense*: Contractor shall provide all data in support of any proposed substitute at Contractor's expense.
- F. *Effect of Engineer's Determination*: If Engineer approves the substitution request, Contractor shall execute the proposed Change Order and proceed with the substitution. The Engineer's denial of a substitution request will be final and binding, and may not be reversed through an appeal under any provision of the Contract. Contractor may challenge the scope of reimbursement costs imposed under Paragraph 7.06.D, by timely submittal of a Change Proposal.

7.07 *Concerning Subcontractors and Suppliers*

- A. Contractor may retain Subcontractors and Suppliers for the performance of parts of the Work. Such Subcontractors and Suppliers must be acceptable to Owner. The Contractor's retention of a Subcontractor or Supplier for the performance of parts of the Work will not relieve Contractor's obligation to Owner to perform and complete the Work in accordance with the Contract Documents.
- B. Contractor shall retain specific Subcontractors and Suppliers for the performance of designated parts of the Work if required by the Contract to do so.
- C. Subsequent to the submittal of Contractor's Bid or final negotiation of the terms of the Contract, Owner may not require Contractor to retain any Subcontractor or Supplier to furnish or perform any of the Work against which Contractor has reasonable objection.
- D. Prior to entry into any binding subcontract or purchase order, Contractor shall submit to Owner the identity of the proposed Subcontractor or Supplier (unless Owner has already deemed such proposed Subcontractor or Supplier acceptable during the bidding process or otherwise). Such proposed Subcontractor or Supplier shall be deemed acceptable to Owner unless Owner raises a substantive, reasonable objection within 5 days.
- E. Owner may require the replacement of any Subcontractor or Supplier. Owner also may require Contractor to retain specific replacements; provided, however, that Owner may not require a replacement to which Contractor has a reasonable objection. If Contractor has submitted the identity of certain Subcontractors or Suppliers for acceptance by Owner, and Owner has accepted it (either in writing or by failing to make written objection thereto), then Owner may subsequently revoke the acceptance of any such Subcontractor or Supplier so identified solely on the basis of substantive, reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor or Supplier.
- F. If Owner requires the replacement of any Subcontractor or Supplier retained by Contractor to perform any part of the Work, then Contractor shall be entitled to an adjustment in Contract Price or Contract Times, with respect to the replacement; and Contractor shall initiate a Change Proposal for such adjustment within 30 days of Owner's requirement of replacement.
- G. No acceptance by Owner of any such Subcontractor or Supplier, whether initially or as a replacement, will constitute a waiver of the right of Owner to the completion of the Work in accordance with the Contract Documents.

- H. On a monthly basis, Contractor shall submit to Engineer a complete list of all Subcontractors and Suppliers having a direct contract with Contractor, and of all other Subcontractors and Suppliers known to Contractor at the time of submittal.
- I. Contractor shall be solely responsible for scheduling and coordinating the work of Subcontractors and Suppliers.
- J. The divisions and sections of the Specifications and the identifications of any Drawings do not control Contractor in dividing the Work among Subcontractors or Suppliers, or in delineating the Work to be performed by any specific trade.
- K. All Work performed for Contractor by a Subcontractor or Supplier must be pursuant to an appropriate contractual agreement that specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract for the benefit of Owner and Engineer.
- L. Owner may furnish to any Subcontractor or Supplier, to the extent practicable, information about amounts paid to Contractor for Work performed for Contractor by the Subcontractor or Supplier.
- M. Contractor shall restrict all Subcontractors and Suppliers from communicating with Engineer or Owner, except through Contractor or in case of an emergency, or as otherwise expressly allowed in this Contract.

7.08 *Patent Fees and Royalties*

- A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If an invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if, to the actual knowledge of Owner or Engineer, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights will be disclosed in the Contract Documents.
- B. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, and its officers, directors, members, partners, employees, agents, consultants, and subcontractors, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device specified in the Contract Documents, but not identified as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.
- C. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

7.09 *Permits*

- A. Unless otherwise provided in the Contract Documents, Contractor shall obtain and pay for all construction permits, licenses, and certificates of occupancy. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of the submission of Contractor's Bid (or when Contractor became bound under a negotiated contract). Owner shall pay all charges of utility owners for connections for providing permanent service to the Work.

7.10 *Taxes*

- A. Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

7.11 *Laws and Regulations*

- A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.
- B. If Contractor performs any Work or takes any other action knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all resulting costs and losses, and shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work or other action. It is not Contractor's responsibility to make certain that the Work described in the Contract Documents is in accordance with Laws and Regulations, but this does not relieve Contractor of its obligations under Paragraph 3.03.
- C. Owner or Contractor may give written notice to the other party of any changes after the submission of Contractor's Bid (or after the date when Contractor became bound under a negotiated contract) in Laws or Regulations having an effect on the cost or time of performance of the Work, including but not limited to changes in Laws or Regulations having an effect on procuring permits and on sales, use, value-added, consumption, and other similar taxes. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times resulting from such changes, then within 30 days of such written notice Contractor may submit a Change Proposal, or Owner may initiate a Claim.

7.12 *Record Documents*

- A. Contractor shall maintain in a safe place at the Site one printed record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, written interpretations and clarifications, and approved Shop Drawings. Contractor shall keep such record documents in good order and annotate them to show changes made during construction. These record documents, together with all approved Samples, will be available to Engineer for reference. Upon completion of the Work, Contractor shall deliver these record documents to Engineer.

7.13 *Safety and Protection*

- A. Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations.
- B. Contractor shall designate a qualified and experienced safety representative whose duties and responsibilities are the prevention of Work-related accidents and the maintenance and supervision of safety precautions and programs.
- C. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury, or loss to:
 - 1. all persons on the Site or who may be affected by the Work;
 - 2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
 - 3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, other work in progress, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.
- D. All damage, injury, or loss to any property referred to in Paragraph 7.13.C.2 or 7.13.C.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor at its expense (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).
- E. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection.
- F. Contractor shall notify Owner; the owners of adjacent property; the owners of Underground Facilities and other utilities (if the identity of such owners is known to Contractor); and other contractors and utility owners performing work at or adjacent to the Site, in writing, when Contractor knows that prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property or work in progress.
- G. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. Any Owner's safety programs that are applicable to the Work are identified or included in the Supplementary Conditions or Specifications.
- H. Contractor shall inform Owner and Engineer of the specific requirements of Contractor's safety program with which Owner's and Engineer's employees and representatives must comply while at the Site.

- I. Contractor's duties and responsibilities for safety and protection will continue until all the Work is completed, Engineer has issued a written notice to Owner and Contractor in accordance with Paragraph 15.06.C that the Work is acceptable, and Contractor has left the Site (except as otherwise expressly provided in connection with Substantial Completion).
- J. Contractor's duties and responsibilities for safety and protection will resume whenever Contractor or any Subcontractor or Supplier returns to the Site to fulfill warranty or correction obligations, or to conduct other tasks arising from the Contract Documents.

7.14 *Hazard Communication Programs*

- A. Contractor shall be responsible for coordinating any exchange of safety data sheets (formerly known as material safety data sheets) or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

7.15 *Emergencies*

- A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused by an emergency, or are required as a result of Contractor's response to an emergency. If Engineer determines that a change in the Contract Documents is required because of an emergency or Contractor's response, a Work Change Directive or Change Order will be issued.

7.16 *Submittals*

A. *Shop Drawing and Sample Requirements*

- 1. Before submitting a Shop Drawing or Sample, Contractor shall:
 - a. review and coordinate the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;
 - b. determine and verify:
 - 1) all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect to the Submittal;
 - 2) the suitability of all materials and equipment offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and
 - 3) all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto;
 - c. confirm that the Submittal is complete with respect to all related data included in the Submittal.
- 2. Each Shop Drawing or Sample must bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review of that Submittal, and that Contractor approves the Submittal.

3. With each Shop Drawing or Sample, Contractor shall give Engineer specific written notice of any variations that the Submittal may have from the requirements of the Contract Documents. This notice must be set forth in a written communication separate from the Submittal; and, in addition, in the case of a Shop Drawing by a specific notation made on the Shop Drawing itself.
- B. *Submittal Procedures for Shop Drawings and Samples:* Contractor shall label and submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals.
1. *Shop Drawings*
 - a. Contractor shall submit the number of copies required in the Specifications.
 - b. Data shown on the Shop Drawings must be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide, and to enable Engineer to review the information for the limited purposes required by Paragraph 7.16.C.
 2. *Samples*
 - a. Contractor shall submit the number of Samples required in the Specifications.
 - b. Contractor shall clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the Submittal for the limited purposes required by Paragraph 7.16.C.
 3. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.
- C. *Engineer's Review of Shop Drawings and Samples*
1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the accepted Schedule of Submittals. Engineer's review and approval will be only to determine if the items covered by the Submittals will, after installation or incorporation in the Work, comply with the requirements of the Contract Documents, and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.
 2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction, or to safety precautions or programs incident thereto.
 3. Engineer's review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.
 4. Engineer's review and approval of a Shop Drawing or Sample will not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 7.16.A.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer will

document any such approved variation from the requirements of the Contract Documents in a Field Order or other appropriate Contract modification.

5. Engineer's review and approval of a Shop Drawing or Sample will not relieve Contractor from responsibility for complying with the requirements of Paragraphs 7.16.A and B.
6. Engineer's review and approval of a Shop Drawing or Sample, or of a variation from the requirements of the Contract Documents, will not, under any circumstances, change the Contract Times or Contract Price, unless such changes are included in a Change Order.
7. Neither Engineer's receipt, review, acceptance, or approval of a Shop Drawing or Sample will result in such item becoming a Contract Document.
8. Contractor shall perform the Work in compliance with the requirements and commitments set forth in approved Shop Drawings and Samples, subject to the provisions of Paragraph 7.16.C.4.

D. Resubmittal Procedures for Shop Drawings and Samples

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous Submittals.
2. Contractor shall furnish required Shop Drawing and Sample submittals with sufficient information and accuracy to obtain required approval of an item with no more than two resubmittals. Engineer will record Engineer's time for reviewing a third or subsequent resubmittal of a Shop Drawing or Sample, and Contractor shall be responsible for Engineer's charges to Owner for such time. Owner may impose a set-off against payments due Contractor to secure reimbursement for such charges.
3. If Contractor requests a change of a previously approved Shop Drawing or Sample, Contractor shall be responsible for Engineer's charges to Owner for its review time, and Owner may impose a set-off against payments due Contractor to secure reimbursement for such charges, unless the need for such change is beyond the control of Contractor.

E. Submittals Other than Shop Drawings, Samples, and Owner-Delegated Designs

1. The following provisions apply to all Submittals other than Shop Drawings, Samples, and Owner-delegated designs:
 - a. Contractor shall submit all such Submittals to the Engineer in accordance with the Schedule of Submittals and pursuant to the applicable terms of the Contract Documents.
 - b. Engineer will provide timely review of all such Submittals in accordance with the Schedule of Submittals and return such Submittals with a notation of either Accepted or Not Accepted. Any such Submittal that is not returned within the time established in the Schedule of Submittals will be deemed accepted.
 - c. Engineer's review will be only to determine if the Submittal is acceptable under the requirements of the Contract Documents as to general form and content of the Submittal.

- d. If any such Submittal is not accepted, Contractor shall confer with Engineer regarding the reason for the non-acceptance, and resubmit an acceptable document.
- 2. Procedures for the submittal and acceptance of the Progress Schedule, the Schedule of Submittals, and the Schedule of Values are set forth in Paragraphs 2.03, 2.04, and 2.05.
- F. Owner-delegated Designs: Submittals pursuant to Owner-delegated designs are governed by the provisions of Paragraph 7.19.

7.17 Contractor's General Warranty and Guarantee

- A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer is entitled to rely on Contractor's warranty and guarantee.
- B. Owner's rights under this warranty and guarantee are in addition to, and are not limited by, Owner's rights under the correction period provisions of Paragraph 15.08. The time in which Owner may enforce its warranty and guarantee rights under this Paragraph 7.17 is limited only by applicable Laws and Regulations restricting actions to enforce such rights; provided, however, that after the end of the correction period under Paragraph 15.08:
 - 1. Owner shall give Contractor written notice of any defective Work within 60 days of the discovery that such Work is defective; and
 - 2. Such notice will be deemed the start of an event giving rise to a Claim under Paragraph 12.01.B, such that any related Claim must be brought within 30 days of the notice.
- C. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:
 - 1. abuse, or improper modification, maintenance, or operation, by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or
 - 2. normal wear and tear under normal usage.
- D. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents is absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents, a release of Contractor's obligation to perform the Work in accordance with the Contract Documents, or a release of Owner's warranty and guarantee rights under this Paragraph 7.17:
 - 1. Observations by Engineer;
 - 2. Recommendation by Engineer or payment by Owner of any progress or final payment;
 - 3. The issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;
 - 4. Use or occupancy of the Work or any part thereof by Owner;
 - 5. Any review and approval of a Shop Drawing or Sample submittal;
 - 6. The issuance of a notice of acceptability by Engineer;
 - 7. The end of the correction period established in Paragraph 15.08;
 - 8. Any inspection, test, or approval by others; or

9. Any correction of defective Work by Owner.
- E. If the Contract requires the Contractor to accept the assignment of a contract entered into by Owner, then the specific warranties, guarantees, and correction obligations contained in the assigned contract will govern with respect to Contractor's performance obligations to Owner for the Work described in the assigned contract.

7.18 Indemnification

- A. To the fullest extent permitted by Laws and Regulations, and in addition to any other obligations of Contractor under the Contract or otherwise, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, from losses, damages, costs, and judgments (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising from third-party claims or actions relating to or resulting from the performance or furnishing of the Work, provided that any such claim, action, loss, cost, judgment or damage is attributable to bodily injury, sickness, disease, or death, or to damage to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom, but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable.
- B. In any and all claims against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 7.18.A will not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

7.19 Delegation of Professional Design Services

- A. Owner may require Contractor to provide professional design services for a portion of the Work by express delegation in the Contract Documents. Such delegation will specify the performance and design criteria that such services must satisfy, and the Submittals that Contractor must furnish to Engineer with respect to the Owner-delegated design.
- B. Contractor shall cause such Owner-delegated professional design services to be provided pursuant to the professional standard of care by a properly licensed design professional, whose signature and seal must appear on all drawings, calculations, specifications, certifications, and Submittals prepared by such design professional. Such design professional must issue all certifications of design required by Laws and Regulations.
- C. If a Shop Drawing or other Submittal related to the Owner-delegated design is prepared by Contractor, a Subcontractor, or others for submittal to Engineer, then such Shop Drawing or other Submittal must bear the written approval of Contractor's design professional when submitted by Contractor to Engineer.

- D. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy, and completeness of the services, certifications, and approvals performed or provided by the design professionals retained or employed by Contractor under an Owner-delegated design, subject to the professional standard of care and the performance and design criteria stated in the Contract Documents.
- E. Pursuant to this Paragraph 7.19, Engineer's review, approval, and other determinations regarding design drawings, calculations, specifications, certifications, and other Submittals furnished by Contractor pursuant to an Owner-delegated design will be only for the following limited purposes:
 - 1. Checking for conformance with the requirements of this Paragraph 7.19;
 - 2. Confirming that Contractor (through its design professionals) has used the performance and design criteria specified in the Contract Documents; and
 - 3. Establishing that the design furnished by Contractor is consistent with the design concept expressed in the Contract Documents.
- F. Contractor shall not be responsible for the adequacy of performance or design criteria specified by Owner or Engineer.
- G. Contractor is not required to provide professional services in violation of applicable Laws and Regulations.

ARTICLE 8—OTHER WORK AT THE SITE

8.01 *Other Work*

- A. In addition to and apart from the Work under the Contract Documents, the Owner may perform other work at or adjacent to the Site. Such other work may be performed by Owner's employees, or through contracts between the Owner and third parties. Owner may also arrange to have third-party utility owners perform work on their utilities and facilities at or adjacent to the Site.
- B. If Owner performs other work at or adjacent to the Site with Owner's employees, or through contracts for such other work, then Owner shall give Contractor written notice thereof prior to starting any such other work. If Owner has advance information regarding the start of any third-party utility work that Owner has arranged to take place at or adjacent to the Site, Owner shall provide such information to Contractor.
- C. Contractor shall afford proper and safe access to the Site to each contractor that performs such other work, each utility owner performing other work, and Owner, if Owner is performing other work with Owner's employees, and provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work.
- D. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others' work with the written consent of Engineer and the others whose work will be affected.

- E. If the proper execution or results of any part of Contractor's Work depends upon work performed by others, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.
- F. The provisions of this article are not applicable to work that is performed by third-party utilities or other third-party entities without a contract with Owner, or that is performed without having been arranged by Owner. If such work occurs, then any related delay, disruption, or interference incurred by Contractor is governed by the provisions of Paragraph 4.05.C.3.

8.02 *Coordination*

- A. If Owner intends to contract with others for the performance of other work at or adjacent to the Site, to perform other work at or adjacent to the Site with Owner's employees, or to arrange to have utility owners perform work at or adjacent to the Site, the following will be set forth in the Supplementary Conditions or provided to Contractor prior to the start of any such other work:
 - 1. The identity of the individual or entity that will have authority and responsibility for coordination of the activities among the various contractors;
 - 2. An itemization of the specific matters to be covered by such authority and responsibility; and
 - 3. The extent of such authority and responsibilities.
- B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

8.03 *Legal Relationships*

- A. If, in the course of performing other work for Owner at or adjacent to the Site, the Owner's employees, any other contractor working for Owner, or any utility owner that Owner has arranged to perform work, causes damage to the Work or to the property of Contractor or its Subcontractors, or delays, disrupts, interferes with, or increases the scope or cost of the performance of the Work, through actions or inaction, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times. Contractor must submit any Change Proposal seeking an equitable adjustment in the Contract Price or the Contract Times under this paragraph within 30 days of the damaging, delaying, disrupting, or interfering event. The entitlement to, and extent of, any such equitable adjustment will take into account information (if any) regarding such other work that was provided to Contractor in the Contract Documents prior to the submittal of the Bid or the final negotiation of the terms of the Contract, and any remedies available to Contractor under Laws or Regulations concerning utility action or inaction. When applicable, any such equitable adjustment in Contract Price will be conditioned on Contractor assigning to Owner all Contractor's rights against such other contractor or utility owner with respect to the damage, delay, disruption, or interference that is the subject of the adjustment. Contractor's entitlement to an adjustment of the Contract Times or Contract Price is subject to the provisions of Paragraphs 4.05.D and 4.05.E.

- B. Contractor shall take reasonable and customary measures to avoid damaging, delaying, disrupting, or interfering with the work of Owner, any other contractor, or any utility owner performing other work at or adjacent to the Site.
 - 1. If Contractor fails to take such measures and as a result damages, delays, disrupts, or interferes with the work of any such other contractor or utility owner, then Owner may impose a set-off against payments due Contractor, and assign to such other contractor or utility owner the Owner's contractual rights against Contractor with respect to the breach of the obligations set forth in this Paragraph 8.03.B.
 - 2. When Owner is performing other work at or adjacent to the Site with Owner's employees, Contractor shall be liable to Owner for damage to such other work, and for the reasonable direct delay, disruption, and interference costs incurred by Owner as a result of Contractor's failure to take reasonable and customary measures with respect to Owner's other work. In response to such damage, delay, disruption, or interference, Owner may impose a set-off against payments due Contractor.
- C. If Contractor damages, delays, disrupts, or interferes with the work of any other contractor, or any utility owner performing other work at or adjacent to the Site, through Contractor's failure to take reasonable and customary measures to avoid such impacts, or if any claim arising out of Contractor's actions, inactions, or negligence in performance of the Work at or adjacent to the Site is made by any such other contractor or utility owner against Contractor, Owner, or Engineer, then Contractor shall (1) promptly attempt to settle the claim as to all parties through negotiations with such other contractor or utility owner, or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law, and (2) indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claims, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such damage, delay, disruption, or interference.

ARTICLE 9—OWNER'S RESPONSIBILITIES

9.01 *Communications to Contractor*

- A. Except as otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through Engineer.

9.02 *Replacement of Engineer*

- A. Owner may at its discretion appoint an engineer to replace Engineer, provided Contractor makes no reasonable objection to the replacement engineer. The replacement engineer's status under the Contract Documents will be that of the former Engineer.

9.03 *Furnish Data*

- A. Owner shall promptly furnish the data required of Owner under the Contract Documents.

9.04 *Pay When Due*

- A. Owner shall make payments to Contractor when they are due as provided in the Agreement.

9.05 *Lands and Easements; Reports, Tests, and Drawings*

- A. Owner's duties with respect to providing lands and easements are set forth in Paragraph 5.01.
- B. Owner's duties with respect to providing engineering surveys to establish reference points are set forth in Paragraph 4.03.
- C. Article 5 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of conditions at the Site, and drawings of physical conditions relating to existing surface or subsurface structures at the Site.

9.06 *Insurance*

- A. Owner's responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 6.

9.07 *Change Orders*

- A. Owner's responsibilities with respect to Change Orders are set forth in Article 11.

9.08 *Inspections, Tests, and Approvals*

- A. Owner's responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 14.02.B.

9.09 *Limitations on Owner's Responsibilities*

- A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

9.10 *Undisclosed Hazardous Environmental Condition*

- A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 5.06.

9.11 *Evidence of Financial Arrangements*

- A. Upon request of Contractor, Owner shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract (including obligations under proposed changes in the Work).

9.12 *Safety Programs*

- A. While at the Site, Owner's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Owner has been informed.
- B. Owner shall furnish copies of any applicable Owner safety programs to Contractor.

ARTICLE 10—ENGINEER'S STATUS DURING CONSTRUCTION

10.01 *Owner's Representative*

- A. Engineer will be Owner's representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in the Contract.

10.02 *Visits to Site*

- A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe, as an experienced and qualified design professional, the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.
- B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 10.07. Particularly, but without limitation, during or as a result of Engineer's visits or observations of Contractor's Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

10.03 *Resident Project Representative*

- A. If Owner and Engineer have agreed that Engineer will furnish a Resident Project Representative to represent Engineer at the Site and assist Engineer in observing the progress and quality of the Work, then the authority and responsibilities of any such Resident Project Representative will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in the Supplementary Conditions and in Paragraph 10.07.
- B. If Owner designates an individual or entity who is not Engineer's consultant, agent, or employee to represent Owner at the Site, then the responsibilities and authority of such individual or entity will be as provided in the Supplementary Conditions.

10.04 *Engineer's Authority*

- A. Engineer has the authority to reject Work in accordance with Article 14.
- B. Engineer's authority as to Submittals is set forth in Paragraph 7.16.
- C. Engineer's authority as to design drawings, calculations, specifications, certifications and other Submittals from Contractor in response to Owner's delegation (if any) to Contractor of professional design services, is set forth in Paragraph 7.19.
- D. Engineer's authority as to changes in the Work is set forth in Article 11.

E. Engineer's authority as to Applications for Payment is set forth in Article 15.

10.05 *Determinations for Unit Price Work*

A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor as set forth in Paragraph 13.03.

10.06 *Decisions on Requirements of Contract Documents and Acceptability of Work*

A. Engineer will render decisions regarding the requirements of the Contract Documents, and judge the acceptability of the Work, pursuant to the specific procedures set forth herein for initial interpretations, Change Proposals, and acceptance of the Work. In rendering such decisions and judgments, Engineer will not show partiality to Owner or Contractor, and will not be liable to Owner, Contractor, or others in connection with any proceedings, interpretations, decisions, or judgments conducted or rendered in good faith.

10.07 *Limitations on Engineer's Authority and Responsibilities*

A. Neither Engineer's authority or responsibility under this Article 10 or under any other provision of the Contract, nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer, will create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.

D. Engineer's review of the final Application for Payment and accompanying documentation, and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Contractor under Paragraph 15.06.A, will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals, that the results certified indicate compliance with the Contract Documents.

E. The limitations upon authority and responsibility set forth in this Paragraph 10.07 also apply to the Resident Project Representative, if any.

10.08 *Compliance with Safety Program*

A. While at the Site, Engineer's employees and representatives will comply with the specific applicable requirements of Owner's and Contractor's safety programs of which Engineer has been informed.

ARTICLE 11—CHANGES TO THE CONTRACT

11.01 *Amending and Supplementing the Contract*

- A. The Contract may be amended or supplemented by a Change Order, a Work Change Directive, or a Field Order.
- B. If an amendment or supplement to the Contract includes a change in the Contract Price or the Contract Times, such amendment or supplement must be set forth in a Change Order.
- C. All changes to the Contract that involve (1) the performance or acceptability of the Work, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, must be supported by Engineer's recommendation. Owner and Contractor may amend other terms and conditions of the Contract without the recommendation of the Engineer.

11.02 *Change Orders*

- A. Owner and Contractor shall execute appropriate Change Orders covering:
 - 1. Changes in Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive;
 - 2. Changes in Contract Price resulting from an Owner set-off, unless Contractor has duly contested such set-off;
 - 3. Changes in the Work which are: (a) ordered by Owner pursuant to Paragraph 11.05, (b) required because of Owner's acceptance of defective Work under Paragraph 14.04 or Owner's correction of defective Work under Paragraph 14.07, or (c) agreed to by the parties, subject to the need for Engineer's recommendation if the change in the Work involves the design (as set forth in the Drawings, Specifications, or otherwise) or other engineering or technical matters; and
 - 4. Changes that embody the substance of any final and binding results under: Paragraph 11.03.B, resolving the impact of a Work Change Directive; Paragraph 11.09, concerning Change Proposals; Article 12, Claims; Paragraph 13.02.D, final adjustments resulting from allowances; Paragraph 13.03.D, final adjustments relating to determination of quantities for Unit Price Work; and similar provisions.
- B. If Owner or Contractor refuses to execute a Change Order that is required to be executed under the terms of Paragraph 11.02.A, it will be deemed to be of full force and effect, as if fully executed.

11.03 *Work Change Directives*

- A. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the modification ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order, following negotiations by the parties as to the Work Change Directive's effect, if any, on the Contract Price and Contract Times; or, if negotiations are unsuccessful, by a determination under the terms of the Contract Documents governing adjustments, expressly including Paragraph 11.07 regarding change of Contract Price.

- B. If Owner has issued a Work Change Directive and:
 - 1. Contractor believes that an adjustment in Contract Times or Contract Price is necessary, then Contractor shall submit any Change Proposal seeking such an adjustment no later than 30 days after the completion of the Work set out in the Work Change Directive.
 - 2. Owner believes that an adjustment in Contract Times or Contract Price is necessary, then Owner shall submit any Claim seeking such an adjustment no later than 60 days after issuance of the Work Change Directive.

11.04 *Field Orders*

- A. Engineer may authorize minor changes in the Work if the changes do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Such changes will be accomplished by a Field Order and will be binding on Owner and also on Contractor, which shall perform the Work involved promptly.
- B. If Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, then before proceeding with the Work at issue, Contractor shall submit a Change Proposal as provided herein.

11.05 *Owner-Authorized Changes in the Work*

- A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work. Changes involving the design (as set forth in the Drawings, Specifications, or otherwise) or other engineering or technical matters will be supported by Engineer's recommendation.
- B. Such changes in the Work may be accomplished by a Change Order, if Owner and Contractor have agreed as to the effect, if any, of the changes on Contract Times or Contract Price; or by a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved; or, in the case of a deletion in the Work, promptly cease construction activities with respect to such deleted Work. Added or revised Work must be performed under the applicable conditions of the Contract Documents.
- C. Nothing in this Paragraph 11.05 obligates Contractor to undertake work that Contractor reasonably concludes cannot be performed in a manner consistent with Contractor's safety obligations under the Contract Documents or Laws and Regulations.

11.06 *Unauthorized Changes in the Work*

- A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents, as amended, modified, or supplemented, except in the case of an emergency as provided in Paragraph 7.15 or in the case of uncovering Work as provided in Paragraph 14.05.C.2.

11.07 *Change of Contract Price*

- A. The Contract Price may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Price must comply with the provisions of Paragraph 11.09. Any Claim for an adjustment of Contract Price must comply with the provisions of Article 12.
- B. An adjustment in the Contract Price will be determined as follows:

1. Where the Work involved is covered by unit prices contained in the Contract Documents, then by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 13.03);
 2. Where the Work involved is not covered by unit prices contained in the Contract Documents, then by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 11.07.C.2); or
 3. Where the Work involved is not covered by unit prices contained in the Contract Documents and the parties do not reach mutual agreement to a lump sum, then on the basis of the Cost of the Work (determined as provided in Paragraph 13.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 11.07.C).
- C. *Contractor's Fee:* When applicable, the Contractor's fee for overhead and profit will be determined as follows:
1. A mutually acceptable fixed fee; or
 2. If a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:
 - a. For costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2, the Contractor's fee will be 15 percent;
 - b. For costs incurred under Paragraph 13.01.B.3, the Contractor's fee will be 5 percent;
 - c. Where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 11.07.C.2.a and 11.07.C.2.b is that the Contractor's fee will be based on: (1) a fee of 15 percent of the costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2 by the Subcontractor that actually performs the Work, at whatever tier, and (2) with respect to Contractor itself and to any Subcontractors of a tier higher than that of the Subcontractor that actually performs the Work, a fee of 5 percent of the amount (fee plus underlying costs incurred) attributable to the next lower tier Subcontractor; provided, however, that for any such subcontracted Work the maximum total fee to be paid by Owner will be no greater than 27 percent of the costs incurred by the Subcontractor that actually performs the Work;
 - d. No fee will be payable on the basis of costs itemized under Paragraphs 13.01.B.4, 13.01.B.5, and 13.01.C;
 - e. The amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in Cost of the Work will be the amount of the actual net decrease in Cost of the Work and a deduction of an additional amount equal to 5 percent of such actual net decrease in Cost of the Work; and
 - f. When both additions and credits are involved in any one change or Change Proposal, the adjustment in Contractor's fee will be computed by determining the sum of the costs in each of the cost categories in Paragraph 13.01.B (specifically, payroll costs, Paragraph 13.01.B.1; incorporated materials and equipment costs, Paragraph 13.01.B.2; Subcontract costs, Paragraph 13.01.B.3; special consultants costs, Paragraph 13.01.B.4; and other costs, Paragraph 13.01.B.5) and applying to each such cost category sum the appropriate fee from Paragraphs 11.07.C.2.a through 11.07.C.2.e, inclusive.

11.08 *Change of Contract Times*

- A. The Contract Times may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Times must comply with the provisions of Paragraph 11.09. Any Claim for an adjustment in the Contract Times must comply with the provisions of Article 12.
- B. Delay, disruption, and interference in the Work, and any related changes in Contract Times, are addressed in and governed by Paragraph 4.05.

11.09 *Change Proposals*

- A. *Purpose and Content:* Contractor shall submit a Change Proposal to Engineer to request an adjustment in the Contract Times or Contract Price; contest an initial decision by Engineer concerning the requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents; challenge a set-off against payment due; or seek other relief under the Contract. The Change Proposal will specify any proposed change in Contract Times or Contract Price, or other proposed relief, and explain the reason for the proposed change, with citations to any governing or applicable provisions of the Contract Documents. Each Change Proposal will address only one issue, or a set of closely related issues.
- B. *Change Proposal Procedures*
 - 1. *Submittal:* Contractor shall submit each Change Proposal to Engineer within 30 days after the start of the event giving rise thereto, or after such initial decision.
 - 2. *Supporting Data:* The Contractor shall submit supporting data, including the proposed change in Contract Price or Contract Time (if any), to the Engineer and Owner within 15 days after the submittal of the Change Proposal.
 - a. Change Proposals based on or related to delay, interruption, or interference must comply with the provisions of Paragraphs 4.05.D and 4.05.E.
 - b. Change proposals related to a change of Contract Price must include full and detailed accounts of materials incorporated into the Work and labor and equipment used for the subject Work.

The supporting data must be accompanied by a written statement that the supporting data are accurate and complete, and that any requested time or price adjustment is the entire adjustment to which Contractor believes it is entitled as a result of said event.

- 3. *Engineer's Initial Review:* Engineer will advise Owner regarding the Change Proposal, and consider any comments or response from Owner regarding the Change Proposal. If in its discretion Engineer concludes that additional supporting data is needed before conducting a full review and making a decision regarding the Change Proposal, then Engineer may request that Contractor submit such additional supporting data by a date specified by Engineer, prior to Engineer beginning its full review of the Change Proposal.
- 4. *Engineer's Full Review and Action on the Change Proposal:* Upon receipt of Contractor's supporting data (including any additional data requested by Engineer), Engineer will conduct a full review of each Change Proposal and, within 30 days after such receipt of the Contractor's supporting data, either approve the Change Proposal in whole, deny it in whole, or approve it in part and deny it in part. Such actions must be in writing, with a copy provided to Owner and Contractor. If Engineer does not take action on the Change

Proposal within 30 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of Engineer's inaction the Change Proposal is deemed denied, thereby commencing the time for appeal of the denial under Article 12.

5. *Binding Decision*: Engineer's decision is final and binding upon Owner and Contractor, unless Owner or Contractor appeals the decision by filing a Claim under Article 12.
- C. *Resolution of Certain Change Proposals*: If the Change Proposal does not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters, then Engineer will notify the parties in writing that the Engineer is unable to resolve the Change Proposal. For purposes of further resolution of such a Change Proposal, such notice will be deemed a denial, and Contractor may choose to seek resolution under the terms of Article 12.
- D. *Post-Completion*: Contractor shall not submit any Change Proposals after Engineer issues a written recommendation of final payment pursuant to Paragraph 15.06.B.

11.10 *Notification to Surety*

- A. If the provisions of any bond require notice to be given to a surety of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times), the giving of any such notice will be Contractor's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

ARTICLE 12—CLAIMS

12.01 *Claims*

- A. *Claims Process*: The following disputes between Owner and Contractor are subject to the Claims process set forth in this article:
 1. Appeals by Owner or Contractor of Engineer's decisions regarding Change Proposals;
 2. Owner demands for adjustments in the Contract Price or Contract Times, or other relief under the Contract Documents;
 3. Disputes that Engineer has been unable to address because they do not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters; and
 4. Subject to the waiver provisions of Paragraph 15.07, any dispute arising after Engineer has issued a written recommendation of final payment pursuant to Paragraph 15.06.B.
- B. *Submittal of Claim*: The party submitting a Claim shall deliver it directly to the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto; in the case of appeals regarding Change Proposals within 30 days of the decision under appeal. The party submitting the Claim shall also furnish a copy to the Engineer, for its information only. The responsibility to substantiate a Claim rests with the party making the Claim. In the case of a Claim by Contractor seeking an increase in the Contract Times or Contract Price, Contractor shall certify that the Claim is made in good faith, that the supporting data are accurate and complete, and that to the best of Contractor's knowledge

and belief the amount of time or money requested accurately reflects the full amount to which Contractor is entitled.

- C. *Review and Resolution*: The party receiving a Claim shall review it thoroughly, giving full consideration to its merits. The two parties shall seek to resolve the Claim through the exchange of information and direct negotiations. The parties may extend the time for resolving the Claim by mutual agreement. All actions taken on a Claim will be stated in writing and submitted to the other party, with a copy to Engineer.
- D. *Mediation*
 - 1. At any time after initiation of a Claim, Owner and Contractor may mutually agree to mediation of the underlying dispute. The agreement to mediate will stay the Claim submittal and response process.
 - 2. If Owner and Contractor agree to mediation, then after 60 days from such agreement, either Owner or Contractor may unilaterally terminate the mediation process, and the Claim submittal and decision process will resume as of the date of the termination. If the mediation proceeds but is unsuccessful in resolving the dispute, the Claim submittal and decision process will resume as of the date of the conclusion of the mediation, as determined by the mediator.
 - 3. Owner and Contractor shall each pay one-half of the mediator's fees and costs.
- E. *Partial Approval*: If the party receiving a Claim approves the Claim in part and denies it in part, such action will be final and binding unless within 30 days of such action the other party invokes the procedure set forth in Article 17 for final resolution of disputes.
- F. *Denial of Claim*: If efforts to resolve a Claim are not successful, the party receiving the Claim may deny it by giving written notice of denial to the other party. If the receiving party does not take action on the Claim within 90 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of the inaction, the Claim is deemed denied, thereby commencing the time for appeal of the denial. A denial of the Claim will be final and binding unless within 30 days of the denial the other party invokes the procedure set forth in Article 17 for the final resolution of disputes.
- G. *Final and Binding Results*: If the parties reach a mutual agreement regarding a Claim, whether through approval of the Claim, direct negotiations, mediation, or otherwise; or if a Claim is approved in part and denied in part, or denied in full, and such actions become final and binding; then the results of the agreement or action on the Claim will be incorporated in a Change Order or other written document to the extent they affect the Contract, including the Work, the Contract Times, or the Contract Price.

ARTICLE 13—COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

13.01 *Cost of the Work*

- A. *Purposes for Determination of Cost of the Work*: The term Cost of the Work means the sum of all costs necessary for the proper performance of the Work at issue, as further defined below. The provisions of this Paragraph 13.01 are used for two distinct purposes:
 - 1. To determine Cost of the Work when Cost of the Work is a component of the Contract Price, under cost-plus-fee, time-and-materials, or other cost-based terms; or

2. When needed to determine the value of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price. When the value of any such adjustment is determined on the basis of Cost of the Work, Contractor is entitled only to those additional or incremental costs required because of the change in the Work or because of the event giving rise to the adjustment.
- B. *Costs Included:* Except as otherwise may be agreed to in writing by Owner, costs included in the Cost of the Work will be in amounts no higher than those commonly incurred in the locality of the Project, will not include any of the costs itemized in Paragraph 13.01.C, and will include only the following items:
1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor in advance of the subject Work. Such employees include, without limitation, superintendents, foremen, safety managers, safety representatives, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work will be apportioned on the basis of their time spent on the Work. Payroll costs include, but are not limited to, salaries and wages plus the cost of fringe benefits, which include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, sick leave, and vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, will be included in the above to the extent authorized by Owner.
 2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts will accrue to Owner. All trade discounts, rebates, and refunds and returns from sale of surplus materials and equipment will accrue to Owner, and Contractor shall make provisions so that they may be obtained.
 3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, which will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee will be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 13.01.
 4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed or retained for services specifically related to the Work.
 5. Other costs consisting of the following:
 - a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.
 - b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, which are

consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.

- 1) In establishing included costs for materials such as scaffolding, plating, or sheeting, consideration will be given to the actual or the estimated life of the material for use on other projects; or rental rates may be established on the basis of purchase or salvage value of such items, whichever is less. Contractor will not be eligible for compensation for such items in an amount that exceeds the purchase cost of such item.

c. *Construction Equipment Rental*

- 1) Rentals of all construction equipment and machinery, and the parts thereof, in accordance with rental agreements approved by Owner as to price (including any surcharge or special rates applicable to overtime use of the construction equipment or machinery), and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs will be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts must cease when the use thereof is no longer necessary for the Work.
 - 2) Costs for equipment and machinery owned by Contractor or a Contractor-related entity will be paid at a rate shown for such equipment in the equipment rental rate book specified in the Supplementary Conditions. An hourly rate will be computed by dividing the monthly rates by 176. These computed rates will include all operating costs.
 - 3) With respect to Work that is the result of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price ("changed Work"), included costs will be based on the time the equipment or machinery is in use on the changed Work and the costs of transportation, loading, unloading, assembly, dismantling, and removal when directly attributable to the changed Work. The cost of any such equipment or machinery, or parts thereof, must cease to accrue when the use thereof is no longer necessary for the changed Work.
- d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as imposed by Laws and Regulations.
 - e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.
 - f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of builder's risk or other property insurance established in accordance with Paragraph 6.04), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses will be included in the Cost of the Work for the purpose of determining Contractor's fee.

- g. The cost of utilities, fuel, and sanitary facilities at the Site.
 - h. Minor expenses such as communication service at the Site, express and courier services, and similar petty cash items in connection with the Work.
 - i. The costs of premiums for all bonds and insurance that Contractor is required by the Contract Documents to purchase and maintain.
- C. *Costs Excluded:* The term Cost of the Work does not include any of the following items:
- 1. Payroll costs and other compensation of Contractor's officers, executives, principals, general managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 13.01.B.1 or specifically covered by Paragraph 13.01.B.4. The payroll costs and other compensation excluded here are to be considered administrative costs covered by the Contractor's fee.
 - 2. The cost of purchasing, renting, or furnishing small tools and hand tools.
 - 3. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.
 - 4. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.
 - 5. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.
 - 6. Expenses incurred in preparing and advancing Claims.
 - 7. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraph 13.01.B.
- D. *Contractor's Fee*
- 1. When the Work as a whole is performed on the basis of cost-plus-a-fee, then:
 - a. Contractor's fee for the Work set forth in the Contract Documents as of the Effective Date of the Contract will be determined as set forth in the Agreement.
 - b. for any Work covered by a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price on the basis of Cost of the Work, Contractor's fee will be determined as follows:
 - 1) When the fee for the Work as a whole is a percentage of the Cost of the Work, the fee will automatically adjust as the Cost of the Work changes.
 - 2) When the fee for the Work as a whole is a fixed fee, the fee for any additions or deletions will be determined in accordance with Paragraph 11.07.C.2.
 - 2. When the Work as a whole is performed on the basis of a stipulated sum, or any other basis other than cost-plus-a-fee, then Contractor's fee for any Work covered by a Change

Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price on the basis of Cost of the Work will be determined in accordance with Paragraph 11.07.C.2.

- E. *Documentation and Audit:* Whenever the Cost of the Work for any purpose is to be determined pursuant to this Article 13, Contractor and pertinent Subcontractors will establish and maintain records of the costs in accordance with generally accepted accounting practices. Subject to prior written notice, Owner will be afforded reasonable access, during normal business hours, to all Contractor's accounts, records, books, correspondence, instructions, drawings, receipts, vouchers, memoranda, and similar data relating to the Cost of the Work and Contractor's fee. Contractor shall preserve all such documents for a period of three years after the final payment by Owner. Pertinent Subcontractors will afford such access to Owner, and preserve such documents, to the same extent required of Contractor.

13.02 Allowances

- A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.
- B. *Cash Allowances:* Contractor agrees that:
1. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and
 2. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment for any of the foregoing will be valid.
- C. *Owner's Contingency Allowance:* Contractor agrees that an Owner's contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.
- D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor for Work covered by allowances, and the Contract Price will be correspondingly adjusted.

13.03 Unit Price Work

- A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.
- B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Payments to Contractor for Unit Price Work will be based on actual quantities.
- C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.
- D. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision

thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, and the final adjustment of Contract Price will be set forth in a Change Order, subject to the provisions of the following paragraph.

E. *Adjustments in Unit Price*

1. Contractor or Owner shall be entitled to an adjustment in the unit price with respect to an item of Unit Price Work if:
 - a. the quantity of the item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and
 - b. Contractor's unit costs to perform the item of Unit Price Work have changed materially and significantly as a result of the quantity change.
2. The adjustment in unit price will account for and be coordinated with any related changes in quantities of other items of Work, and in Contractor's costs to perform such other Work, such that the resulting overall change in Contract Price is equitable to Owner and Contractor.
3. Adjusted unit prices will apply to all units of that item.

ARTICLE 14—TESTS AND INSPECTIONS; CORRECTION, REMOVAL, OR ACCEPTANCE OF DEFECTIVE WORK

14.01 *Access to Work*

- A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and authorities having jurisdiction have access to the Site and the Work at reasonable times for their observation, inspection, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's safety procedures and programs so that they may comply with such procedures and programs as applicable.

14.02 *Tests, Inspections, and Approvals*

- A. Contractor shall give Engineer timely notice of readiness of the Work (or specific parts thereof) for all required inspections and tests, and shall cooperate with inspection and testing personnel to facilitate required inspections and tests.
- B. Owner shall retain and pay for the services of an independent inspector, testing laboratory, or other qualified individual or entity to perform all inspections and tests expressly required by the Contract Documents to be furnished and paid for by Owner, except that costs incurred in connection with tests or inspections of covered Work will be governed by the provisions of Paragraph 14.05.
- C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.

- D. Contractor shall be responsible for arranging, obtaining, and paying for all inspections and tests required:
1. by the Contract Documents, unless the Contract Documents expressly allocate responsibility for a specific inspection or test to Owner;
 2. to attain Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work;
 3. by manufacturers of equipment furnished under the Contract Documents;
 4. for testing, adjusting, and balancing of mechanical, electrical, and other equipment to be incorporated into the Work; and
 5. for acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work.

Such inspections and tests will be performed by independent inspectors, testing laboratories, or other qualified individuals or entities acceptable to Owner and Engineer.

- E. If the Contract Documents require the Work (or part thereof) to be approved by Owner, Engineer, or another designated individual or entity, then Contractor shall assume full responsibility for arranging and obtaining such approvals.
- F. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation. Such uncovering will be at Contractor's expense unless Contractor had given Engineer timely notice of Contractor's intention to cover the same and Engineer had not acted with reasonable promptness in response to such notice.

14.03 Defective Work

- A. *Contractor's Obligation:* It is Contractor's obligation to assure that the Work is not defective.
- B. *Engineer's Authority:* Engineer has the authority to determine whether Work is defective, and to reject defective Work.
- C. *Notice of Defects:* Prompt written notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor.
- D. *Correction, or Removal and Replacement:* Promptly after receipt of written notice of defective Work, Contractor shall correct all such defective Work, whether or not fabricated, installed, or completed, or, if Engineer has rejected the defective Work, remove it from the Project and replace it with Work that is not defective.
- E. *Preservation of Warranties:* When correcting defective Work, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.
- F. *Costs and Damages:* In addition to its correction, removal, and replacement obligations with respect to defective Work, Contractor shall pay all claims, costs, losses, and damages arising out of or relating to defective Work, including but not limited to the cost of the inspection, testing, correction, removal, replacement, or reconstruction of such defective Work, fines levied against Owner by governmental authorities because the Work is defective, and the costs of repair or replacement of work of others resulting from defective Work. Prior to final payment, if Owner and Contractor are unable to agree as to the measure of such claims, costs,

losses, and damages resulting from defective Work, then Owner may impose a reasonable set-off against payments due under Article 15.

14.04 *Acceptance of Defective Work*

- A. If, instead of requiring correction or removal and replacement of defective Work, Owner prefers to accept it, Owner may do so (subject, if such acceptance occurs prior to final payment, to Engineer's confirmation that such acceptance is in general accord with the design intent and applicable engineering principles, and will not endanger public safety). Contractor shall pay all claims, costs, losses, and damages attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness), and for the diminished value of the Work to the extent not otherwise paid by Contractor. If any such acceptance occurs prior to final payment, the necessary revisions in the Contract Documents with respect to the Work will be incorporated in a Change Order. If the parties are unable to agree as to the decrease in the Contract Price, reflecting the diminished value of Work so accepted, then Owner may impose a reasonable set-off against payments due under Article 15. If the acceptance of defective Work occurs after final payment, Contractor shall pay an appropriate amount to Owner.

14.05 *Uncovering Work*

- A. Engineer has the authority to require additional inspection or testing of the Work, whether or not the Work is fabricated, installed, or completed.
- B. If any Work is covered contrary to the written request of Engineer, then Contractor shall, if requested by Engineer, uncover such Work for Engineer's observation, and then replace the covering, all at Contractor's expense.
- C. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, then Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, and provide all necessary labor, material, and equipment.
 - 1. If it is found that the uncovered Work is defective, Contractor shall be responsible for all claims, costs, losses, and damages arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and pending Contractor's full discharge of this responsibility the Owner shall be entitled to impose a reasonable set-off against payments due under Article 15.
 - 2. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, then Contractor may submit a Change Proposal within 30 days of the determination that the Work is not defective.

14.06 *Owner May Stop the Work*

- A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, then Owner may order Contractor to stop the Work,

or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work will not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

14.07 Owner May Correct Defective Work

- A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work, or to remove and replace defective Work as required by Engineer, then Owner may, after 7 days' written notice to Contractor, correct or remedy any such deficiency.
- B. In exercising the rights and remedies under this Paragraph 14.07, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this paragraph.
- C. All claims, costs, losses, and damages incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 14.07 will be charged against Contractor as set-offs against payments due under Article 15. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.
- D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 14.07.

ARTICLE 15—PAYMENTS TO CONTRACTOR; SET-OFFS; COMPLETION; CORRECTION PERIOD

15.01 Progress Payments

- A. *Basis for Progress Payments:* The Schedule of Values established as provided in Article 2 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments for Unit Price Work will be based on the number of units completed during the pay period, as determined under the provisions of Paragraph 13.03. Progress payments for cost-based Work will be based on Cost of the Work completed by Contractor during the pay period.
- B. *Applications for Payments*
 - 1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents.
 - 2. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment must also be accompanied by: (a) a bill of sale, invoice, copies of subcontract or purchase order payments, or other documentation

establishing full payment by Contractor for the materials and equipment; (b) at Owner's request, documentation warranting that Owner has received the materials and equipment free and clear of all Liens; and (c) evidence that the materials and equipment are covered by appropriate property insurance, a warehouse bond, or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.

3. Beginning with the second Application for Payment, each Application must include an affidavit of Contractor stating that all previous progress payments received by Contractor have been applied to discharge Contractor's legitimate obligations associated with prior Applications for Payment.
4. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

C. Review of Applications

1. Engineer will, within 10 days after receipt of each Application for Payment, including each resubmittal, either indicate in writing a recommendation of payment and present the Application to Owner, or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.
2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations of the executed Work as an experienced and qualified design professional, and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:
 - a. the Work has progressed to the point indicated;
 - b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 13.03, and any other qualifications stated in the recommendation); and
 - c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.
3. By recommending any such payment Engineer will not thereby be deemed to have represented that:
 - a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract; or
 - b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.

4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:
 - a. to supervise, direct, or control the Work;
 - b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto;
 - c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work;
 - d. to make any examination to ascertain how or for what purposes Contractor has used the money paid by Owner; or
 - e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.
5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 15.01.C.2.
6. Engineer will recommend reductions in payment (set-offs) necessary in Engineer's opinion to protect Owner from loss because:
 - a. the Work is defective, requiring correction or replacement;
 - b. the Contract Price has been reduced by Change Orders;
 - c. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
 - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible; or
 - e. Engineer has actual knowledge of the occurrence of any of the events that would constitute a default by Contractor and therefore justify termination for cause under the Contract Documents.

D. *Payment Becomes Due*

1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended (subject to any Owner set-offs) will become due, and when due will be paid by Owner to Contractor.

E. *Reductions in Payment by Owner*

1. In addition to any reductions in payment (set-offs) recommended by Engineer, Owner is entitled to impose a set-off against payment based on any of the following:
 - a. Claims have been made against Owner based on Contractor's conduct in the performance or furnishing of the Work, or Owner has incurred costs, losses, or damages resulting from Contractor's conduct in the performance or furnishing of the Work, including but not limited to claims, costs, losses, or damages from workplace injuries, adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;

- b. Contractor has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Site;
 - c. Contractor has failed to provide and maintain required bonds or insurance;
 - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible;
 - e. Owner has incurred extra charges or engineering costs related to submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;
 - f. The Work is defective, requiring correction or replacement;
 - g. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
 - h. The Contract Price has been reduced by Change Orders;
 - i. An event has occurred that would constitute a default by Contractor and therefore justify a termination for cause;
 - j. Liquidated or other damages have accrued as a result of Contractor's failure to achieve Milestones, Substantial Completion, or final completion of the Work;
 - k. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens; or
 - l. Other items entitle Owner to a set-off against the amount recommended.
2. If Owner imposes any set-off against payment, whether based on its own knowledge or on the written recommendations of Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and the specific amount of the reduction, and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, if Contractor remedies the reasons for such action. The reduction imposed will be binding on Contractor unless it duly submits a Change Proposal contesting the reduction.
 3. Upon a subsequent determination that Owner's refusal of payment was not justified, the amount wrongfully withheld will be treated as an amount due as determined by Paragraph 15.01.D.1 and subject to interest as provided in the Agreement.

15.02 *Contractor's Warranty of Title*

- A. Contractor warrants and guarantees that title to all Work, materials, and equipment furnished under the Contract will pass to Owner free and clear of (1) all Liens and other title defects, and (2) all patent, licensing, copyright, or royalty obligations, no later than 7 days after the time of payment by Owner.

15.03 *Substantial Completion*

- A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete and request that Engineer issue a certificate of Substantial Completion. Contractor shall at the same time

submit to Owner and Engineer an initial draft of punch list items to be completed or corrected before final payment.

- B. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.
- C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a preliminary certificate of Substantial Completion which will fix the date of Substantial Completion. Engineer shall attach to the certificate a punch list of items to be completed or corrected before final payment. Owner shall have 7 days after receipt of the preliminary certificate during which to make written objection to Engineer as to any provisions of the certificate or attached punch list. If, after considering the objections to the provisions of the preliminary certificate, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the preliminary certificate to Owner, notify Contractor in writing that the Work is not substantially complete, stating the reasons therefor. If Owner does not object to the provisions of the certificate, or if despite consideration of Owner's objections Engineer concludes that the Work is substantially complete, then Engineer will, within said 14 days, execute and deliver to Owner and Contractor a final certificate of Substantial Completion (with a revised punch list of items to be completed or corrected) reflecting such changes from the preliminary certificate as Engineer believes justified after consideration of any objections from Owner.
- D. At the time of receipt of the preliminary certificate of Substantial Completion, Owner and Contractor will confer regarding Owner's use or occupancy of the Work following Substantial Completion, review the builder's risk insurance policy with respect to the end of the builder's risk coverage, and confirm the transition to coverage of the Work under a permanent property insurance policy held by Owner. Unless Owner and Contractor agree otherwise in writing, Owner shall bear responsibility for security, operation, protection of the Work, property insurance, maintenance, heat, and utilities upon Owner's use or occupancy of the Work.
- E. After Substantial Completion the Contractor shall promptly begin work on the punch list of items to be completed or corrected prior to final payment. In appropriate cases Contractor may submit monthly Applications for Payment for completed punch list items, following the progress payment procedures set forth above.
- F. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the punch list.

15.04 *Partial Use or Occupancy*

- A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without

significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions:

1. At any time, Owner may request in writing that Contractor permit Owner to use or occupy any such part of the Work that Owner believes to be substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 15.03.A through 15.03.E for that part of the Work.
2. At any time, Contractor may notify Owner and Engineer in writing that Contractor considers any such part of the Work substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.
3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 15.03 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.
4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 6.04 regarding builder's risk or other property insurance.

15.05 *Final Inspection*

- A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work, or agreed portion thereof, is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

15.06 *Final Payment*

A. *Application for Payment*

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of inspection, annotated record documents (as provided in Paragraph 7.12), and other documents, Contractor may make application for final payment.
2. The final Application for Payment must be accompanied (except as previously delivered) by:
 - a. all documentation called for in the Contract Documents;
 - b. consent of the surety, if any, to final payment;
 - c. satisfactory evidence that all title issues have been resolved such that title to all Work, materials, and equipment has passed to Owner free and clear of any Liens or other title defects, or will so pass upon final payment.

- d. a list of all duly pending Change Proposals and Claims; and
 - e. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of the Work, and of Liens filed in connection with the Work.
- 3. In lieu of the releases or waivers of Liens specified in Paragraph 15.06.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (a) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (b) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in liens or other burdens on Owner's property, have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien, or Owner at its option may issue joint checks payable to Contractor and specified Subcontractors and Suppliers.
- B. *Engineer's Review of Final Application and Recommendation of Payment:* If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract have been fulfilled, Engineer will, within 10 days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of final payment and present the final Application for Payment to Owner for payment. Such recommendation will account for any set-offs against payment that are necessary in Engineer's opinion to protect Owner from loss for the reasons stated above with respect to progress payments. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.
- C. *Notice of Acceptability:* In support of its recommendation of payment of the final Application for Payment, Engineer will also give written notice to Owner and Contractor that the Work is acceptable, subject to stated limitations in the notice and to the provisions of Paragraph 15.07.
- D. *Completion of Work:* The Work is complete (subject to surviving obligations) when it is ready for final payment as established by the Engineer's written recommendation of final payment and issuance of notice of the acceptability of the Work.
- E. *Final Payment Becomes Due:* Upon receipt from Engineer of the final Application for Payment and accompanying documentation, Owner shall set off against the amount recommended by Engineer for final payment any further sum to which Owner is entitled, including but not limited to set-offs for liquidated damages and set-offs allowed under the provisions of this Contract with respect to progress payments. Owner shall pay the resulting balance due to Contractor within 30 days of Owner's receipt of the final Application for Payment from Engineer.

15.07 *Waiver of Claims*

- A. By making final payment, Owner waives its claim or right to liquidated damages or other damages for late completion by Contractor, except as set forth in an outstanding Claim,

appeal under the provisions of Article 17, set-off, or express reservation of rights by Owner. Owner reserves all other claims or rights after final payment.

- B. The acceptance of final payment by Contractor will constitute a waiver by Contractor of all claims and rights against Owner other than those pending matters that have been duly submitted as a Claim, or appealed under the provisions of Article 17.

15.08 *Correction Period*

- A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the Supplementary Conditions or the terms of any applicable special guarantee required by the Contract Documents), Owner gives Contractor written notice that any Work has been found to be defective, or that Contractor's repair of any damages to the Site or adjacent areas has been found to be defective, then after receipt of such notice of defect Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:
 - 1. correct the defective repairs to the Site or such adjacent areas;
 - 2. correct such defective Work;
 - 3. remove the defective Work from the Project and replace it with Work that is not defective, if the defective Work has been rejected by Owner, and
 - 4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others, or to other land or areas resulting from the corrective measures.
- B. Owner shall give any such notice of defect within 60 days of the discovery that such Work or repairs is defective. If such notice is given within such 60 days but after the end of the correction period, the notice will be deemed a notice of defective Work under Paragraph 7.17.B.
- C. If, after receipt of a notice of defect within 60 days and within the correction period, Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. Contractor shall pay all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others). Contractor's failure to pay such costs, losses, and damages within 10 days of invoice from Owner will be deemed the start of an event giving rise to a Claim under Paragraph 12.01.B, such that any related Claim must be brought within 30 days of the failure to pay.
- D. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.
- E. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this paragraph, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

- F. Contractor's obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph are not to be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

ARTICLE 16—SUSPENSION OF WORK AND TERMINATION

16.01 *Owner May Suspend Work*

- A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by written notice to Contractor and Engineer. Such notice will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be entitled to an adjustment in the Contract Price or an extension of the Contract Times directly attributable to any such suspension. Any Change Proposal seeking such adjustments must be submitted no later than 30 days after the date fixed for resumption of Work.

16.02 *Owner May Terminate for Cause*

- A. The occurrence of any one or more of the following events will constitute a default by Contractor and justify termination for cause:
 - 1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment, or failure to adhere to the Progress Schedule);
 - 2. Failure of Contractor to perform or otherwise to comply with a material term of the Contract Documents;
 - 3. Contractor's disregard of Laws or Regulations of any public body having jurisdiction; or
 - 4. Contractor's repeated disregard of the authority of Owner or Engineer.
- B. If one or more of the events identified in Paragraph 16.02.A occurs, then after giving Contractor (and any surety) 10 days' written notice that Owner is considering a declaration that Contractor is in default and termination of the Contract, Owner may proceed to:
 - 1. declare Contractor to be in default, and give Contractor (and any surety) written notice that the Contract is terminated; and
 - 2. enforce the rights available to Owner under any applicable performance bond.
- C. Subject to the terms and operation of any applicable performance bond, if Owner has terminated the Contract for cause, Owner may exclude Contractor from the Site, take possession of the Work, incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and complete the Work as Owner may deem expedient.
- D. Owner may not proceed with termination of the Contract under Paragraph 16.02.B if Contractor within 7 days of receipt of notice of intent to terminate begins to correct its failure to perform and proceeds diligently to cure such failure.
- E. If Owner proceeds as provided in Paragraph 16.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds the cost to complete the Work, including all related claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects,

attorneys, and other professionals) sustained by Owner, such excess will be paid to Contractor. If the cost to complete the Work including such related claims, costs, losses, and damages exceeds such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this paragraph, Owner shall not be required to obtain the lowest price for the Work performed.

- F. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue, or any rights or remedies of Owner against Contractor or any surety under any payment bond or performance bond. Any retention or payment of money due Contractor by Owner will not release Contractor from liability.
- G. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 6.01.A, the provisions of that bond will govern over any inconsistent provisions of Paragraphs 16.02.B and 16.02.D.

16.03 *Owner May Terminate for Convenience*

- A. Upon 7 days' written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):
 - 1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;
 - 2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses; and
 - 3. other reasonable expenses directly attributable to termination, including costs incurred to prepare a termination for convenience cost proposal.
- B. Contractor shall not be paid for any loss of anticipated profits or revenue, post-termination overhead costs, or other economic loss arising out of or resulting from such termination.

16.04 *Contractor May Stop Work or Terminate*

- A. If, through no act or fault of Contractor, (1) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (2) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (3) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon 7 days' written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the contract and recover from Owner payment on the same terms as provided in Paragraph 16.03.
- B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, 7 days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The

provisions of this paragraph are not intended to preclude Contractor from submitting a Change Proposal for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this paragraph.

ARTICLE 17—FINAL RESOLUTION OF DISPUTES

17.01 *Methods and Procedures*

- A. *Disputes Subject to Final Resolution:* The following disputed matters are subject to final resolution under the provisions of this article:
 - 1. A timely appeal of an approval in part and denial in part of a Claim, or of a denial in full, pursuant to Article 12; and
 - 2. Disputes between Owner and Contractor concerning the Work, or obligations under the Contract Documents, that arise after final payment has been made.
- B. *Final Resolution of Disputes:* For any dispute subject to resolution under this article, Owner or Contractor may:
 - 1. elect in writing to invoke the dispute resolution process provided for in the Supplementary Conditions;
 - 2. agree with the other party to submit the dispute to another dispute resolution process; or
 - 3. if no dispute resolution process is provided for in the Supplementary Conditions or mutually agreed to, give written notice to the other party of the intent to submit the dispute to a court of competent jurisdiction.

ARTICLE 18—MISCELLANEOUS

18.01 *Giving Notice*

- A. Whenever any provision of the Contract requires the giving of written notice to Owner, Engineer, or Contractor, it will be deemed to have been validly given only if delivered:
 - 1. in person, by a commercial courier service or otherwise, to the recipient's place of business;
 - 2. by registered or certified mail, postage prepaid, to the recipient's place of business; or
 - 3. by e-mail to the recipient, with the words "Formal Notice" or similar in the e-mail's subject line.

18.02 *Computation of Times*

- A. When any period of time is referred to in the Contract by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

18.03 *Cumulative Remedies*

- A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract. The provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

18.04 *Limitation of Damages*

- A. With respect to any and all Change Proposals, Claims, disputes subject to final resolution, and other matters at issue, neither Owner nor Engineer, nor any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, shall be liable to Contractor for any claims, costs, losses, or damages sustained by Contractor on or in connection with any other project or anticipated project.

18.05 *No Waiver*

- A. A party's non-enforcement of any provision will not constitute a waiver of that provision, nor will it affect the enforceability of that provision or of the remainder of this Contract.

18.06 *Survival of Obligations*

- A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract, as well as all continuing obligations indicated in the Contract, will survive final payment, completion, and acceptance of the Work or termination of the Contract or of the services of Contractor.

18.07 *Controlling Law*

- A. This Contract is to be governed by the law of the state in which the Project is located.

18.08 *Assignment of Contract*

- A. Unless expressly agreed to elsewhere in the Contract, no assignment by a party to this Contract of any rights under or interests in the Contract will be binding on the other party without the written consent of the party sought to be bound; and, specifically but without limitation, money that may become due and money that is due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract.

18.09 *Successors and Assigns*

- A. Owner and Contractor each binds itself, its successors, assigns, and legal representatives to the other party hereto, its successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

18.10 *Headings*

- A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

HR Green, Inc.
Project No. 2503420

Flow Equalization Improvements
Marshalltown, IA

SECTION 00800

SUPPLEMENTARY CONDITIONS OF THE CONSTRUCTION CONTRACT

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PROSUPPLEMENTARY CONDITIONS OF THE CONSTRUCTION CONTRACT

These Supplementary Conditions amend or supplement EJCDC® C-700, Standard General Conditions of the Construction Contract (2018). The General Conditions remain in full force and effect except as amended.

The terms used in these Supplementary Conditions have the meanings stated in the General Conditions. Additional terms used in these Supplementary Conditions have the meanings stated below, which are applicable to both the singular and plural thereof.

The address system used in these Supplementary Conditions is the same as the address system used in the General Conditions, with the prefix "SC" added—for example, "Paragraph SC-4.05."

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ARTICLE 1—ARTICLE 1--DEFINITIONS AND TERMINOLOGY

SC-1.01.A.41 – Add the following new paragraph immediately after Paragraph 1.01.A.41

In addition to the definition provided in the General Conditions, the following applies: Sufficient completion of the project or the portion thereof to permit utilization of the project, or portion thereof for its intended purpose. Substantial completion requires not only that the work be sufficiently completed to permit utilization, but that the Owner can effectively utilize the substantially completed Work. Determination of substantial completion is solely at the discretion of the Owner. Substantial completion does not mean complete in accordance with the Contract nor shall substantial completion of all or any part of the project entitle the Contractor to acceptance under the Contract.

SC-1.01.A.51 – Add the following new paragraphs immediately after Paragraph 1.01.A.50:

51. Conflict - A case where an item of Work is shown or specified differently in two or more places in the Contract Documents. An item of Work shown in one portion of the Contract Documents but not in another is not a Conflict.

52. Consultant - HR Green, Des Moines

53. Engineer - Joe Frankl, Project Manager, 5525 Merle Hay Road Suite 200, Johnston, IA 50131,
Phone: 515-278-2913.

ARTICLE 2—PRELIMINARY MATTERS

SC2.05.A.1 Delete Paragraphs 2.05.A.1 in its entirety and insert the following in its place:

The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. The Progress Schedule, in a detailed precedence-style critical path method (CPM) or Primavera type format satisfactory to the Owner, shall: (a) provide a graphic representation of all activities and events that will occur during the performance of the Work; (b) identify each phase of construction and occupancy; and (c) set forth milestone dates that are significant to ensure the timely and orderly completion of the Work in accordance with the requirements of the Contract Documents. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work, nor interfere with or relieve Contractor from Contractor's full responsibility therefore.

ARTICLE 3—CONTRACT DOCUMENTS: INTENT, REQUIREMENTS, REUSE

No Supplementary Conditions for this Article.

ARTICLE 4—COMMENCEMENT AND PROGRESS OF THE WORK

SC-4.01.A – Delete the last sentence of paragraph.

EJCDC® C-800, Supplementary Conditions of the Construction Contract.
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ARTICLE 5—SITE, SUBSURFACE AND PHYSICAL CONDITIONS, HAZARDOUS ENVIRONMENTAL CONDITIONS

5.03 Subsurface and Physical Conditions

SC-5.03 Add the following new paragraphs immediately after Paragraph 5.03.D:

- E. The following table lists the reports of explorations and tests of subsurface conditions at or adjacent to the Site that contain Technical Data, and specifically identifies the Technical Data in the report upon which Contractor may rely:

Report Title	Date of Report	Technical Data
Marshalltown Flow Equalization Basin	March 13, 2026	Geotechnical Engineering Report

- F. The following table lists the drawings of existing physical conditions at or adjacent to the Site, including those drawings depicting existing surface or subsurface structures at or adjacent to the Site (except Underground Facilities), that contain Technical Data, and specifically identifies the Technical Data upon which Contractor may rely:

Drawings Title	Date of Drawings	Technical Data
Waste Treatment Plant Improvements	1986	Background Drawings
Phase II and III Improvements	1989	Background Drawings
Biosolids Improvements	2002	Background Drawings

- G. Contractor may examine copies of reports and drawings identified in SC-5.03.E and SC-5.03.F that were not included with the Bidding Documents at the Owner's office during regular business hours, or may request copies from Engineer.

5.06 Hazardous Environmental Conditions

SC-5.06 Add the following new paragraphs immediately after Paragraph 5.06.A.3:

4. The following table lists the reports known to Owner relating to Hazardous Environmental Conditions at or adjacent to the Site, and the Technical Data (if any) upon which Contractor may rely:

Report Title	Date of Report	Technical Data
None		

5. The following table lists the drawings known to Owner relating to Hazardous Environmental Conditions at or adjacent to the Site, and Technical Data (if any) contained in such Drawings upon which Contractor may rely:

Drawings Title	Date of Drawings	Technical Data
None		

ARTICLE 6—BONDS AND INSURANCE

6.01 *Performance, Payment, and Other Bonds*

SC-6.01 Add the following paragraphs immediately after Paragraph 6.01.A:

1. *Required Performance Bond Form:* The performance bond that Contractor furnishes will be in the forms substantially similar to EJCDC® C-610, Performance Bond (2018 edition).
2. *Required Payment Bond Form:* The payment bond that Contractor furnishes will be in the form substantially similar to EJCDC® C-615, Payment Bond (2018 edition).

SC-6.01 Add the following paragraphs immediately after Paragraph 6.01.B:

1. The correction period specified as one year after the date of Substantial Completion in Paragraph 15.08.A of the General Conditions is hereby revised to be **four (4)** years after Substantial Completion.
2. After Substantial Completion, Contractor shall furnish a warranty bond. The warranty bond must be in a bond amount of **15** percent of the final Contract Price. The warranty bond period will extend to a date **four (4)** years after Substantial Completion of the Work. Contractor shall deliver the fully executed warranty bond to Owner prior to or with the final application for payment, and in any event no later than 11 months after Substantial Completion.
3. The warranty bond must be issued by the same surety that issues the performance bond required under Paragraph 6.01.A of the General Conditions.

6.02 *Insurance—General Provisions*

SC-6.02 Add the following paragraph immediately after Paragraph 6.02.B:

1. Contractor may obtain worker's compensation insurance from an insurance company that has not been rated by A.M. Best, provided that such company (a) is domiciled in the state in which the Project is located, (b) is certified or authorized as a worker's compensation insurance provider by the appropriate state agency, and (c) has been accepted to provide worker's compensation insurance for similar projects by the state within the last 12 months.

6.03 *Contractor's Insurance*

SC-6.03 Supplement Paragraph 6.03 with the following provisions after Paragraph 6.03.C:

- E. *Workers' Compensation and Employer's Liability:* Contractor shall purchase and maintain workers' compensation and employer's liability insurance, including, as applicable, United States Longshoreman and Harbor Workers' Compensation Act, and Jones Act

Workers' Compensation and Related Policies	Policy limits of not less than:
Workers' Compensation	
State	Statutory
Applicable Federal (e.g., Longshoreman's)	Statutory
Jones Act (if applicable)	
Bodily injury by accident—each accident	\$1,000,000

Workers' Compensation and Related Policies	Policy limits of not less than:
Bodily injury by disease—aggregate	\$1,000,000
Employer's Liability	
Each accident	\$1,000,000
Each employee	\$1,000,000
Policy limit	\$1,000,000

- F. *Commercial General Liability—Claims Covered:* Contractor shall purchase and maintain commercial general liability insurance, covering all operations by or on behalf of Contractor, on an occurrence basis, against claims for:
1. damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees,
 2. damages insured by reasonably available personal injury liability coverage, and
 3. damages because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom.
- G. *Commercial General Liability—Form and Content:* Contractor's commercial liability policy must be written on a 1996 (or later) Insurance Services Organization, Inc. (ISO) commercial general liability form (occurrence form) and include the following coverages and endorsements:
1. Products and completed operations coverage.
 - a. Such insurance must be maintained for three years after final payment.
 - b. Contractor shall furnish Owner and each other additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract) evidence of continuation of such insurance at final payment and three years thereafter.
 2. Blanket contractual liability coverage, including but not limited to coverage of Contractor's contractual indemnity obligations in Paragraph 7.18.
 3. Severability of interests and no insured-versus-insured or cross-liability exclusions.
 4. Underground, explosion, and collapse coverage.
 5. Personal injury coverage.
 6. Additional insured endorsements that include both ongoing operations and products and completed operations coverage through ISO Endorsements CG 20 10 10 01 and CG 20 37 10 01 (together). If Contractor demonstrates to Owner that the specified ISO endorsements are not commercially available, then Contractor may satisfy this requirement by providing equivalent endorsements.
 7. For design professional additional insureds, ISO Endorsement CG 20 32 07 04 "Additional Insured—Engineers, Architects or Surveyors Not Engaged by the Named Insured" or its equivalent.

- H. *Commercial General Liability—Excluded Content:* The commercial general liability insurance policy, including its coverages, endorsements, and incorporated provisions, must not include any of the following:
1. Any modification of the standard definition of “insured contract” (except to delete the railroad protective liability exclusion if Contractor is required to indemnify a railroad or others with respect to Work within 50 feet of railroad property).
 2. Any exclusion for water intrusion or water damage.
 3. Any provisions resulting in the erosion of insurance limits by defense costs other than those already incorporated in ISO form CG 00 01.
 4. Any exclusion of coverage relating to earth subsidence or movement.
 5. Any exclusion for the insured’s vicarious liability, strict liability, or statutory liability (other than worker’s compensation).
 6. Any limitation or exclusion based on the nature of Contractor’s work.
 7. Any professional liability exclusion broader in effect than the most recent edition of ISO form CG 22 79.
- I. *Commercial General Liability—Minimum Policy Limits*

Commercial General Liability	Policy limits of not less than:
General Aggregate	\$2,000,000
Products—Completed Operations Aggregate	\$2,000,000
Personal and Advertising Injury	\$1,000,000
Bodily Injury and Property Damage—Each Occurrence	\$1,000,000

- J. *Automobile Liability:* Contractor shall purchase and maintain automobile liability insurance for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance, or use of any motor vehicle. The automobile liability policy must be written on an occurrence basis.

Automobile Liability	Policy limits of not less than:
Bodily Injury	
Each Person	\$1,000,000
Each Accident	\$1,000,000
Property Damage	
Each Accident	\$1,000,000
[or]	
Combined Single Limit	
Combined Single Limit (Bodily Injury and Property Damage)	\$2,000,000

- K. *Umbrella or Excess Liability:* Contractor shall purchase and maintain umbrella or excess liability insurance written over the underlying employer’s liability, commercial general

liability, and automobile liability insurance described in the Paragraphs above. The coverage afforded must be at least as broad as that of each and every one of the underlying policies.

Excess or Umbrella Liability	Policy limits of not less than:
Each Occurrence	\$2,000,000
General Aggregate	\$2,000,000

- L. *Using Umbrella or Excess Liability Insurance to Meet CGL and Other Policy Limit Requirements:* Contractor may meet the policy limits specified for employer's liability, commercial general liability, and automobile liability through the primary policies alone, or through combinations of the primary insurance policy's policy limits and partial attribution of the policy limits of an umbrella or excess liability policy that is at least as broad in coverage as that of the underlying policy, as specified herein. If such umbrella or excess liability policy was required under this Contract, at a specified minimum policy limit, such umbrella or excess policy must retain a minimum limit of \$2,000,000 after accounting for partial attribution of its limits to underlying policies, as allowed above.
- M. *Contractor's Pollution Liability Insurance:* Contractor shall purchase and maintain a policy covering third-party injury and property damage, including cleanup costs, as a result of pollution conditions arising from Contractor's operations and completed operations. This insurance must be maintained for no less than three years after final completion.

Contractor's Pollution Liability	Policy limits of not less than:
Each Occurrence/Claim	\$2,000,000
General Aggregate	\$2,000,000

- N. *Contractor's Professional Liability Insurance:* If Contractor will provide or furnish professional services under this *Contract*, through a delegation of professional design services or otherwise, then Contractor shall be responsible for purchasing and maintaining applicable professional liability insurance. This insurance must cover negligent acts, errors, or omissions in the performance of professional design or related services by the insured or others for whom the insured is legally liable. The insurance must be maintained throughout the duration of the Contract and for a minimum of two years after Substantial Completion. The retroactive date on the policy must pre-date the commencement of furnishing services on the Project.

Contractor's Professional Liability	Policy limits of not less than:
Each Claim	\$1,000,000
Annual Aggregate	\$1,000,000

6.04 *Builder's Risk and Other Property Insurance*

SC-6.04 Supplement Paragraph 6.04 of the General Conditions with the following provisions:

F. *Builder's Risk Requirements:* The builder's risk insurance must:

1. be written on a builder's risk "all risk" policy form that at a minimum includes insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment stored and in transit, and must not exclude the coverage of the following risks: fire; windstorm; hail; flood; earthquake, volcanic activity, and other earth movement; lightning; riot; civil commotion; terrorism; vehicle impact; aircraft; smoke; theft; vandalism and malicious mischief; mechanical breakdown, boiler explosion, and artificially generated electric current; collapse; explosion; debris removal; demolition occasioned by enforcement of Laws and Regulations; and water damage (other than that caused by flood).
 - a. Such policy will include an exception that results in coverage for ensuing losses from physical damage or loss with respect to any defective workmanship, methods, design, or materials exclusions.
 - b. If insurance against mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake, volcanic activity, and other earth movement; or flood, are not commercially available under builder's risk policies, by endorsement or otherwise, such insurance will be provided through other insurance policies acceptable to Owner and Contractor.
2. cover, as insured property, at least the following: (a) the Work and all materials, supplies, machinery, apparatus, equipment, fixtures, and other property of a similar nature that are to be incorporated into or used in the preparation, fabrication, construction, erection, or completion of the Work, including Owner-furnished or assigned property; (b) spare parts inventory required within the scope of the Contract; and (c) temporary works which are not intended to form part of the permanent constructed Work but which are intended to provide working access to the Site, or to the Work under construction, or which are intended to provide temporary support for the Work under construction, including scaffolding, form work, fences, shoring, falsework, and temporary structures.
3. cover expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of contractors, engineers, and architects).
4. extend to cover damage or loss to insured property while in temporary storage at the Site or in a storage location outside the Site (but not including property stored at the premises of a manufacturer or Supplier).
5. extend to cover damage or loss to insured property while in transit.
6. allow for the waiver of the insurer's subrogation rights, as set forth in this Contract.
7. allow for partial occupancy or use by Owner by endorsement, and without cancellation or lapse of coverage.
8. include performance/hot testing and start-up, if applicable.

9. be maintained in effect until the Work is complete, as set forth in Paragraph 15.06.D of the General Conditions, or until written confirmation of Owner's procurement of property insurance following Substantial Completion, whichever occurs first.
10. include as named insureds the Owner, Contractor, Subcontractors (of every tier), and any other individuals or entities required by this Contract to be insured under such builder's risk policy. For purposes of Paragraphs 6.04, 6.05, and 6.06 of the General Conditions, and this and all other corresponding Supplementary Conditions, the parties required to be insured will be referred to collectively as "insureds." In addition to Owner, Contractor, and Subcontractors of every tier, include as insureds the following:
 - a. City of Marshalltown
 - b. HR Green
11. include, in addition to the Contract Price amount, the value of the following equipment and materials to be installed by the Contractor but furnished by the Owner or third parties:
 - a. None

SC-6.04 Supplement Paragraph 6.04 of the General Conditions with the following provision:

- G. *Coverage for Completion Delays:* The builder's risk policy will include, for the benefit of Owner, loss of revenue and soft cost coverage for losses arising from delays in completion that result from covered physical losses or damage. Such coverage will include, without limitation, fixed expenses and debt service for a minimum of 12 months with a maximum deductible of 30 days, compensation for loss of net revenues, rental costs, and attorneys' fees and engineering or other consultants' fees, if not otherwise covered.

SC-6.04 Supplement Paragraph 6.04 of the General Conditions with the following provisions:

- H. *Builder's Risk and Other Property Insurance Deductibles:* The purchaser of any required builder's risk, installation floater, or other property insurance will be responsible for costs not covered because of the application of a policy deductible.
 1. The builder's risk policy (or if applicable the installation floater) will be subject to a deductible amount of no more than \$100,000 for direct physical loss in any one occurrence.

ARTICLE 7—CONTRACTOR'S RESPONSIBILITIES

7.02 Supervision and Superintendence

7.03 *Labor; Working Hours*

SC-7.03 Add the following new subparagraphs immediately after Paragraph 7.03.C:

1. Regular working hours will be **Monday through Friday, 8 a.m. – 4:30 p.m.**
2. Owner's legal holidays are [the first day of January, commonly known as New Year's Day; the third Monday in January, known as Martin Luther King Day; the third Monday in February, known as President's Day; the Friday before Easter Sunday known as Good Friday; the last Monday in May, known as Memorial Day; the Fourth day of July, known as Independence Day; the first Monday in September, known as Labor Day; the fourth

Thursday in November, known as Thanksgiving Day; the fourth Friday in November known as the day after Thanksgiving; and the twenty-fifth day in December, known as Christmas Day.

When an official holiday falls on Sunday, the following Monday shall be designated as a substitute holiday, and observed as an official holiday. When an official holiday falls on a Saturday, the preceding Friday shall be designated as a substitute holiday, and observed as an official holiday].

SC-7.03 Add the following new paragraph immediately after Paragraph 7.03.C:

- D. **[Contractor]** shall be responsible for the cost of any overtime pay or other expense incurred by the Owner for Engineer's services (including those of the Resident Project Representative, if any), Owner's representative, and construction observation services, occasioned by the performance of Work on Saturday, Sunday, any legal holiday, or as overtime on any regular work day. If Contractor is responsible but does not pay, or if the parties are unable to agree as to the amount owed, then Owner may impose a reasonable set-off against payments due under Article 15.

SC-7.07.B – Delete paragraph in its entirety and insert "Deleted".

SC-7.07A – Add the following to Paragraph 7.07.A

No later than 14 days prior to the commencement of the Work, the Contractor shall furnish the Owner, in writing, with (1) the name, trade, and subcontract amount of each Subcontractor and (2) the names of all persons or entities proposed as manufacturers of the products identified in the specifications (including those who are to furnish materials or equipment fabricated to a special design) and, where applicable, the name of the installing Subcontractor

SC-7.07M Add the following paragraph as 7.07.M:

- C. The Contractor or competent Superintendent must be on the Project when construction activities are taking place. The Superintendent shall supervise, direct, and control the contractor's operations, personnel, work and the Subcontractor's operations. The Contractor shall give the Owner and Engineer written notification of the name of the Superintendent. The Superintendent shall be employed by the General Contractor and shall be assigned to the project full-time. The Superintendent shall be incidental to mobilization. A copy of the Drawings and Specifications shall be available on the project site at all times.
- D. Contractor shall maintain a qualified and responsible person available 24 hours per day, seven days per week to respond to emergencies which may occur after hours. Contractor shall provide to Engineer the phone number and/or paging service of this individual.

7.10 Taxes

SC-7.10 Add a new paragraph immediately after Paragraph 7.10.A:

- A. Construction items and materials included in the Project are exempt from State of Iowa and Local Option Sales and Use Taxes. Contractor is responsible for obtaining the exemption on items included, as provided by law or for applying for reimbursement for such taxes paid. Contractor shall pay all other taxes required to be paid by Contractor in accordance with the

laws and regulations of the place of the Project that are applicable during the performance of the Work. Contractor shall NOT include Sales and Use Tax in Contractor's bid. For more information on this exemption, please review the State of Iowa's website: www.state.ia.us/tax/business/Contr-ExEnt-Index.html

SC-7.17 Add the following new paragraph 7.17.F immediately after Paragraph 7.17.G

F. Contractor represents and warrants to the Owner that Contractor

1. is experienced and skilled in the construction of structures and improvements of the type described in the Contract Documents and

2. has, by careful examination, satisfied itself as to and has taken into account

(a.) the nature, location and character of the project site, including, without limitation, the surface and subsurface (by review of available reports and information) condition of the land and all structures and obstructions thereon, both natural and man-made, and all surface and subsurface (to the extent reasonably identified by review of available reports and information) water conditions of the Project site and the surrounding area;

(b) the nature, location and character of the general area in which the Project site is located; and

(c) all other matters or things which, in the reasonable judgment of the Contractor, could in any manner affect the performance of the Work

ARTICLE 8—OTHER WORK AT THE SITE

No Supplemental Conditions for this Article.

ARTICLE 9—OWNER'S RESPONSIBILITIES

No Supplementary Conditions in this Article.

ARTICLE 10—ENGINEER'S STATUS DURING CONSTRUCTION

10.03 Resident Project Representative

SC-10.03 Add the following new paragraphs immediately after Paragraph 10.03.B:

C. HR Green will not provide a full-time/continuously present Resident Project Representative (RPR), but will have periodic on-site observation by the RPR. The RPR will be Engineer's representative at the Site. RPR's dealings in matters pertaining to the Work in general will be with Engineer and Contractor. RPR's dealings with Subcontractors will only be through or with the full knowledge or approval of Contractor. The RPR will:

1. *Conferences and Meetings:* Attend meetings with Contractor, such as preconstruction conferences, progress meetings, job conferences, and other Project-related meetings (but not including Contractor's safety meetings).

2. *Safety Compliance:* Comply with Site safety programs, as they apply to RPR, and if required to do so by such safety programs, receive safety training specifically related to RPR's own personal safety while at the Site.
 3. *Liaison*
 - a. Serve as Engineer's liaison with Contractor. Working principally through Contractor's authorized representative or designee, assist in providing information regarding the provisions and intent of the Contract Documents.
 - b. Assist Engineer in serving as Owner's liaison with Contractor when Contractor's operations affect Owner's on-Site operations.
 - c. Assist in obtaining from Owner additional details or information, when required for Contractor's proper execution of the Work.
 4. *Review of Work; Defective Work*
 - a. Conduct occasional on-site observations of the Work to assist Engineer in determining, to the extent set forth in Paragraph 10.02, if the Work is in general proceeding in accordance with the Contract Documents.
 - b. Observe whether any Work in place appears to be defective.
 - c. Observe whether any Work in place should be uncovered for observation, or requires special testing, inspection or approval.
 5. *Inspections and Tests*
 - a. Observe Contractor-arranged inspections required by Laws and Regulations, including but not limited to those performed by public or other agencies having jurisdiction over the Work.
 - b. Accompany visiting inspectors representing public or other agencies having jurisdiction over the Work.
 6. *Payment Requests:* Review Applications for Payment with Contractor.
 7. *Completion*
 - a. Participate in Engineer's visits regarding Substantial Completion.
 - b. Assist in the preparation of a punch list of items to be completed or corrected.
 - c. Participate in Engineer's visit to the Site in the company of Owner and Contractor regarding completion of the Work, and prepare a final punch list of items to be completed or corrected by Contractor.
 - d. Observe whether items on the final punch list have been completed or corrected.
- D. The RPR will not:
1. Authorize any deviation from the Contract Documents or substitution of materials or equipment (including "or-equal" items).
 2. Exceed limitations of Engineer's authority as set forth in the Contract Documents.
 3. Undertake any of the responsibilities of Contractor, Subcontractors, or Suppliers.

4. Advise on, issue directions relative to, or assume control over any aspect of the means, methods, techniques, sequences or procedures of construction.
5. Advise on, issue directions regarding, or assume control over security or safety practices, precautions, and programs in connection with the activities or operations of Owner or Contractor.
6. Participate in specialized field or laboratory tests or inspections conducted off-site by others except as specifically authorized by Engineer.
7. Authorize Owner to occupy the Project in whole or in part.

ARTICLE 11—CHANGES TO THE CONTRACT

No Supplementary Conditions in this Article.

ARTICLE 12—CLAIMS

No Supplementary Conditions in this Article.

ARTICLE 13—COST OF WORK; ALLOWANCES, UNIT PRICE WORK

13.01 *Cost of the Work*

SC-13.01 Supplement Paragraph 13.01.C.2 by adding the following definition of small tools and hand tools:

For purposes of this paragraph, “small tools and hand tools” means any tool or equipment whose current price if it were purchased new at retail would be less than \$500.

13.03 *Unit Price Work*

SC-13.03 Delete Paragraph 13.03.E in its entirety and insert the following in its place:

E. *Adjustments in Unit Price*

1. Contractor or Owner shall be entitled to an adjustment in the unit price with respect to an item of Unit Price Work if:
 - a. the extended price of a particular item of Unit Price Work amounts to 5 percent or more of the Contract Price (based on estimated quantities at the time of Contract formation) and the variation in the quantity of that particular item of Unit Price Work actually furnished or performed by Contractor differs by more than 10 percent from the estimated quantity of such item indicated in the Agreement; and
 - b. Contractor’s unit costs to perform the item of Unit Price Work have changed materially and significantly as a result of the quantity change.
2. The adjustment in unit price will account for and be coordinated with any related changes in quantities of other items of Work, and in Contractor’s costs to perform such other Work, such that the resulting overall change in Contract Price is equitable to Owner and Contractor.

3. Adjusted unit prices will apply to all units of that item.

ARTICLE 14—TESTS AND INSPECTIONS; CORRECTION, REMOVAL, OR ACCEPTANCE OF DEFECTIVE WORK

No suggested Supplementary Conditions in this Article.

ARTICLE 15—PAYMENTS TO CONTRACTOR, SET OFFS; COMPLETIONS; CORRECTION PERIOD

15.01 *Progress Payments*

SC-15.01.D.1 - Delete paragraph in its entirety and insert the following in its place:

1. Thirty days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended (subject to any Owner set-offs) will become due, and when due will be paid by Owner to Contractor.

SC-15.01 Add the following new Paragraph 15.01.F:

- F. For contracts in which the Contract Price is based on the Cost of Work, if Owner determines that progress payments made to date substantially exceed the actual progress of the Work (as measured by reference to the Schedule of Values), or present a potential conflict with the Guaranteed Maximum Price, then Owner may require that Contractor prepare and submit a plan for the remaining anticipated Applications for Payment that will bring payments and progress into closer alignment and take into account the Guaranteed Maximum Price (if any), through reductions in billings, increases in retainage, or other equitable measures. Owner will review the plan, discuss any necessary modifications, and implement the plan as modified for all remaining Applications for Payment.

15.03 *Substantial Completion*

SC-15.03 Add the following new subparagraph to Paragraph 15.03.B:

2. If some or all of the Work has been determined not to be at a point of Substantial Completion and will require re-inspection or re-testing by Engineer, the cost of such re-inspection or re-testing, including the cost of time, travel and living expenses, will be paid by Contractor to Owner. If Contractor does not pay, or the parties are unable to agree as to the amount owed, then Owner may impose a reasonable set-off against payments due under this Article 15.

SC-15.03.G Add the following paragraph to Paragraph 15.03

- G. Substantial Completion means that the project improvements are complete to the point that they have been put back on-line with complete automatic operation. In particular, to meet Substantial Completion, all equipment shall have successfully completed startup, testing, manufacturers field services and training; and instrumentation and controls must be installed and fully operational. Any temporary arrangements must be satisfactory to the Engineer.

To be considered substantially complete, the following portions of the Work must be operational and ready for Owner's continuous use as intended:

- Successful installation, commissioning, training, and completion of performance testing as described in the Contract Documents for flow equalization tank.
- Successful installation, commissioning, testing, and training, of Monfort Structure, Pump Blower Building, and yard piping, structures, and valves.
- Installation, commissioning, testing, and training of all electrical and instrumentation and controls systems.
- O&M Manuals shall be completed and submitted in final form

SC-15.04.A Add the following paragraph to Paragraph 15.04.A

5. Issuance of a certificate of Substantial Completion per Contractor request under 15.04.A.2 above shall not accelerate or begin the warranty period for that portion of work confirmed as substantially complete.

15.08 *Correction Period*

SC-15.08 Add the following new Paragraph 15.08.G:

- G. The correction period specified as one year after the date of Substantial Completion in Paragraph 15.08.A of the General Conditions is hereby revised to be the number of years set forth in SC-6.01.B.1;

ARTICLE 16—SUSPENSION OF WORK AND TERMINATION

No suggested Supplementary Conditions in this Article.

ARTICLE 17—FINAL RESOLUTIONS OF DISPUTES

SC-17.03 Add the following new paragraph immediately after Paragraph 17.02.

17.03 *Attorneys' Fees*

- A. For any matter subject to final resolution under this Article, the prevailing party shall be entitled to an award of its attorneys' fees incurred in the final resolution proceedings, in an equitable amount to be determined in the discretion of the court, arbitrator, arbitration panel, or other arbiter of the matter subject to final resolution, taking into account the parties' initial demand or defense positions in comparison with the final result.

ARTICLE 18—MISCELLANEOUS

No suggested Supplementary Conditions in this Article.

ARTICLE 19—FEDERAL REQUIREMENTS

No suggested Supplementary Conditions in this Article.

ARTICLE 20—ADDITIONAL STATE / LOCALITY REQUIREMENTS

No suggested Supplementary Conditions in this Article.

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**SECTION 01 0400
GEOTECHNICAL DATA**

PART 1 - GENERAL

1.01 EXISTING SUBSURFACE INFORMATION

- A. The following subsurface investigation reports at the site of the Work were used during design. These reports shall be considered technical data upon which the Contractor may utilize. All of the information in them may not directly relate to the Work in this project. They are for the Contractor's reference only. Owner or Engineer do not guarantee the information located within these documents. Engineer's Seal does not pertain to any of these reports.

1. Geotechnical Engineering Report
Marshalltown Flow Equalization Basin
Marshalltown, Iowa
Terracon Project No. AB265003-01
March 13, 2026

PART 2 - NOT USED

PART 3 - NOT USED

END OF SECTION 01 0400

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**SECTION 01 1000
SUMMARY**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Project Information.
- B. Quality Assurance.
- C. Commencement of the Work.
- D. Owner Occupancy.
- E. Contractor Use of Site and Premises.
- F. Layout of the Work.
- G. Work Sequence.
- H. Schedule of Values.
- I. Startup and Training.
- J. Permits, Fees and Notices.
- K. Safety and Protection.

1.02 PROJECT INFORMATION

- A. Project Name: Marshalltown, IA - Flow Equalization Improvements.
- B. Owner's Name: City of Marshalltown, IA.
 - 1. Address: 1001 Woodland Street, Marshalltown, IA, 50158.
- C. Engineer's Name: HR Green, Inc.
 - 1. Address: 5525 Merle Hay Road, Suite 200, Johnston, IA 50131-1448
 - 2. Phone: (515) 278-2913
 - 3. Fax: (713) 965-0044
- D. The Project consists of:
 - 1. Furnish all labor, materials, and equipment necessary to complete the Flow Equalization Basin Improvements including a new bolted steel equalization basin and foundation; yard piping, valve vaults, plant effluent water extension, site and paving improvements; modifications to the Monfort distribution structure and SBR pump building; electrical and control improvements; and associated work in accordance with the contract documents.

1.03 QUALITY ASSURANCE

- A. Supervision and Superintendent:
 - 1. The Contractor or competent Superintendent must be on the Project when construction activities are taking place. The Superintendent shall supervise, direct, and control the Contractor's operations, personnel, work and the Subcontractor's operations. The Contractor shall give the Owner and Engineer written notification of the name of the Superintendent. The Superintendent shall be employed by the General Contractor and shall be assigned to the project full-time. The Superintendent shall be incidental to mobilization. A copy of the Drawings and Specifications shall be available on the project site at all times.
 - 2. Contractor shall maintain a qualified and responsible person available 24 hours per day, seven days per week to respond to emergencies which may occur after hours. Contractor shall provide to Engineer the phone number and/or paging service of this individual.
 - 3. Incompetent or incorrigible employees shall be dismissed from Work by Contractor or its representative when requested by Engineer, and such persons shall not again be permitted to return to Work without written consent of Engineer.

1.04 COMMENCEMENT OF THE WORK

- A. The Contractor shall not commence Work nor allow Subcontractors or Sub-subcontractors to commence Work until:
 - 1. The Agreement has been fully executed.
 - 2. The Owner has approved the Contractor's Performance and Maintenance and Payment Bonds.
 - 3. The Owner has approved evidence of the Contractor's Liability Insurance and other insurance required to be purchased by the Contractor.
 - 4. The Engineer, on behalf of the Owner, has issued a Notice to Proceed.

1.05 OWNER OCCUPANCY

- A. The Owner shall have the right to take possession of and use any completed or partially completed portions of the Work, notwithstanding the time for completing the entire work or such portions as may not have expired; but such taking, possession and use shall not be deemed an acceptance of any Work not completed in accordance with the Contract Documents.
 - 1. If such prior use increases the cost of, or delays the Work, the Contractor shall be entitled to such extra compensation or extension of time, or both, as the Engineer may determine.
- B. Owner will continue to operate the WPCP and existing process facilities throughout the construction period.
- C. Cooperate with Owner to minimize conflict and to facilitate Owner's operations.
- D. Schedule the Work to accommodate Owner occupancy and operations.
- E. Continuity of treatment system operation.
 - 1. Conduct work in a manner that avoids interruption of effective treatment system operation.
 - 2. Prevent the bypass of untreated wastewaters to surface water or drainage ways. Accidental bypasses caused by Contractor's work activity will entitle Owner to:
 - a. Employ others to stop bypassing without giving notice to Contractor.
 - b. Recover from the Contractor all costs incurred by the Owner as a result of the bypass, including labor, materials, services, legal fees, regulatory penalties, and other related expenses.
 - 3. Submit with the Construction Schedule a detailed outage plan and schedule for each system component. Indicate how effective wastewater system operation will be maintained.

1.06 CONTRACTOR USE OF SITE AND PREMISES

- A. Construction Operations: Limited to areas noted on Drawings.
- B. Limit use of site and premises to allow:
 - 1. Work by Others.
 - 2. Work by Owner.
 - 3. Engineer.
 - 4. Resident Project Representative.
- C. All City properties are tobacco free, and policy will be enforced.
- D. Provide access to and from site as required by law and by Owner.
- E. Emergency Building Exits During Construction: Keep all exits required by code open during construction period; provide temporary exit signs if exit routes are temporarily altered.

1.07 LAYOUT OF THE WORK

- A. The Owner shall provide information to the Contractor regarding bench marks for the project. The Contractor shall be responsible for all detailed construction staking.

1.08 WORK SEQUENCE

- A. All portions of work under the proposed Contract Documents shall be completed and ready for operation on or before the date set forth in the Notice to Bidders. Provisions for liquidated damages are set forth in the Contract.

- B. Construct Work in stages to accommodate Owner's occupancy and operational requirements during the construction period. Coordinate construction schedule and operations with Owner.
- C. Prior to starting construction, Contractor shall submit a detailed sequencing plan which will permit the facilities to function as normally as practical during the construction period. It is understood that equipment lead times may be substantial and will affect the proposed sequence. Contractor shall not begin construction activities until the sequencing plan has been approved by the Engineer and Owner's representative.
- D. Contractor shall notify Owner's representative and Engineer a minimum of 72 hours in advance of any approved shutdowns.
- E. The Contractor shall minimize downtime of all utilities and limit shutdowns to less than two (2) hours unless otherwise specified herein or approved by Owner.
- F. The following requirements shall be met at all times unless approved otherwise:
 - 1. Two (2) SBR Raw Water Pumps shall be operational at all times unless approved otherwise.
 - 2. A SBR Raw Water Pump shall be considered out of service if any construction or removals affect the operation of the unit.
 - 3. Two (2) of the three (3) segments of piping in the Monfort Distribution Structure serving the Domestic Plant shall be operational at all times unless approved otherwise.
 - 4. Contractor shall coordinate with the Owner to drain the segments of piping to be replaced as necessary including but not limited to: piping in the Monfort Distribution Structure, the 18-inch piping which is being tied into near the proposed Flow Equalization Basin, and the 12-inch bypass piping around the east end of the proposed Flow Equalization Basin. Contractor shall be responsible for containment and removal of residual wastewater and solids encountered during the work.
- G. The following suggested general construction sequence may be followed:
 - 1. Begin excavation for proposed Flow EQ Basin and associated vaults.
 - 2. Lay yard piping for tank inlet and outlet pipes as indicated on the Contract Drawings. Do not yet tie-in the inlet and outlet pipes to the 18-inch force main.
 - 3. Lay yard piping for 6-inch water line and hydrants around the tank as indicated in the Contract Drawings. Coordinate outage for connection of new water pipe. Outage duration shall not exceed 4 hours without Owner approval.
 - 4. Construct proposed Flow EQ Basin foundation.
 - 5. Sequentially remove and replace valves for SBR Raw Water pumps as indicated in the Contract Drawings.
 - 6. Upon delivery of the bolted steel tank, erect the tank and associated stairs.
 - 7. Install the above ground up-and-over inlet piping for the tank. Tie into the buried piping laid but not yet tied into the 18-inch force main.
 - 8. Sequentially replace the segments of piping, new valves and flow meters in the Monfort Distribution structure.
 - 9. Excavate, lay piping, and tie-in the tank overflow piping to the existing 12-inch drain pipe in the yard.
 - 10. Complete and test required Flow EQ Basin bypass, drain, return, and associated valving prior to final cutover of the flow EQ basin. Also, complete electrical, instrumentation, control, and communication improvements required for operation of the Flow EQ Basin, Monfort modifications, and SBR Pump Building modifications prior to startup/cutover.
 - 11. Excavate, install new vault and plug valve into existing 12-inch bypass piping as required in the Contract Drawings.
 - 12. Shut down 18-inch force main, drain piping, and connect new tank inlet and outlet piping. Outage duration shall not exceed 4 hours without Owner approval. Contractor shall coordinate final connections to the existing JBS conveyance piping with Owner, Engineer, and JBS, and JBS's contractor. Final tie-ins shall not proceed until the required temporary or permanent conveyance operating condition has been established and the outage/tie-in plan has been accepted by Owner.

13. Complete startup, functional testing, and commissioning of the Flow EQ Basin and associated conveyance/control systems prior to placing the system into normal service.
 14. Repair pavement, place flatwork concrete, and finish grading/seeding as required in the Contract Documents.
- H. Existing isolation valves are not guaranteed to function. The Contractor shall be responsible for any additional isolation materials required for construction sequencing. The Contractor shall be responsible for isolating piping as necessary to facilitate replacement, including installing temporary blind flanges or pancake blinds.
- I. The Contractor shall schedule Work so that interruption of existing utilities, including but not limited to: electric, telephone, communication, cable, gas, water, and sewer service will be at a minimum. When it is necessary to interrupt services, the Contractor shall notify the Owner's representative, Engineer, and appropriate utility companies seventy-two (72) hours in advance of the interruption.
- J. It may be necessary to do certain parts of the construction work outside normal working hours and on Sundays in order to avoid undesirable conditions, and it shall be the obligation of the Contractor to do this work at such times at no additional cost to the Owner. Do not make connections between existing piping and new piping until necessary inspection and tests have been completed on the new work and it is found to conform in all respects to the requirements of the drawings and specifications.
- K. Special notes detailing critical portions of the work involving removal, replacement, tie-in, changeover, etc. have been included in the drawings and the Work Sequence of this Section. These notes describe the work, timing, scheduling, and coordination with the Owner and Engineer necessary to complete the work. The detailed construction schedule shall be developed by the Contractor with consideration of these details and the overall progress of the work. The Engineer and Owner shall have full authority to review this schedule in order to protect the operation of the existing facilities during construction.

1.09 SCHEDULE OF VALUES

- A. Where a Contract is awarded on a lump sum basis, the Contractor shall file with the Engineer a balanced price segregation of the lump sum bid into items similar to the various subdivisions of the general and detailed specifications, the sum of which shall equal the lump sum bid.
1. The cost of various materials shall be furnished upon request of the Engineer, and such data will then be used as a basis for making progress estimates.
 2. Breakdown costs, itemized by Specification Section and trade, and distribute cost to individual applicable units and structures.
 3. Where structures, units, equipment or other components are identified by a specific series or, identification number, utilize said designation throughout cost breakdown.
 4. Provide detailed breakdown for individual yard piping or conduit runs and identify approximate quantities involved to satisfaction of the Engineer. Provide separate breakdown for change order items requested.
 5. Provide an additional breakdown sheet, equivalent to EJCDC document C620, Page 3 of 3, showing the tabulation format for stored materials.
 6. Submit this sheet each month with Contractor's pay request breakdown.
- B. Contractor's costs shall not govern the allocation of values when application of Contractor's costs to a component part of the Work results in any other component or combination of component parts being under-valued in relation to conventional estimating guides.
1. The detail and format of cost breakdown and stored materials tabulation sheet shall be fully approved by Engineer.
- C. A reasonable allocation of the Contract Price to the component parts of the Work will be approved if component parts of the Work have values assigned to them that are well- balanced with respect to relative values for similar work established by published estimating guides.
1. Unless otherwise agreed to at the Preconstruction Conference, Means Estimator Guide or other similar nationally recognized estimating guide shall be used for resolving differences between Engineer's and Contractor's opinions of allocation of values.

2. Consent of Surety: If Contractor and Engineer cannot mutually agree on a Schedule of Values, Engineer will approve a Schedule of Values approved by the Surety providing the Performance Bond.

D. Schedule of Values shall be agreed upon prior to first Application for Payment.

1.10 STARTUP AND TRAINING

- A. See individual equipment specifications for item specific and additional requirements.
- B. Contractor shall coordinate with Owner to schedule each training thirty (30) days in advance.
- C. Unless otherwise noted in individual equipment specifications, provide separate training sessions for operations and maintenance staff for each piece of equipment over two (2) day period.
- D. Owner training shall not occur until:
 1. All submittals, operation and maintenance manuals have been approved by Owner.
 2. All controls are complete and tested.
 3. All equipment has received a certificate of successful startup from the manufacturer's representative and certificate submitted to the Owner.
 4. Commissioning periods shall be completed after training.

1.11 PERMITS, FEES AND NOTICES

- A. The Contractor shall secure and pay for all permits and governmental fees, licenses and inspections for the proper execution and completion of the Work which are customarily secured after execution of the Contract and which were legally required at the time bids were received. City building permits and inspections are required, but the permit fees will be exempted.

1.12 SAFETY AND PROTECTION

- A. Contractor shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:
 1. All persons on the Site or who may be affected by the Work;
 2. All the work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
 3. Other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.
- B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify owners of adjacent property and of Underground Facilities and other utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property.
- C. All damage, injury, or loss to any property caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor.
- D. Contractor's duties and responsibilities for safety and for protection of the Work shall continue until such time as all the Work is completed and Engineer has issued a notice to Owner and Contractor that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION 01 1000

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**SECTION 01 2500
SUBSTITUTION PROCEDURES**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Procedural requirements for proposed substitutions.

1.02 DEFINITIONS

- A. Substitutions: Changes from Contract Documents requirements proposed by Contractor to materials, products, assemblies, and equipment.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 GENERAL REQUIREMENTS

- A. Comply with requirements specified in Section 01 3000.
- B. A Substitution Request for products, assemblies, materials, and equipment constitutes a representation that the submitter:
 - 1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product, equipment, assembly, or system.
 - 2. Agrees to provide the same warranty for the substitution as for the specified product.
 - 3. Agrees to coordinate installation and make changes to other work that may be required for the work to be complete, with no additional cost to Owner.
 - 4. Waives claims for additional costs or time extension that may subsequently become apparent.
- C. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents. Burden of proof is on proposer.
- D. Content: Include information necessary for tracking the status of each Substitution Request, and information necessary to provide an actionable response.
 - 1. Forms indicated in the Project Manual are adequate for this purpose, and must be used.
- E. Limit each request to a single proposed substitution item.

3.02 SUBSTITUTION PROCEDURES DURING PROCUREMENT

- A. Submittal Time Restrictions:
 - 1. Instructions to Bidders specifies time restrictions and the documents required for submitting substitution requests during the bidding period.
- B. Submittal Form (before award of contract): Submit substitution requests in writing using a form containing information substantially equivalent to CSI Form 13.1A – Substitution Request, modified as appropriate for submission during the bidding period.

3.03 SUBSTITUTION PROCEDURES DURING CONSTRUCTION

- A. Submittal Form (after award of contract):
 - 1. Submit substitution requests by completing CSI/CSC Form 13.1A - Substitution Request (After Bidding/Negotiating). See this form for additional information and instructions. Use only this form; other forms of submission are unacceptable.
- B. Submit request for Substitution for Convenience within 14 days of discovery of its potential advantage to the project, but not later than 14 days prior to time required for review and approval by Engineer, in order to stay on approved project schedule.
 - 1. In addition to meeting general documentation requirements, document how the requested substitution benefits the Owner through cost savings, time savings, greater energy conservation, or in other specific ways.
 - 2. Document means of coordinating of substitution item with other portions of the work, including work by affected subcontractors.

3. Bear the costs engendered by proposed substitution of:
 - a. Owner's compensation to the Engineer for any required redesign, time spent processing and evaluating the request.
- C. Substitutions will not be considered under one or more of the following circumstances:
 1. When they are indicated or implied on shop drawing or product data submittals, without having received prior approval.
 2. Without a separate written request.

3.04 RESOLUTION

3.05 ACCEPTANCE

- A. Accepted substitutions change the work of the Project. They will be documented and incorporated into work of the project by Change Order, Construction Change Directive, Architectural Supplementary Instructions, or similar instruments provided for in the Conditions of the Contract.

END OF SECTION 01 2500

**SECTION 01 3000
ADMINISTRATIVE REQUIREMENTS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Electronic document submittal service.
- B. Construction Survey.
- C. Preconstruction Meeting.
- D. Progress Meetings.
- E. Check-In Meetings.
- F. Submittals for Review, Information, and Project Closeout.
- G. Number of Copies of Submittals.
- H. Submittal Procedures.
- I. Engineer's Review Responsibilities, Procedures, and Definitions.
- J. Re-Submittals.

1.02 RELATED REQUIREMENTS

- A. Section 00 7000 - General Conditions
- B. Document 00800 - Supplementary General Conditions.
- C. Section 01 1000 - Summary occupancy, .
- D. Section 01 3216 - CONSTRUCTION PROGRESS SCHEDULE.
- E. Section 01 7000 - Execution and Closeout Requirements.
- F. Section 01 7800 - Closeout Submittals.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 ELECTRONIC DOCUMENT SUBMITTAL SERVICE

- A. All documents transmitted for purposes of administration of the contract are to be in electronic (PDF, MS Word, or MS Excel) format, as appropriate to the document, and transmitted via an Internet-based submittal service that receives, logs and stores documents, provides electronic stamping and signatures, and notifies addressees via email.
 - 1. Besides submittals for review, information, and closeout, this procedure applies to Requests for Interpretation (RFIs), progress documentation, contract modification documents (e.g. supplementary instructions, change proposals, change orders), applications for payment, field reports and meeting minutes, Contractor's correction punchlist, and any other document any participant wishes to make part of the project record.
 - 2. Contractor and Engineer are required to use this service.
 - 3. It is Contractor's responsibility to submit documents in allowable format.
 - 4. Subcontractors, suppliers, and Engineer's consultants are to be permitted to use the service at no extra charge.
 - 5. Users of the service need an email address, internet access, and PDF review software that includes ability to mark up and apply electronic stamps (such as Adobe Acrobat, www.adobe.com, or Bluebeam PDF Revu, www.bluebeam.com), unless such software capability is provided by the service provider.
 - 6. Paper document transmittals will not be reviewed; emailed electronic documents will not be reviewed.
 - 7. All other specified submittal and document transmission procedures apply, except that electronic document requirements do not apply to samples or color selection charts.

- B. Submittal Service: The selected service is:
 - 1. Submittal Exchange (tel: 1-800-714-0024): www.submittalexchange.com/#sle.
- C. Project Closeout: Engineer will determine when to terminate the service for the project and is responsible for obtaining archive copies of files for Owner.

3.02 CONSTRUCTION SURVEY

- A. Contractor to provide construction staking and survey.
- B. Contractor to locate and protect survey control and reference points.
- C. Control datum for survey is that established by Owner provided survey.
- D. Provide field engineering services. Establish elevations, lines, and levels, utilizing recognized engineering survey practices.

3.03 PRECONSTRUCTION MEETING

- A. Engineer will schedule a meeting after Notice of Award.
- B. Prior to the Preconstruction Meeting, submit a schedule of required submittals coordinated with the Construction Progress Schedule. Identify anticipated submittal dates, required review dates, fabrication durations, and delivery dates for long-lead equipment and materials.
- C. Attendance Required:
 - 1. Owner.
 - 2. Engineer.
 - 3. Resident Project Representative.
 - 4. Contractor.
 - 5. Contractor's Superintendent.
 - 6. Major Subcontractors.
 - 7. Utility Companies.
- D. Agenda:
 - 1. Submission of list of Subcontractors, list of Products, schedule of values, and progress schedule.
 - 2. Designation of personnel representing the parties to Contract, Owner, Contractor, and Engineer.
 - 3. List and schedule of submittals/shop drawings.
 - 4. Review of long-lead equipment and material procurement, including the bolted steel flow equalization basin, valves, instrumentation, and other critical-path items.
 - 5. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
 - 6. Use of premises by Owner and Contractor.
 - 7. Review of construction sequencing, process shutdowns, tie-ins, and coordination with ongoing WPCP and JBS conveyance operations.
 - 8. Owner's requirements.
 - 9. Facilities and controls provided by Owner.
 - 10. Temporary utilities provided by Owner.
 - 11. Security and housekeeping procedures.
 - 12. Scheduling.
 - 13. Procedures for testing.
 - 14. Procedures for maintaining record documents.
- E. Engineer shall record minutes and distribute electronic copies to participants and those affected by decisions made.

3.04 PROGRESS MEETINGS

- A. Contractor to schedule and administer meetings throughout progress of the Work at maximum monthly intervals.

- B. Contractor to make arrangements for meetings, prepare agenda with copies for participants, preside at meetings, record minutes, and distribute copies within two days to Engineer, Owner, participants, and those affected by decisions made.
- C. Attendance Required:
 - 1. Contractor.
 - 2. Owner.
 - 3. Engineer.
 - 4. Contractor's superintendent.
 - 5. Major subcontractors.
- D. Agenda:
 - 1. Review minutes of previous meetings.
 - 2. Address public concerns and complaints.
 - 3. Review of work progress.
 - 4. Field observations, problems, and decisions.
 - 5. Identification of problems that impede, or will impede, planned progress.
 - 6. Review of submittals schedule and status of submittals.
 - 7. Review of RFIs log and status of responses.
 - 8. Review of off-site fabrication and delivery schedules.
 - 9. Maintenance of progress schedule.
 - 10. Corrective measures to regain projected schedules.
 - 11. Planned progress during succeeding work period.
 - 12. Coordination of projected progress.
 - 13. Maintenance of quality and work standards.
 - 14. Effect of proposed changes on progress schedule and coordination.
 - 15. Other business relating to work.
 - 16. Schedule next meeting.
- E. Contractor shall record minutes and distribute copies within two days after meeting to participants, with two copies to Engineer, Owner, participants, and those affected by decisions made.

3.05 CHECK-IN MEETINGS

- A. Contractor to schedule and administer weekly check-in meetings via remote platform such as Microsoft Teams. Check-in meeting to be abridged version of Progress Meetings. Frequency of check-in meetings to be adjusted based on construction activity and at discretion of the Owner.
- B. Provide and maintain a three-week look-ahead schedule during active field construction identifying planned work, anticipated shutdowns, inspections, testing, and Owner/Engineer coordination requirements.

3.06 SUBMITTALS FOR REVIEW

- A. When the following are specified in individual sections, submit them for review:
 - 1. Product data.
 - 2. Design data.
 - 3. Shop drawings.
 - 4. Samples for selection.
 - 5. Samples for verification.
- B. Submit for review according to the procedures and purposes described herein.
- C. Samples will be reviewed for aesthetic, color, or finish selection.
- D. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article below and for record documents purposes described in Section 01 7800 - Closeout Submittals.
- E. Required Submittal Quality
 - 1. Organization
 - a. Cover Labeling

- 1) Supplier name, address, and telephone number.
 - 2) Supplier's designated Project Number.
 - 3) Engineer's designated Project Name, Job Number, and Location.
 - 4) Engineer's firm name and location
 - 5) General contractors name and location
 - 6) Specification Section(s) applicable to submittal contents.
 - b. Contents
 - 1) Cover sheet (same as Exterior Cover requirements) with at least a 4" x 4" blank space for Engineers Review Stamp.
 - 2) Table of Contents for all major equipment/devices/components/descriptions specified.
 - 3) Notification of all exceptions taken to the specifications.
 - 4) Order of Contents -- must be the same as order described in the applicable specification sections.
 - 5) Tabs separating each major equipment division.
2. Identification of Pertinent Information
 - a. Provide Bill of Materials to indicate (at minimum) series, model number, and manufacturer.
 - b. On catalog cut sheets:
 - 1) Identify series and complete model number proposed.
 - 2) Identify information pertinent to proposed model and conformance to specifications by arrow, underline, circular enclosure.
 - 3) Minimize non-specific information that does not indicate conformance or cross out non-pertinent information.
 - c. On performance data/curves etc. clearly identify pertinent information (or cross out non-pertinent) data.
 - d. On all documentation provided, illustrate exceptions to the contract documents.
3. Legible Quality
 - a. Font size no less than 10; minimum character height no less than 1/16".
 - b. No faxes accepted.
 - c. No copies of catalog cuts accepted where information is skewed off page or non-linear.
 - d. Basic information to be all typewritten; only identification of pertinent information may be hand written.

3.07 SUBMITTALS FOR INFORMATION

- A. When the following are specified in individual sections, submit them for information:
 1. Design data.
 2. Certificates.
 3. Test reports.
 4. Inspection reports.
 5. Manufacturer's instructions.
 6. Manufacturer's field reports.
 7. Other types indicated.
- B. Submit for Engineer's knowledge as contract administrator or for Owner.

3.08 SUBMITTALS FOR PROJECT CLOSEOUT

- A. Submit Correction Punch List for Substantial Completion.
- B. Submit Final Correction Punch List for Substantial Completion.
- C. When the following are specified in individual sections, submit them at project closeout in compliance with requirements of Section 01 7800 - Closeout Submittals:
 1. Project record documents.
 2. Operation and maintenance data.

3. Warranties.
4. Bonds.
5. Other types as indicated.

D. Submit for Owner's benefit during and after project completion.

3.09 NUMBER OF COPIES OF SUBMITTALS

- A. Electronic Documents: Submit one electronic copy in PDF format; an electronically-marked up file will be returned. Create PDFs at native size and right-side up; illegible files will be rejected.
- B. Documents for Review:
 1. Submit the number of copies which the Contractor requires, plus copies which will be retained by the Engineer.
 2. Include an electronic copy with all paper submittals.
- C. Documents for Information: Submit one copy.
- D. Documents for Project Closeout: Make one reproduction of submittal originally reviewed.

3.10 SUBMITTAL PROCEDURES

- A. General Requirements:
- B. Shop Drawing Procedures:
 1. Prepare accurate, drawn-to-scale, original shop drawing documentation by interpreting Contract Documents and coordinating related work.
 2. Generic, non-project-specific information submitted as shop drawings do not meet the requirements for shop drawings.
- C. Transmit each submittal with approved form.
- D. Submittal number shall be in reference to Engineer's specification section. If there are multiple submittals to a singular specification section add a hyphen followed by a number. Re-submittals to have original number with an alphabetic suffix.
 1. Examples:
 - a. Two submittals (from same specification section) for Project Review: 16 4250-1 & 16 4250-2; second submittal (after initial review was rejected): 16 4250-2-A.
- E. Identify Project, Contractor, Subcontractor or supplier; pertinent Drawing sheet and detail number(s), and specification Section number, as appropriate.
- F. Apply Contractor's standard certification stamp, signed or initialed certifying that review, approval, verification of Products required, field dimensions, adjacent construction Work, and coordination of information is in accordance with the requirements of the Work and Contract Documents. Submittals without this certification will be returned without review.
- G. Electronic Submittal Procedure
 1. Summary:
 - a. Project administrative documents and submittals shall be transmitted electronically through the project electronic document management system designated by Engineer. Emailed submittals will not be accepted unless specifically authorized by Engineer.
 - b. The intent of electronic submittals is to expedite the construction process by reducing paperwork, improving information flow, and decreasing turnaround time.
 - c. The electronic submittal process is not intended for color samples, color charts, or physical material samples.
 - d. Electronic submittals shall have bookmarks created in the navigation frame for each major entry ("Section" or "Chapter") in the Table of Contents. Electronic submittals without bookmarks will be rejected.
 2. Procedures:
 - a. Submittal Preparation - Contractor may use any or all of the following options:
 - 1) Subcontractors and Suppliers provide electronic (PDF) submittals to Contractor via the Submittal Exchange website.

- 2) Subcontractors and Suppliers provide paper submittals to General Contractor who electronically scans and converts to PDF format.
 - 3) Subcontractors and Suppliers provide paper submittals to Scanning Service which electronically scans and converts to PDF format.
 - b. Contractor shall review and apply electronic stamp certifying that the submittal complies with the requirements of the Contract Documents including verification of manufacturer / product, dimensions and coordination of information with other parts of the work.
 - c. Contractor shall transmit each submittal to Engineer using the Submittal Exchange website, www.submittalexchange.com.
 - d. Engineer review comments will be made available on the Submittal Exchange website for downloading. Contractor will receive email notice of completed review.
 - e. Distribution of reviewed submittals to subcontractors and suppliers is the responsibility of the Contractor.
 - f. Submit paper copies of reviewed submittals at project closeout for record purposes in accordance with Section 017800 - Closeout Submittals
3. Costs:
- a. General Contractor shall include the full cost of Submittal Exchange project subscription in their proposal. This cost is included in the Contract Amount. Contact Submittal Exchange at 1-800-714-0024 to verify cost prior to bid. Contact Procure at (844) 682-1707 to verify cost prior to bid.
 - b. At Contractor's option, training is available from Submittal Exchange regarding use of website and PDF submittals. Contact Submittal Exchange at 1-800-714-0024 or contact Procure at (844) 682-1707 to verify cost prior to bid.
 - c. Internet Service and Equipment Requirements:
 - 1) Email address and Internet access at Contractor's main office.
 - 2) Adobe Acrobat (www.adobe.com), Bluebeam PDF Revu (www.bluebeam.com), or other similar PDF review software for applying electronic stamps and comments.
- H. Schedule submittals to expedite the Project, and deliver. Coordinate submission of related items.
- I. Coordinate submittals with other submittals, related activities, sequential activities and overall performance of the Work.
- J. Revise and submit submittals as required, identify all changes made since previous submittal. Contractor shall address each previous comment from Engineer. Not doing so will result in a rejected submittal.
- K. Distribute copies of reviewed submittals as appropriate. Instruct parties to promptly report any inability to comply with provisions.
- L. Clearly identify on the transmittal sheet if the submittal represents "Or Equal" items or substitute items. If the submittal is a substitute, the substitution must result in a decrease in overall cost or result in saving construction time.
- M. Contractor to investigate and evaluate for items with long lead times or critical path to execution of the contract, and to coordinate at least these items' submittal groupings with the Engineer. The Engineer accepts no burden for project delays where additional submittal cycles are required to ascertain conformance and intent to the contract documents.
- N. If the Contractor considers any correction indicated on the shop drawings to constitute a change to the Contract Documents, give written notice thereof at least 7 calendar days prior to release for manufacture.
- O. When the shop drawings have been completed to the satisfaction of the Engineer, carry out the construction in accordance therewith and make no further changes therein except upon written instructions from the Engineer.

3.11 ENGINEER'S REVIEW RESPONSIBILITIES, PROCEDURES AND DEFINITIONS

- A. General

1. Review of shop drawings, data, and samples will be for general conformance with the design concept and Contract Documents. They shall not be construed:
 - a. As permitting any departure from the Contract requirements;
 - b. As relieving the Contractor of responsibility for any errors, including details, dimensions, and materials;
 - c. As approving departures from details furnished by the Engineer, except as otherwise provided herein;
 - d. As approving substitutions to specified products or manufacturers.
 2. The Engineer does not review for verification of quantities, weights, dimensions, or means and methods.
 3. Partial review status will not be given to a submittal. Entire submittal shall be either acceptable or the entire submittal must be resubmitted with corrections as clarified by status definitions below.
 4. Submittals will be reviewed in order received unless Contractor requests a revised order of review, in writing. All submittals shall be submitted sufficiently in advance of construction requirements to provide no less than 15 calendar days for review from the time the Engineer receives them. No less than 30 calendar days will be required for major equipment that requires review by more than one engineering discipline.
- B. All submittals that have been reviewed by Engineer will have Engineer's Review Stamp affixed, initialed and dated, indicating Engineer's review action. No submittals shall be used for construction unless they bear the initialed Engineer's Review Stamp. Possible review actions by Engineer are:
1. NO EXCEPTIONS NOTED. Engineer's review did not detect deviations from conformance and intent of the Contract Documents.
 2. EXCEPTIONS NOTED. Engineer's review did not detect major deviations from conformance and intent of the contract documents; minor discrepancies and/or deficiencies are noted. Corrected copies are not required; however, the item(s) to be furnished are to be furnished in accordance with the Engineer's comments. If the Contractor elects to take exception to any comments, then corrected copies (with supplemental explanatory data) are to be re-submitted to the Engineer similar to a Revise and Resubmit status process.
 3. REVISE AND RESUBMIT. Engineer's review found major discrepancies and/or deficiencies, and corrected submittals (in their entirety) are required to determine conformance and intent to the contract documents.
 4. REJECTED. Engineer's review concluded that the item(s) submitted do not meet the requirements of the "Or Equal" allowance, or a "Substitution" has been provided without proper approval process. An additional submittal cycle is required containing suitable items to determine conformance and intent of the contract documents.
 5. REVIEW NOT REQUIRED BY CONTRACT DOCUMENTS -- The Engineer's review found that the information submitted is not necessary to evaluate conformance and intent with contract documents.

3.12 RE-SUBMITTALS

- A. Re-submittals will be handled in the same manner as first submittals. On re-submittals, direct specific attention, in writing on the transmittal letter and on re-submitted shop drawings by use of revision triangles or other similar methods, to revisions other than the corrections requested by the Engineer, on previous submissions. Any such revisions which are not clearly identified shall be made at the risk of the Contractor. Make corrections to any work done because of this type revision that is not in accordance to the Contract Documents as may be required by the Engineer.
- B. Engineer will review all initial information for each submittal. Contractor shall reimburse Owner for the Engineer's charges for review of additional re-submittals. Contractor will be charged for review of all re-submittals over 20% of the initial submittals.
1. EXAMPLE: If the Contractor has a total of 50 initial submittals, there will be no charge for reviewing a combined total of 60 submittals and re-submittals. There will be a charge to review all submittals and re-submittals in excess of 60.

- C. The need for more than one re-submittal or any other delay in obtaining Engineer's review of submittals, will not entitle Contractor to extension of the contract time unless delay of the Work is the direct result of a change in the Work authorized by a Change Order or failure of Engineer to review and return any submittal to Contractor within the specified review period.
- D. An assigned review status of REVISE AND RESUBMIT or REJECTED requires the original full number of submittals to be resubmitted free of the Engineers previous correction marks and review status stamp. The Engineer reserves the right to retain the same number of copies for each review cycle.

END OF SECTION 01 3000

**SECTION 01 3216
CONSTRUCTION PROGRESS SCHEDULE**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Submittals.
- B. Preliminary schedule.
- C. Construction progress schedule, bar chart type.

1.02 SUBMITTALS

- A. Within 15 days after date of Agreement, submit initial progress schedule in duplicate .
- B. Revise and resubmit as required.
- C. Submit revised schedule with each Application for Payment, identifying changes since previous version.
- D. Show complete sequence of construction by activity, identifying Work of separate stages and other logically grouped activities. Indicate the early and late start, early and late finish, float dates, and duration.
- E. Indicate estimated percentage of completion for each item of Work at each submission.
- F. Indicate submittal dates required for shop drawings, product data, samples, and product delivery dates.

1.03 SCHEDULE FORMAT

- A. Listings: In chronological order according to the start date for each activity. Identify each activity with the applicable specification section number.
- B. Scale and Spacing: To allow for notations and revisions.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 PRELIMINARY SCHEDULE

- A. Prepare preliminary schedule in the form of a horizontal bar chart.

3.02 CONTENT

- A. Show complete sequence of construction by activity, with dates for beginning and completion of each element of construction.
- B. Identify each item by specification section number.
- C. Identify work of separate stages and other logically grouped activities.
- D. Include separate activities for preparation, review, and resubmittal of major equipment submittals; fabrication; delivery; installation; startup; testing; and commissioning. Identify long-lead items and activities controlling the critical path.
- E. The Project Schedule shall show the sequence in which the Contractor proposes to perform the Work, indicate the Critical Path, identify the dates on which the Contractor proposes to start and finish the scheduled activities of the Contract Work, indicate Substantial Completion within the Contract Time, indicate a date for Final Acceptance, and meet all the requirements as may be set forth in the Contract Documents.
- F. Provide sub-schedules to define critical portions of the entire schedule.
- G. Include conferences and meetings in schedule.
- H. Show accumulated percentage of completion of each item, and total percentage of Work completed, as of the first day of each month.
- I. Coordinate content with Schedule of Prices specified in the Proposal.

- J. Provide legend for symbols and abbreviations used.

3.03 BAR CHARTS

- A. Include a separate bar for each major portion of Work or operation.
- B. Identify the first work day of each week.

3.04 REVIEW AND EVALUATION OF SCHEDULE

- A. Participate in joint review and evaluation of schedule with Resident Project Representative at each submittal.
- B. Evaluate project status to determine work behind schedule and work ahead of schedule.
- C. After review, revise as necessary as result of review, and resubmit within 10 days.

3.05 UPDATING SCHEDULE

- A. Maintain schedules to record actual start and finish dates of completed activities.
- B. Indicate progress of each activity to date of revision, with projected completion date of each activity.
- C. Update diagrams to graphically depict current status of Work.
- D. Identify activities modified since previous submittal, major changes in Work, and other identifiable changes.
- E. Indicate changes required to maintain Date of Substantial Completion.
- F. Submit reports required to support recommended changes.

3.06 DISTRIBUTION OF SCHEDULE

- A. Distribute copies of updated schedules to Contractor's project site file, to Subcontractors, suppliers, Engineer, Resident Project Representative, Owner, and other concerned parties.
- B. Instruct recipients to promptly report, in writing, problems anticipated by projections indicated in schedules.

END OF SECTION 01 3216

**SECTION 01 4000
QUALITY REQUIREMENTS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. References and Standards.
- B. Field Samples.
- C. Testing Services.
- D. Control of installation.
- E. Tolerances.
- F. Testing and Inspection.
- G. Manufacturers' Field Services.

1.02 RELATED REQUIREMENTS

- A. Section 01 3000 - ADMINISTRATIVE REQUIREMENTS: Submittal procedures.

1.03 REFERENCES AND STANDARDS

- A. For products and workmanship specified by reference to a document or documents not included in the Project Manual, also referred to as reference standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- B. Conform to reference standard by date of issue current on date for receiving bids or date of Owner-Contractor Agreement when there are no bids.
- C. Obtain copies of standards where required by product specification sections.
- D. Maintain copy at project site during submittals, planning, and progress of the specific work, until Substantial Completion.
- E. Should specified reference standards conflict with Contract Documents, request clarification from Engineer before proceeding.
- F. Neither the contractual relationships, duties, or responsibilities of the parties in Contract nor those of Engineer shall be altered from Contract Documents by mention or inference otherwise in any reference document.

1.04 FIELD SAMPLES

- A. Install field samples at the site as required by individual specifications Sections for review.
- B. Acceptable samples represent a quality level for the Work.
- C. Where field sample is specified in individual Sections to be removed, clear area after field sample has been accepted by Engineer.

1.05 TESTING SERVICES

- A. Contractor shall employ and pay for the services of an independent testing agency to perform testing, inspection, and observation required by the Contract Documents.
- B. Owner may choose to have Engineer perform certain inspection and testing activities in addition to those specified as required by the Contractor. Payment for initial Owner/Engineer inspection and testing will be by Owner. Payment for Owner/Engineer retesting required because of non-conformance to specified requirements will be charged to the Contractor by deducting inspection and testing charges from the Contract Sum.
- C. Employment of agency in no way relieves Contractor of obligation to perform Work in accordance with requirements of Contract Documents.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce work of specified quality.
- B. Comply with manufacturers' instructions, including each step in sequence.
- C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Engineer before proceeding.
- D. Comply with specified standards as minimum quality for the work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Have work performed by persons qualified to produce required and specified quality.
- F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.
- G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, and disfigurement.

3.02 TOLERANCES

- A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.
- B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from Engineer before proceeding.
- C. Adjust products to appropriate dimensions; position before securing products in place.

3.03 TESTING AND INSPECTION

- A. See individual specification sections for testing required.
- B. Testing Agency Duties:
 - 1. Provide qualified personnel at site. Cooperate with Engineer and Contractor in performance of services.
 - 2. Perform inspections, sampling, testing, and other services specified in individual specification sections and as required by the Engineer.
 - 3. Ascertain compliance of materials and mixes with requirements of Contract Documents.
 - 4. Promptly notify Engineer and Contractor of observed irregularities or non-compliance of Work or products.
 - 5. Perform additional tests and inspections required by Engineer.
 - 6. Submit reports of all tests/inspections specified to Engineer, in duplicate, indicating observations and results of tests and indicating compliance or non-compliance with Contract Documents.
- C. Limits on Testing/Inspection Agency Authority:
 - 1. Agency may not release, revoke, alter, or enlarge on requirements of Contract Documents.
 - 2. Agency may not approve or accept any portion of the Work.
 - 3. Agency may not assume any duties of Contractor.
 - 4. Agency has no authority to stop the Work.
- D. Contractor Responsibilities:
 - 1. Deliver to agency at designated location, adequate samples of materials proposed to be used which require testing, along with proposed mix designs, equipment, tools, storage, and assistance as requested.
 - 2. Cooperate with laboratory personnel, and provide access to the Work and to manufacturers' facilities.
 - 3. Provide incidental labor and facilities:

- a. To provide access to Work to be tested/inspected.
- b. To obtain and handle samples at the site or at source of Products to be tested/inspected.
- c. To facilitate tests/inspections.
- d. To provide storage and curing of test samples.
4. Notify Engineer and laboratory 48 ____ hours prior to expected time for operations requiring testing/inspection services.
5. Do not cover, conceal, or proceed with subsequent Work where doing so would prevent completion of required testing or inspection.
6. Make arrangements with testing agency and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
7. Arrange with Owner's agency and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
- E. Re-testing required because of non-conformance to specified requirements shall be performed by the same agency on instructions by Engineer. Payment for re-testing will be made by the Contractor.

3.04 MANUFACTURERS' FIELD SERVICES

- A. When specified in individual specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust, and balance equipment as applicable, and to initiate instructions when necessary.
- B. Report observations and site decisions or instructions given by Manufacturer's Service Representatives to applicators or installers that are supplemental or contrary to manufacturers' written instructions.
- C. Submit report in duplicate within 30 days of observation to Engineer for review.
- D. Contractor shall provide qualified Service Representative(s), as necessary to:
 1. Instruct the Contractor's personnel in the installation, startup, and testing of equipment.
 2. Inspect equipment after it is installed to assure that all details of installation are correct and that equipment is prepared for operation in accordance with manufacturer's instructions and recommendations.
 3. Check connections to equipment and adjust, or supervise adjustment of, control and indicating devices after equipment has been installed and connected.
 4. Fully instruct Owner's operating personnel in operation and maintenance of equipment.
 5. Provide Engineer with duplicate copies of final alignment and clearance measurements on all rotating or reciprocating equipment. Measurements shall clearly identify each piece of equipment.
 6. Supervise preliminary operation of equipment and necessary adjustments.
- E. Presence of Service Representative will in no way relieve Contractor of any responsibility assumed under Agreement.
- F. Work and abilities of Service Representative shall be subject to review of Engineer. If Engineer determines that any Service Representative is not properly qualified, Contractor shall replace Service Representative upon written notification by Engineer.
- G. Contractor shall provide continuity in assignment of Service Representative to Work. In event substitution of Service Representative is made which is not at request of Engineer, substitute's time for "familiarization" shall be at Contractor's expense.
- H. Execute manufacturer's certificate of proper installation, found at the end of this section.

MANUFACTURER'S CERTIFICATE OF PROPER INSTALLATION

OWNER: _____ EQPT. SERIAL NO: _____
EQPT. TAG NO.: _____ EQPT./SYSTEM: _____
PROJECT NO.: _____ SPEC. SECTION: _____

**I HEREBY CERTIFY THAT THE ABOVE-REFERENCED EQUIPMENT/SYSTEM HAS BEEN:
(CHECK APPLICABLE)**

- ☐ Installed in accordance with Manufacturer's recommendations.
- ☐ Inspected, checked, and adjusted.
- ☐ Serviced with proper initial lubricants.
- ☐ Electrical and mechanical connections meet quality and safety standards.
- ☐ All applicable safety equipment has been properly installed.
- ☐ System has been performance tested, and meets or exceeds specified performance requirements. (When complete system of one manufacturer.)

COMMENTS: _____

I, THE UNDERSIGNED MANUFACTURER'S REPRESENTATIVE, HEREBY CERTIFY THAT I AM (I) A DULY AUTHORIZED REPRESENTATIVE OF THE MANUFACTURER, (II) EMPOWERED BY THE MANUFACTURER TO INSPECT, APPROVE, AND OPERATE HIS EQUIPMENT AND (III) AUTHORIZED TO MAKE RECOMMENDATIONS REQUIRED TO ASSURE THAT THE EQUIPMENT FURNISHED BY THE MANUFACTURER IS COMPLETE AND OPERATIONAL, EXCEPT AS MAY BE OTHERWISE INDICATED HEREIN. I FURTHER CERTIFY THAT ALL INFORMATION CONTAINED HEREIN IS TRUE AND ACCURATE.

DATE: _____
MANUFACTURER: _____
BY MANUFACTURER'S AUTHORIZED REPRESENTATIVE: _____

(Authorized Signature)

END OF SECTION 01 4000

**SECTION 01 4213
ABBREVIATIONS**

PART 1 GENERAL

1.01 GENERAL

- A. Wherever in these Specifications references are made to the standards, specifications, or other published data of the various international, national, regional, or local organizations, such organizations may be referred to by their acronym or abbreviation only. As a guide to the user of these Specifications, the following acronyms or abbreviations which may appear in these Specifications shall have the meanings indicated herein.

1.02 ABBREVIATION

- A. AAMA - Architectural Aluminum Manufacturer's Association
B. AASHTO - American Association of State Highway and Transportation Officials
C. AATCC - American Association of Textile Chemists and Colorists
D. ACI - American Concrete Institute
E. AFBMA - Anti-Friction Bearing Manufacturer's Association, Inc.
F. AGA - American Gas Association
G. AGMA - American Gear Manufacturer's Association
H. AI - The Asphalt Institute
I. AIA - American Institute of Architects
J. AISC - American Institute of Steel Construction
K. AISI - American Iron and Steel Institute
L. AITC - American Institute of Timber Construction
M. AMCA - Air Moving and Conditioning Association
N. ANS - American Nuclear Society
O. ANSI - American National Standards Institute, Inc.
P. APA - American Plywood Association
Q. API - American Petroleum Institute
R. APWA - American Public Works Association
S. ASA - Acoustical Society of America
T. ASAE - American Society of Agricultural Engineers
U. ASCE - American Society of Civil Engineers
V. ASHRAE - American Society of Heating, Refrigerating, and Air Conditioning Engineers
W. ASME - American Society of Mechanical Engineers
X. ASQC - American Society for Quality Control
Y. ASSE - American Society of Sanitary Engineers
Z. ASTM - American Society for Testing and Materials
AA. AWWA - American Water Works Association
BB. AWWA - American Water Works Association
CC. AWS - American Welding Society
DD. AWWA - American Water Works Association
EE. BHMA - Builders Hardware Manufacturer's Association

FF. CBM - Certified Ballast Manufacturers
GG. CEMA - Conveyors Equipment Manufacturer's Association
HH. CGA - Compressed Gas Association
II. CMA - Concrete Masonry Association
JJ. CRSI - Concrete Reinforcing Steel Institute
KK. EIA - Electronic Industries Association
LL. ETL - Electrical Test Laboratories
MM. EPA - Environmental Protection Agency
NN. FM - Factory Mutual System
OO. FPL - Forest Products Laboratory
PP. HI - Hydraulics Institute
QQ. IAPMO - International Association of Plumbing and Mechanical Officials
RR. ICBO - International Conference of Building Officials
SS. IEEE - Institute of Electrical and Electronics Engineers
TT. IES - Illuminating Engineering Society
UU. IME - Institute of Makers of Explosives
VV. IP - Institute of Petroleum (London)
WW. IPC - Institute of Printed Circuits
XX. ISA - Instrument Society of America
YY. ISO - International Organization for Standardization
ZZ. ITE - Institute of Traffic Engineers
AAA. MBMA - Metal Building Manufacturer's Association
BBB. MPTA - Mechanical Power Transmission Association
CCC. MSS - Manufacturing Standardization Society
DDD. NAAMM - National Association of Architectural Metal Manufacturer's
EEE. NACE - National Association of Corrosion Engineers
FFF. NBS - National Bureau of Standards
GGG. NEC - National Electrical Code
HHH. NEMA - National Electrical Manufacturer's Association
III. NFPA - National Fire Protection Association
JJJ. NFPA - National Forest Products Association
KKK. NLGI - National Lubricating Grease Institute
LLL. NMA - National Microfilm Association
MMM. NSF - National Sanitation Foundation
NNN. NWMA - National Woodwork Manufacturers Association
OOO. OSHA - Occupational Safety and Health Administration
PPP. PCA - Portland Cement Association
QQQ. PPI - Plastics Pipe Institute
RRR. RCRA - Resource Conservation and Recovery Act
SSS. RVIA - Recreational Vehicle Industry Association

TTT.	RWMA - Resistance Welder Manufacturer's Association
UUU.	SAE - Society of Automotive Engineers
VVV.	SAMA - Scientific Apparatus Makers Association
WWW.	SMA - Screen Manufacturers Association
XXX.	SMACCNA - Sheet Metal and Air Conditioning Contractors National Association
YYY.	SPI - Society of the Plastics Industry, Inc.
ZZZ.	SPIB - Southern Pine Inspection Bureau
AAAA.	SPR - Simplified Practice Recommendation
BBBB.	SSPC - Steel Structures Painting Council
CCCC.	SSPWC - Standard Specifications for Public Works Construction
DDDD.	UL - Underwriters Laboratories, Inc.
EEEE.	WCLIB - West Coast Lumber Inspection Bureau
FFFF.	WCRSI - Western Concrete Reinforcing Steel Institute
GGGG.	WEF - Water Environment Federation
HHHH.	WIC - Woodwork Institute of California
IIII.	WRI - Wire Reinforcement Institute, Inc.
JJJJ.	WWPA - Western Wood Products Association

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION 01 4213

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SECTION 01 5000
TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Temporary Utilities.
- B. Temporary Heat.
- C. Temporary Telephone Service.
- D. Temporary Water Service.
- E. Temporary Sanitary Facilities.
- F. Protection of Installed Work.
- G. Security Requirements.
- H. Vehicular Access and Parking.
- I. Waste Removal.

1.02 TEMPORARY UTILITIES

- A. Contractor shall provide and pay for all electrical power required for construction purposes, including field offices.

1.03 TEMPORARY HEAT

- A. Contractor shall provide and pay for heat devices and heat as required to maintain specified conditions for construction operations.

1.04 TEMPORARY TELEPHONE SERVICE

- A. Provide, maintain, and pay for mobile phone service for the field superintendent or other Contractor field representative.
- B. A cellular phone shall be acceptable as temporary phone service. Provide phone number to Engineer and Owner.

1.05 TEMPORARY WATER SERVICE

- A. Make suitable arrangements for temporary water service if water is needed for construction or testing. There will be no cost to the Contractor for water used.
- B. Coordinate connection location and use with Owner. Contractor shall provide hoses, backflow protection, temporary piping, and appurtenances required for its use.

1.06 TEMPORARY SANITARY FACILITIES

- A. Provide and maintain required facilities and enclosures for Contractor's workers, Engineer's personnel, Owner's personnel and testing firm personnel working at project site. Provide at time of project mobilization.
- B. Use of existing facilities is not permitted.
- C. Portable toilets shall be acceptable. Comply with all applicable codes and regulations. Arrange for regular cleaning and/or replacement of portable toilets.
- D. Maintain daily in clean and sanitary condition.
- E. At end of construction, return facilities to same or better condition as originally found.

1.07 PROTECTION OF INSTALLED WORK

- A. Protect installed Work and provide special protection where specified in individual specification Sections.

1.08 SECURITY

- A. Provide security and facilities to protect Work, existing facilities, and Owner's operations from unauthorized entry, vandalism, or theft.

- B. Coordinate with Owner's security program.

1.09 VEHICULAR ACCESS AND PARKING

- A. Maintain existing roads.
- B. Maintain Owner access to existing operating facilities, equipment, hydrants, and process structures at all times unless temporary restrictions are specifically coordinated with Owner.
- C. Coordinate access and haul routes with governing authorities and Owner.
- D. Construct and maintain temporary roads accessing public thoroughfares to serve construction area.
- E. Provide and maintain access to fire hydrants, free of obstructions.
- F. Provide means of removing mud from vehicle wheels before entering streets.
- G. Provide temporary parking areas to accommodate construction personnel. When site space is not adequate, provide additional off-site parking.

1.10 WASTE REMOVAL

- A. Provide waste removal facilities and services as required to maintain the site in clean and orderly condition.
- B. Provide containers with lids. Remove trash from site periodically.
- C. If materials to be recycled or re-used on the project must be stored on-site, provide suitable non-combustible containers; locate containers holding flammable material outside the structure unless otherwise approved by the authorities having jurisdiction.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION 01 5000

**SECTION 01 6000
PRODUCT REQUIREMENTS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Warranty.
- B. Re-use of Existing Products.
- C. Product Option Requirements.
- D. Substitution Limitations and Procedures.
- E. Procedures for Owner-Supplied Products.
- F. Transportation, Handling, Storage and Protection.
- G. Spare Parts and Maintenance Materials.

1.02 WARRANTY

- A. All Products as defined below shall be provided with manufacturer's full warranty against defects in materials and workmanship for two (2) years after Date of Substantial Completion, including all parts, labor, and expenses, unless otherwise required in individual specification Sections.
 - 1. This manufacturer's warranty shall be in addition to the Contractor's guarantee secured by the Performance and Maintenance Bond - Section 00610.

PART 2 PRODUCTS

2.01 PRODUCTS

- A. Products: Means new material, machinery, components, equipment, fixtures, and systems forming the Work. Does not include machinery and equipment used for preparation, fabrication, conveying and erection of the Work. Products may also include existing materials or components required for reuse.
- B. Existing materials and equipment indicated to be removed, but not to be re-used, relocated, reinstalled, delivered to the Owner, or otherwise indicated as to remain the property of the Owner, become the property of the Contractor; remove from site.
- C. Reused Products: Reused products include materials and equipment previously used in this or other construction, salvaged and refurbished as specified.

2.02 NEW PRODUCTS

- A. Provide new products unless specifically required or permitted by Contract Documents.
- B. Use of products having any of the following characteristics is not permitted:
 - 1. Made of wood from newly cut old growth timber.
 - 2. Containing lead, cadmium, or asbestos.
- C. Where other criteria are met, Contractor shall give preference to products that:
 - 1. If used on interior, have lower emissions.
 - 2. If wet-applied, have lower VOC content.

2.03 PRODUCT OPTIONS

- A. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description.
- B. Products Specified by Naming One or More Manufacturers: Use a product of one of the manufacturers named and meeting specifications, no options or substitutions allowed.
- C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named.

2.04 MAINTENANCE MATERIALS

- A. Furnish extra materials, spare parts, tools, and software of types and in quantities specified in individual specification sections.
- B. Deliver to Project site; obtain receipt prior to final payment.

PART 3 EXECUTION

3.01 SUBSTITUTION LIMITATIONS

- A. See Section 01 2500 - Substitution Procedures.
- B. A request for substitution constitutes a representation that the submitter:
 - 1. Will reimburse Owner for review or redesign services associated with re-approval by authorities.

3.02 OWNER-SUPPLIED PRODUCTS

- A. Owner's Responsibilities:
 - 1. Arrange for and deliver Owner reviewed shop drawings, product data, and samples, to Contractor.
 - 2. Arrange and pay for product delivery to site.
 - 3. On delivery, inspect products jointly with Contractor.
 - 4. Submit claims for transportation damage and replace damaged, defective, or deficient items.
 - 5. Arrange for manufacturers' warranties, inspections, and service.
- B. Contractor's Responsibilities:
 - 1. Review Owner reviewed shop drawings, product data, and samples.
 - 2. Receive and unload products at site; inspect for completeness or damage jointly with Owner.
 - 3. Handle, store, install and finish products.
 - 4. Repair or replace items damaged after receipt.

3.03 TRANSPORTATION AND HANDLING

- A. Package products for shipment in manner to prevent damage; for equipment, package to avoid loss of factory calibration.
- B. If special precautions are required, attach instructions prominently and legibly on outside of packaging.
- C. Coordinate schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.
- D. Transport and handle products in accordance with manufacturer's instructions.
- E. Transport materials in covered trucks to prevent contamination of product and littering of surrounding areas.
- F. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.
- G. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage, and to minimize handling.
- H. Arrange for the return of packing materials, such as wood pallets, where economically feasible.

3.04 STORAGE AND PROTECTION

- A. Designate receiving/storage areas for incoming products so that they are delivered according to installation schedule and placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication.
- B. Store and protect products in accordance with manufacturers' instructions.
- C. Store with seals and labels intact and legible.
- D. Store sensitive products in weathertight, climate-controlled enclosures in an environment favorable to product.

- E. For exterior storage of fabricated products, place on sloped supports above ground.
- F. Provide bonded off-site storage and protection when site does not permit on-site storage or protection.
 - 1. Payment for materials or equipment stored off-site will be subject to the requirements of the General and Supplementary Conditions and prior approval of Owner.
- G. Protect products from damage or deterioration due to construction operations, weather, precipitation, humidity, temperature, sunlight and ultraviolet light, dirt, dust, and other contaminants.
- H. Comply with manufacturer's warranty conditions, if any.
- I. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.
- J. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.
- K. Prevent contact with material that may cause corrosion, discoloration, or staining.
- L. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
- M. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

END OF SECTION 01 6000

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**SECTION 01 7000
EXECUTION AND CLOSEOUT REQUIREMENTS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Submittals.
- B. Project Conditions
- C. Coordination
- D. Examination, Preparation, and General Installation Procedures.
- E. Requirements for alterations work, including selective demolition.
- F. Laying Out the Work.
- G. General Installation Requirements.
- H. Alterations.
- I. Cutting and Patching.
- J. System Startup.
- K. Demonstration and Instruction.
- L. Final Cleaning.
- M. Closeout Procedures.

1.02 SUBMITTALS

- A. See Section 01 3000 - ADMINISTRATIVE REQUIREMENTS, for submittal procedures.
- B. Cutting and Patching: Submit written request in advance of cutting or alteration that affects:
 - 1. Structural integrity of any element of Project.
 - 2. Integrity of weather-exposed or moisture-resistant element.
 - 3. Efficiency, maintenance, or safety of any operational element.
 - 4. Visual qualities of sight exposed elements.
 - 5. Work of Owner or separate Contractor.

1.03 PROJECT CONDITIONS

- A. Grade site to drain. Maintain excavations free of water. Provide, operate, and maintain pumping equipment.
- B. Protect site from puddling or running water. Provide water barriers as required to protect site from soil erosion.
- C. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.
- D. Dust Control: Execute work by methods to minimize raising dust from construction operations. Provide positive means to prevent air-borne dust from dispersing into atmosphere and over adjacent property.
 - 1. Minimize dust nuisance by cleaning, sweeping, vacuum sweeping, sprinkling with water, or other means. The use of water in amounts that result in mud on public streets or roads is not an acceptable substitute for sweeping. Equipment for this operation shall be available at all times.
- E. Erosion and Sediment Control: Plan and execute work by methods to control surface drainage from cuts and fills, from borrow and waste disposal areas. Prevent erosion and sedimentation.
 - 1. Minimize amount of bare soil exposed at one time.
 - 2. Provide temporary measures such as silt fences, filter fabric, sedimentation ponds, placement berms, dikes, and drains, to prevent water flow.
 - 3. Construct fill and waste areas by selective placement to avoid erosive surface silts or clays.

4. Periodically inspect earthwork to detect evidence of erosion and sedimentation; promptly apply corrective measures.
- F. Noise Control: Provide methods, means, and facilities to minimize noise produced by construction operations.
 1. Restrict construction involving noisy operations, including starting and warming up of equipment, to the hours between 7:00 a.m. and 8:00 p.m. on weekdays. The exception to this requirement includes the need to operate equipment for temporary wastewater pumping.
 2. Each internal combustion engine, used for any purpose on the job or related to the job, shall be enclosed and be equipped with a muffler of a type recommended by the manufacturer. No internal combustion engine shall be operated on the project without muffler and enclosure.

1.04 COORDINATION

- A. Coordinate scheduling, submittals, and work of the various sections of the Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.
- B. Notify affected utility companies and comply with their requirements.
- C. Verify that utility requirements and characteristics of new operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
- D. Coordinate space requirements, supports, and installation of mechanical and electrical work that are indicated diagrammatically on drawings. Follow routing indicated for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
- E. Coordinate completion and clean-up of work of separate sections.

PART 2 PRODUCTS

2.01 PATCHING MATERIALS

- A. New Materials: As specified in product sections; match existing products and work for patching and extending work.

PART 3 EXECUTION

3.01 LAYING OUT THE WORK

- A. Verify locations of survey control points prior to starting work.
- B. Contractor shall locate and protect survey control and reference points.
- C. Control datum for survey is that established by Owner provided survey.
- D. Utilize recognized engineering survey practices.
- E. Establish elevations, lines and levels. Locate and lay out by instrumentation and similar appropriate means.

3.02 GENERAL INSTALLATION REQUIREMENTS

- A. Install products as specified in individual sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.
- B. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.
- C. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.
- D. Materials: As specified in product Section; match existing products and work for patching and extending work.
- E. Close openings in exterior surfaces to protect existing work from weather and extremes of temperature and humidity.

- F. Remove, cut, and patch work in a manner to minimize damage and to provide a means of restoring products and finishes to original condition.
- G. Make neat transitions between different surfaces, maintaining texture and appearance.

3.03 ALTERATIONS

- A. Existing construction and utilities shown are based on available record documents, survey information, and limited field observations. Contractor shall verify existing conditions affecting the Work prior to fabrication and construction.
 - 1. Verify that construction and utility arrangements are as indicated.
 - 2. Report discrepancies to Engineer before disturbing existing installation.
 - 3. Beginning of alterations work constitutes acceptance of existing conditions.
- B. Remove existing work as indicated and as required to accomplish new work.
 - 1. Remove items indicated on drawings.
 - 2. Relocate items indicated on drawings.
 - 3. Where new surface finishes are to be applied to existing work, perform removals, patch, and prepare existing surfaces as required to receive new finish; remove existing finish if necessary for successful application of new finish.
 - 4. Where new surface finishes are not specified or indicated, patch holes and damaged surfaces to match adjacent finished surfaces as closely as possible.
- C. Services (Including but not limited to HVAC, Plumbing, and Electrical): Remove, relocate, and extend existing systems to accommodate new construction.
 - 1. Maintain existing active systems that are to remain in operation; maintain access to equipment and operational components; if necessary, modify installation to allow access or provide access panel.
 - 2. Where existing systems or equipment are not active and Contract Documents require reactivation, put back into operational condition; repair supply, distribution, and equipment as required.
 - 3. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.
 - a. Disable existing systems only to make switchovers and connections; minimize duration of outages.
 - b. Provide temporary connections as required to maintain existing systems in service.
 - 4. Verify that abandoned services serve only abandoned facilities.
 - 5. Remove abandoned pipe, ducts, conduits, and equipment; remove back to source of supply where possible, otherwise cap stub and tag with identification; patch holes left by removal using materials specified for new construction.
- D. Protect existing work to remain.
 - 1. Prevent movement of structure; provide shoring and bracing if necessary.
 - 2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
 - 3. Repair adjacent construction and finishes damaged during removal work.
 - 4. Patch as specified for patching new work.
- E. Adapt existing work to fit new work: Make as neat and smooth transition as possible.
- F. When finished surfaces are cut so that a smooth transition with new work is not possible, terminate existing surface along a straight line at a natural line of division and make recommendation to Engineer.
- G. Where a change of plane of 1/4 inch or more occurs in existing work, submit recommendation for providing a smooth transition for Engineer review and request instructions.
- H. Patching: Where the existing surface is not indicated to be refinished, patch to match the surface finish that existed prior to cutting. Where the surface is indicated to be refinished, patch so that the substrate is ready for the new finish.

- I. Refinish existing surfaces as indicated:
 - 1. Where rooms or spaces are indicated to be refinished, refinish all visible existing surfaces to remain to the specified condition for each material, with a neat transition to adjacent finishes.
 - 2. Patch or replace portions of existing surfaces which are damaged, lifted, discolored, or showing other imperfections.
- J. Finish surfaces as specified in individual product Sections.
- K. If mechanical or electrical work is exposed accidentally during the work, re-cover and refinish to match.
 - 1. Patch as specified for patching new work.
- L. Clean existing systems and equipment.
- M. Remove demolition debris and abandoned items from alterations areas and dispose of off-site; do not burn or bury.
- N. Do not begin new construction in alterations areas before demolition is complete.
- O. Comply with all other applicable requirements of this section.

3.04 CUTTING AND PATCHING

- A. Whenever possible, execute the work by methods that avoid cutting or patching.
- B. See Alterations article above for additional requirements.
- C. Perform whatever cutting and patching is necessary to:
 - 1. Complete the work.
 - 2. Fit products together to integrate with other work.
 - 3. Provide openings for penetration of mechanical, electrical, and other services.
 - 4. Match work that has been cut to adjacent work.
 - 5. Repair areas adjacent to cuts to required condition.
 - 6. Repair new work damaged by subsequent work.
 - 7. Remove samples of installed work for testing when requested.
 - 8. Remove and replace defective and non-complying work.
- D. Execute cutting, fitting, and patching, including excavation and fill, to complete Work, and to:
 - 1. Fit the several parts together, to integrate with other Work.
 - 2. Uncover Work to install or correct ill-timed Work.
 - 3. Remove and replace defective and non-conforming Work.
 - 4. Remove samples of installed Work for testing.
 - 5. Provide openings in elements of Work for penetrations of mechanical and electrical Work.
- E. Execute work by methods that avoid damage to other work and that will provide appropriate surfaces to receive patching and finishing.
- F. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval. Do not cut existing structural concrete or reinforcement without prior review by Engineer. Where existing reinforcement is encountered, stop work and obtain direction before cutting or damaging reinforcement.
- G. Restore work with new products in accordance with requirements of Contract Documents.
- H. Fit work tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- I. Patching:
 - 1. Finish patched surfaces to match finish that existed prior to patching. On continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.
 - 2. Match color, texture, and appearance.
 - 3. Repair patched surfaces that are damaged, lifted, discolored, or showing other imperfections due to patching work. If defects are due to condition of substrate, repair substrate prior to repairing finish.

- J. Maintain integrity of wall, ceiling, or floor construction; completely seal voids.
- K. Refinish surfaces to match adjacent finish. For continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.
- L. Make neat transitions. Patch work to match adjacent work in texture and appearance. Where new work abuts or aligns with existing, perform a smooth and even transition.
- M. Identify any hazardous substance or condition exposed during the Work to the Engineer for decision or remedy.

3.05 SYSTEM STARTUP

- A. Coordinate schedule for start-up of various equipment and systems.
- B. Notify Engineer and Owner seven days prior to start-up of each item.
- C. Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, and for conditions that may cause damage.
- D. Verify tests, meter readings, and specified electrical characteristics agree with those required by the equipment or system manufacturer.
- E. Verify that wiring and support components for equipment are complete and tested.
- F. Do not place new or modified process systems into normal service until required testing, functional checks, controls testing, and manufacturer's startup activities have been completed.
- G. Execute start-up under supervision of responsible manufacturer's representative in accordance with manufacturers' instructions.
- H. When specified in individual specification Sections, require manufacturer to provide authorized representative to be present at site to inspect, check, and approve equipment or system installation prior to start-up, and to supervise placing equipment or system in operation.
- I. Submit a written report in accordance with Section 01 4000 that equipment or system has been properly installed and is functioning correctly.
- J. Perform subsequent testing, adjusting, and balancing of equipment and systems as required to provide operation according to the manufacturer's recommendations and the Contract Documents.

3.06 DEMONSTRATION AND INSTRUCTION

- A. Demonstrate operation and maintenance of products to Owner's personnel prior to date of Substantial Completion.
- B. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment at scheduled time, at designated location.
- C. Utilize operation and maintenance manuals as basis for instruction. Review contents of manual with Owner's personnel in detail to explain all aspects of operation and maintenance.
- D. Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during instruction.

3.07 CLOSEOUT PROCEDURES

- A. General: Complete closeout requirements in accordance with the General Conditions and requirements of this Section.
- B. Contractor's request for Substantial Completion:
 - 1. When Contractor considers the Work substantially complete and ready for its intended use, submit written notice to Owner and Engineer requesting determination of Substantial Completion.
 - 2. Include with the request a list of items remaining to be completed or corrected before final payment.
 - 3. Prior to requesting Substantial Completion, complete the following as applicable:
 - a. Complete required startup, testing, and commissioning activities necessary for operation of the Work.

- b. Submit required operation and maintenance data sufficiently complete for Owner's operation of the Work.
 - c. Complete required Owner training.
 - d. Obtain required inspections and approvals from authorities having jurisdiction.
 - e. Complete final cleaning required for Owner's use and operation of the Work.
 - f. Submit other documentation specifically required by the Contract Documents as a prerequisite to Substantial Completion.
- C. Inspection for Substantial Completion:
 - 1. Upon Contractor's request, Owner, Contractor, and Engineer will inspect the Work in accordance with the General Conditions to determine whether the Work is substantially complete.
 - 2. If Engineer determines that the Work is not substantially complete, Engineer will notify Contractor of deficiencies preventing Substantial Completion. Contractor shall complete or correct such deficiencies before requesting another inspection.
 - 3. If Engineer determines that the Work is substantially complete, Engineer will prepare the Certificate of Substantial Completion in accordance with the General Conditions. The Certificate will establish the date of Substantial Completion and will be accompanied by a list of items to be completed or corrected before final payment.
 - 4. Contractor shall promptly complete or correct items identified on the list within the time established in the Certificate of Substantial Completion. That aligns well with the EJCDC process: Contractor requests the determination, the parties inspect, and Engineer determines/certifies Substantial Completion. EJCDC C-625 is specifically intended to accompany the punch list and establish responsibilities during the period between Substantial Completion and final payment.
- D. Contractor's request for final inspection:
 - 1. When Contractor considers the Work complete, including completion or correction of items identified at Substantial Completion, notify Owner and Engineer in writing that the Work is complete and ready for final inspection.
 - 2. Before requesting final inspection, complete and submit closeout requirements applicable to the Work, including:
 - a. Final operation and maintenance manuals.
 - b. Record Documents.
 - c. Warranties, bonds, and certificates.
 - d. Spare parts, maintenance materials, and special tools required by the Contract Documents.
 - e. Final testing, startup, commissioning, and training documentation.
 - f. Final cleaning and site restoration.
 - g. Other closeout submittals required by Section 01 7800 and individual Specification Sections.
- E. Final Inspection:
 - 1. Owner, Contractor, and Engineer will conduct a final inspection in accordance with the General Conditions to determine whether the Work is complete.
 - 2. If Engineer determines that the Work is not complete, Contractor shall promptly complete or correct identified deficiencies and notify Owner and Engineer when the Work is ready for reinspection.
 - 3. Contractor shall be responsible for costs associated with additional inspections resulting from Contractor's failure to complete identified deficiencies, as provided by the Contract Documents.
- F. Final application for payment:
 - 1. After completing remaining corrective Work identified during final inspection and satisfying closeout requirements, submit the final Application for Payment and required supporting documentation in accordance with the General Conditions.

2. Engineer will review the final Application for Payment and, when the requirements of the Contract Documents have been satisfied, recommend final payment and issue notice of acceptability of the Work in accordance with the General Conditions.

END OF SECTION 01 7000

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**SECTION 01 7413
CLEANING**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Cleaning during progress and at the completion of the Work as required by General Conditions.

1.02 DISPOSAL REQUIREMENTS

- A. Conduct cleaning and disposal operations to comply with codes, ordinances, regulations, and anti-pollution laws.

1.03 RESPONSIBILITIES AND COORDINATION BETWEEN PRIME CONTRACTORS

- A. Contractor is responsible for cleaning their own installed materials and equipment, both during and at the completion of construction. Each Contractor is responsible for removing and disposing waste, rubbish, and debris off the site in an approved landfill area.
- B. If Contractor fails to clean exposed surfaces and/or remove debris from site, the Owner may clean up and charge the cost to the Contractor responsible as the Owner determines to be just.
- C. Contractor is responsible for final cleaning of floors, walks, and grounds.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Contractor to provide all equipment required to complete cleaning.
- B. Use only those cleaning materials which will not create hazards to health or property and which will not damage surfaces.
- C. Use only those cleaning materials and methods recommended by manufacturer of the surface material to be cleaned.
- D. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

PART 3 EXECUTION

3.01 DURING CONSTRUCTION

- A. Execute periodic cleaning to keep the work, the site, and adjacent properties free from accumulations of waste materials, rubbish and windblown debris, resulting from construction operations.
- B. Remove waste materials, debris, and rubbish from the site periodically and dispose of at legal disposal areas away from the site.
- C. After painting begins or permanent heating system is started, use vacuum cleaning in lieu of broom cleaning methods.

3.02 FINAL CLEANING

- A. In addition to the requirements for clean-up as specified in the General Conditions, the Contractor shall remove to the Owner's satisfaction, all asphalt or concrete spilled on or around the buildings. Dispose of all rubbish and debris from the site in an approved landfill area.
- B. Employ skilled workmen for final cleaning.
- C. Remove grease, mastic, adhesives, dust, dirt, stains, fingerprints, labels, and other foreign materials from sight-exposed interior and exterior surfaces.
- D. Wash and shine glazing and mirrors.
- E. Polish glossy surfaces to a clear shine.
- F. Broom clean exterior paved surfaces; rake clean other surfaces of the grounds.
- G. Prior to final completion, or Owner occupancy, the Contractor shall conduct an inspection of sight-exposed interior and exterior surfaces, and all work areas to verify that the entire work is clean.

END OF SECTION 01 7413

**SECTION 01 7800
CLOSEOUT SUBMITTALS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Submittals.
- B. Project Record Documents.
- C. Operation and Maintenance Data.
- D. Instruction of Owner's Personnel.
- E. Operation and Maintenance Data for Equipment and Systems
- F. Operation and Maintenance Manuals (Paper and Electronic)
- G. Warranties and Bonds.

1.02 RELATED REQUIREMENTS

- A. Section 01 3000 - ADMINISTRATIVE REQUIREMENTS: Submittals procedures, shop drawings, product data, and samples.
- B. Section 01 7000 - Execution and Closeout Requirements: Contract closeout procedures.
- C. Individual Product Sections: Specific requirements for operation and maintenance data.
- D. Individual Product Sections: Warranties required for specific products or Work.

1.03 SUBMITTALS

- A. Operation and Maintenance Data:
 - 1. Submit proposed O&M manual organization and table of contents early in construction. Submit preliminary O&M manuals for review not less than 60 days prior to anticipated startup or training of the applicable equipment or system.
 - 2. Submit three copies of approved data in final form prior to final inspection or acceptance.
- B. Warranties and Bonds:
 - 1. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within 10 days after acceptance.
 - 2. Make other submittals within 10 days after Date of Substantial Completion, prior to final Application for Payment.
 - 3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within 10 days after acceptance, listing the date of acceptance as the beginning of the warranty period.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 PROJECT RECORD DOCUMENTS

- A. Maintain on site one set of the following record documents; record actual revisions to the Work:
 - 1. Contract Drawings.
 - 2. Specifications.
 - 3. Addenda.
 - 4. Change Orders and other modifications to the Contract.
 - 5. Reviewed shop drawings, product data, and samples.
- B. Store record documents separate from documents used for construction.
- C. Record information concurrent with construction progress.
- D. Record Documents and Shop Drawings: Legibly mark each item to record actual construction including:
 - 1. Measured depths of foundations in relation to finish main floor datum.

2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 3. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
 4. Field changes of dimension and detail.
 5. Details not on original Contract drawings.
- E. Record final horizontal and vertical locations of buried process piping, valves, vaults, water piping, and other concealed utilities using dimensions referenced to permanent features and elevations referenced to the project datum.
- F. Submit documents to Engineer prior to claim for final Application for Payment.

3.02 OPERATION AND MAINTENANCE DATA

- A. Source Data: For each product or system, list names, addresses and telephone numbers of Subcontractors and suppliers, including local source of supplies and replacement parts.
- B. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.
- C. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Coordinate drawings with information in Project Record Documents to assure correct illustration of completed installation. Do not use Project Record Documents as maintenance drawings.
- D. Typed Text: As required to supplement product data for particular installation. Organize in consistent format under separate headings for different procedures. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.
- E. Copy of each warranty, Bond, and service contract issued. Provide information sheet for Owner's personnel, giving proper procedures in event of failure and instances which might affect validity of warranties or Bonds.

3.03 INSTRUCTION OF OWNER'S PERSONNEL

- A. Prior to final inspection or acceptance, fully instruct Owner's designated operating and maintenance personnel in operation, adjustment and maintenance of products, equipment and systems.
- B. Manual for equipment and systems shall constitute basis of instruction. Review contents of manual with personnel in full detail to explain all aspects of operations and maintenance.
- C. Any presentation or training materials shall be provided to the Owner in format presented (i.e. Microsoft format, Office 365 or less).

3.04 OPERATION AND MAINTENANCE DATA FOR EQUIPMENT AND SYSTEMS

- A. For Each Item of Equipment and Each System:
 1. Description of unit or system, and component parts.
 2. Identify function, normal operating characteristics, and limiting conditions.
 3. Include performance curves, with engineering data and tests.
 4. Complete nomenclature and model number of replaceable parts.
- B. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.
- C. Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.
- D. Maintenance Requirements: Include routine procedures and guide for preventative maintenance and trouble shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.

- E. Provide servicing and lubrication schedule, and list of lubricants required.
- F. Include manufacturer's printed operation and maintenance instructions.
- G. Include sequence of operation by controls manufacturer.
- H. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance. Include predicted life of parts subject to wear and list of items recommended to be stocked as spare parts.
- I. Provide control diagrams by controls manufacturer as installed.
- J. Provide Contractor's coordination drawings, with color coded piping diagrams as installed.
- K. Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
- L. Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.
- M. Content for each electrical and electronic system, as appropriate.
 - 1. Description of system and component parts:
 - a. Function, normal operating characteristics, and limiting conditions.
 - b. Performance curves, engineering data, and tests.
 - c. Complete nomenclature and commercial number of replacement parts.
 - 2. Circuit directories of panel boards:
 - a. Electrical service.
 - b. Controls.
 - c. Communications.
 - 3. As-installed color coded wiring diagrams.
 - 4. Operating procedures:
 - a. Routine and normal operating instructions.
 - b. Sequences required.
 - c. Special operating instructions.
 - 5. Maintenance procedures:
 - a. Routine operations.
 - b. Guide to "trouble-shooting".
 - c. Disassembly, repair, and assembly.
 - d. Adjustment and checking.
 - 6. Manufacturer's printed operating and maintenance instructions.
 - 7. List of original manufacturer's spare parts, manufacturer's current prices, and recommended quantities to be maintained in storage.
- N. Prepare and include additional data when need for such data becomes apparent during instruction of Owner's personnel.
- O. Additional Requirements: As specified in individual product specification sections.

3.05 OPERATION AND MAINTENANCE MANUALS (HARD COPIES - PAPER)

- A. Prepare instructions and data by personnel:
 - 1. Trained and experienced in maintenance and operation of described products.
 - 2. Familiar with requirements of this section.
 - 3. Skilled as technical writers to extent required to communicate essential data.
 - 4. Skilled as draftsmen competent to prepare required drawings.
- B. Prepare data in the form of an instructional manual for use by Owner's personnel.
- C. Format: 8-1/2 x 11 inch paper with 20 lb. minimum, white, for typed pages.
- D. Binders: Commercial quality, 8-1/2 by 11 inch binders with durable and cleanable plastic covers; 3 inch maximum ring size. When multiple binders are used, correlate data into related consistent groupings.

1. Label spine of binder with identity of general subject matter covered in manual.
- E. Cover: Identify each binder with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS; identify: title of Project, identity of separate structure as applicable, and identity of general subject matter covered in manual.
- F. Dividers: Provide tabbed dividers for each separate product and system; identify the contents on the divider tab; immediately following the divider tab include a description of product and major component parts of equipment.
- G. Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.
- H. Contents: Neatly typewritten table of contents for each volume, arranged in systematic order with consecutive page numbers.
 1. Contractor, name of responsible principal, address, and telephone number.
 2. List of each product required to be included, indexed to content of volume.
 3. List, with each product, name, address, and telephone number of:
 - a. Subcontractor or installer.
 - b. Maintenance contractor, as appropriate.
 - c. Identify area of responsibility of each.
 - d. Local source of supply for parts and replacement and list of recommended spare parts.
 4. Identify each product by product name and other identifying symbols as set forth in Contract documents, including nameplate information and shop order numbers for each item of equipment furnished.
 5. Three-hole punch data for binding and composition; arrange printing so that punched holes do not obliterate data.
 6. Material shall be suitable for reproduction, with quality equal to original. Photocopying of material will be acceptable, except for material containing photographs.

3.06 OPERATION AND MAINTENANCE MANUALS (ELECTRONIC)

- A. Prepare instructions and data by personnel:
 1. Trained and experienced in maintenance and operation of described products.
 2. Familiar with requirements of this section.
 3. Skilled as technical writers to extent required to communicate essential data.
 4. Skilled as draftsmen competent to prepare required drawings.
- B. Prepare data in the form of an instructional manual for use by Owner's personnel.
- C. Format: Electronic copy shall be delivered on a thumb drive in bookmarked version of Adobe Acrobat's Portable Document Format (PDF). The PDF file(s) shall be fully indexed using the table of contents, searchable with thumbnails generated.
- D. Cover: Identify each thumb drive with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS; identify: title of Project, identity of separate structure as applicable, and identity of general subject matter covered in manual.
 1. Contents: Neatly typewritten table of contents for each volume, arranged in systematic order.
 2. List of each product required to be included, indexed to content of volume.
 3. List, with each product, name, address, and telephone number of:
 - a. Subcontractor or installer.
 - b. Maintenance contractor, as appropriate.
 - c. Identify area of responsibility of each.
 - d. Local source of supply for parts and replacement and list of recommended spare parts.
 4. Identify each product by product name and other identifying symbols as set forth in Contract Documents, including nameplate information and shop order numbers for each item of equipment furnished.

3.07 WARRANTIES AND BONDS

- A. Obtain warranties and bonds, executed in duplicate by responsible subcontractors, suppliers, and manufacturers, within 10 days after completion of the applicable item of work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until Date of Substantial Completion is determined.
- B. Verify that documents are in proper form, contain full information, and are notarized.
- C. Co-execute submittals when required.
- D. Retain warranties and bonds until time specified for submittal.

END OF SECTION 01 7800

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**SECTION 02 4100
DEMOLITION**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. The Contractor shall furnish all supervised labor, materials, equipment, studies, and incidentals required for the demolition and modification of existing facilities as identified in the Contract Drawings as outlined below:
 - 1. Selective demolition of existing equipment, piping, mechanical equipment, electrical equipment and miscellaneous appurtenances encountered during construction operations.
 - 2. Temporary modification of structures, equipment, appurtenances and utilities as necessary to allow for operation of the facilities during construction.
 - 3. Provisions and procedures for containment, removal, and legal disposal of wastewater, residual solids, debris, and other materials encountered within existing facilities and piping as part of demolition and modification work.
 - 4. Provisions and legal procedures for proper disposal of any existing wastewater and/or debris in the facilities or associated piping as part of the demolition process.
- B. This section may not cover all of the activities necessary to perform the Work. The Contractor shall exercise due concern for the utility system operation and shall direct all of the Contractor's activities toward maintaining continuous operation of the existing facilities and minimizing operation impacts.

1.02 REFERENCE STANDARDS

- A. 29 CFR 1926 - Safety and Health Regulations for Construction.
- B. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations.

1.03 SUBMITTALS

- A. See Section 01 3000 - ADMINISTRATIVE REQUIREMENTS for submittal procedures.
- B. Demolition Plan: Submit demolition plan as required by OSHA and local AHJs.
 - 1. Indicate extent of demolition, removal sequencing, bracing and shoring, and location and construction of barricades and fences.
 - 2. Identify interruption to plant flow or utility services.
 - 3. Include a summary of safety procedures
 - 4. Identify locations of temporary protection and means of egress.
- C. Predemolition Photographs or Video Record: Show existing conditions of adjoining construction and site improvements, including finish surfaces, that might be misconstrued as damage caused by building demolition operations. Submit before Work begins.
- D. Inventory: After demolition is complete, submit a list of items that have been removed and salvaged.
- E. Project Record Documents: Accurately record actual locations of capped and active utilities and subsurface construction.

1.04 DEFINITIONS

- A. Demolish/Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and salvaged or recycled.
- B. Remove and Salvage: Detach items from existing construction and deliver them to Owner.
- C. Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed and salvaged, or recycled.

1.05 MATERIALS OWNERSHIP

- A. The Owner shall have first salvage rights to all fixtures, devices and equipment removed. Contractor to coordinate with Owner prior to demolition.

1.06 QUALITY ASSURANCE

- A. Demolition Firm Qualifications: An experienced firm that has specialized in demolition work similar in material and extent to that indicated for this Project.
- B. Standards: Comply with ANSI A10.6 and NFPA 241.

1.07 REGULATORY REQUIREMENTS

- A. Conform to applicable city, county, state, and federal codes for demolition work, disposal of debris, dust control, products requiring electrical disconnection and re-connection.
- B. Comply with governing EPA notification regulations before beginning demolition. Comply with hauling and disposal regulations of authorities having jurisdiction

1.08 PROJECT CONDITIONS

- A. Minimize production of dust due to demolition operations; do not use water if that will result in ice, flooding, sedimentation of public waterways or storm sewers, or other pollution.
- B. Comply with other requirements specified in Section 01 7000.
- C. Arrange demolition schedule so as not to interfere with Owner's on-site operations.
- D. Owner will continue to operate the WPCP and existing process facilities throughout construction. Conduct demolition and modification work so that Owner's operations are not disrupted except for planned outages permitted by Section 01 1000.
- E. Owner will occupy another building immediately adjacent to demolition area. Conduct building demolition so Owner's operations will not be disrupted.
 - 1. Provide not less than 72 hours' notice to Owner of activities that will affect Owner's operations.
 - 2. Maintain access to existing walkways, exits, and other adjacent occupied or used facilities.
 - a. Do not close or obstruct walkways, exits, or other occupied or used facilities without written permission from authorities having jurisdiction.
- F. Owner assumes no responsibility for buildings and structures to be demolished.
 - 1. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
- G. Hazardous Materials:
 - 1. If materials suspected of containing hazardous materials are encountered, do not disturb the material and immediately notify Owner and Engineer. Further handling, testing, removal, or disposal will be addressed in accordance with the Contract Documents and applicable requirements.
- H. Perform demolition operations in manner that in no way endangers personnel, public, existing structures, utilities, roadways, or facilities not to be demolished. If damages do occur, the Contractor will be held responsible and shall repair or replace any damage at no additional cost to Owner.

PART 2 PRODUCTS -- NOT USED

PART 3 EXECUTION

3.01 DEMOLITION

- A. Remove items indicated on the Drawings, for salvage and relocation.
- B. Fill excavations, open pits, and holes in ground areas generated as result of removals, using approved fill.

3.02 EXAMINATION

- A. Survey existing conditions and correlate with requirements indicated to determine extent of building demolition required.
- B. Review Project Record Documents of existing construction provided by Owner. Owner does not guarantee that existing conditions are the same as those indicated in Project Record Documents.

- C. Inventory and record the condition of items to be removed and salvaged.
- D. When unanticipated mechanical, electrical, or structural elements are encountered, investigate and measure the nature and extent of the element. Promptly submit a written report to Engineer.

3.03 GENERAL PROCEDURES AND PROJECT CONDITIONS

- A. Comply with requirements in Section 01 7000.
- B. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
 - 1. Obtain required permits.
 - 2. Comply with applicable requirements of NFPA 241.
 - 3. Use of explosives is not permitted.
 - 4. Take precautions to prevent catastrophic or uncontrolled collapse of structures to be removed; do not allow worker or public access within range of potential collapse of unstable structures.
 - 5. Provide, erect, and maintain temporary barriers and security devices.
 - 6. Conduct operations to minimize effects on and interference with adjacent structures and occupants.
 - 7. Do not close or obstruct roadways or sidewalks without permits from authority having jurisdiction.
 - 8. Conduct operations to minimize obstruction of public and private entrances and exits. Do not obstruct required exits at any time. Protect persons using entrances and exits from removal operations.
 - 9. Obtain written permission from owners of adjacent properties when demolition equipment will traverse, infringe upon, or limit access to their property.
- C. Do not begin removal until receipt of notification to proceed from Owner.
- D. Do not begin removal until built elements to be salvaged or relocated have been removed.
- E. Protect existing structures and other elements to remain in place and not removed.
 - 1. Provide bracing and shoring.
 - 2. Prevent movement or settlement of adjacent structures.
 - 3. Stop work immediately if adjacent structures appear to be in danger.
- F. Perform demolition in a manner that maximizes salvage and recycling of materials.
 - 1. Dismantle existing construction and separate materials.
 - 2. Set aside reusable, recyclable, and salvageable materials; store and deliver to collection point or point of reuse.

3.04 EXISTING UTILITIES

- A. Coordinate work with utility companies. Notify utilities before starting work, comply with their requirements, and obtain required permits.
 - 1. Utility locations shown on the Plans should be considered approximate and may not be complete. Field verify all utility locations.
 - 2. Notice provided to each utility sufficiently in advance of such operations to allow the utility time to mark the location of, relocate, adjust, or otherwise protect their facilities. Reach an agreement with each utility on appropriate action necessary to protect or relocate the utility facilities. The cost of such action to protect the facilities, except for locates, shall be borne by the Contractor. Utilize Iowa Utility One-Call at 800-292-8989 and other applicable utility owners for locates for those utilities which subscribe to this service.
 - 3. At all times conduct operations so that necessary clearances are maintained and said utility facilities are protected. Comply with all Local, State, and Federal, or other regulations in performing work near utility facilities.

4. Should the Contractor damage any of the utility facilities during Contractor's operations or determine the work cannot be performed safely, the Contractor shall immediately notify the utility involved and cease work until arrangements are made to prevent further damage or a serious accident. The Owner is not responsible for the cost of any damage, including disruption of service, to any utility facility resulting from Contractor's operation.
 5. Failure of the Contractor to provide timely notice to the utility or to conduct operations in such manner that proper clearances are maintained and the utility facilities are protected at all times will be grounds for the issuance of a Stop Work Order.
- B. Protect existing utilities to remain from damage.
 - C. Do not disrupt public utilities without permit from authority having jurisdiction.
 - D. Do not close, shut off, or disrupt existing processes or utility systems without coordination and notification in accordance with Section 01 1000.
 - E. Locate and mark utilities to remain; mark using highly visible tags or flags, with identification of utility type; protect from damage due to subsequent construction, using substantial barricades if necessary.
 - F. Mark location and termination of utilities.
 - G. Disconnect, remove, cap, and identify designated utilities within demolition areas.
 - H. Remove exposed piping, valves, meters, equipment, supports, and foundations of disconnected and abandoned utilities.
 - I. Prepare building demolition areas by disconnecting and capping utilities outside the demolition zone. Identify and mark, in same manner as other utilities to remain, utilities to be reconnected.
 - J. Where there exists the potential for a conflict between the proposed line with an existing utility line, locate and expose any utility in advance of the proposed construction so determinations as to the required adjustments can be made.

3.05 SELECTIVE DEMOLITION FOR ALTERATIONS

- A. Existing construction and utilities indicated on drawings are based on casual field observation and existing record documents only.
 1. Verify construction and utility arrangements are as indicated.
 2. Report discrepancies to Engineer before disturbing existing installation.
 3. Beginning of demolition work constitutes acceptance of existing conditions that would be apparent upon examination prior to starting demolition.
- B. Separate areas in which demolition is being conducted from areas that remain occupied.
 1. Provide, erect, and maintain temporary dustproof partitions of construction specified in Section 01 5000 in locations indicated on drawings.
- C. Maintain weatherproof exterior building enclosure, except for interruptions required for replacement or modifications; prevent water and humidity damage.
- D. Remove existing work as indicated and required to accomplish new work.
 1. Remove rotted wood, corroded metals, and deteriorated masonry and concrete; replace with new construction indicated.
 2. Remove items indicated on drawings.
- E. Services including, but not limited to, Plumbing and Electrical: Remove existing systems and equipment as indicated.
 1. Maintain existing active systems to remain in operation, and maintain access to equipment and operational components.
 2. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.
 3. See Section 01 1000 - Summary for limitations on outages and required notifications.
 4. Verify that abandoned services serve only abandoned facilities before removal.

5. Remove abandoned pipe, ducts, conduits, and equipment, including those above accessible ceilings. Remove back to source of supply where possible, otherwise cap stub and tag with identification.
- F. Removed and Salvaged Items:
 1. Clean salvaged items of dirt and demolition debris.
 2. Pack or crate items after cleaning. Identify contents of containers.
 3. Store items in a secure area until delivery to Owner.
 4. Transport items to Owner's storage area on-site.
 5. Protect items from damage during transport and storage.
- G. Protect existing work to remain.
 1. Prevent movement of structure. Provide shoring and bracing as required.
 2. Perform cutting to accomplish removal work neatly and as specified for cutting new work.
 3. Do not cut or damage existing structural reinforcement unless specifically indicated or authorized by Engineer. If reinforcing steel is encountered during demolition or cutting, stop work in the affected area and notify Engineer before proceeding.
 4. Repair adjacent construction and finishes damaged during removal work.
 5. Patch to match new work.

3.06 MECHANICAL DEMOLITION

- A. Concrete: Cut concrete full depth at junctures with construction indicated to remain, using power-driven saw, then remove concrete between saw cuts.
- B. Masonry: Cut masonry at junctures with construction indicated to remain, using power-driven saw, then remove masonry between saw cuts.
- C. Concrete Slabs-on-Grade: Saw-cut perimeter of area to be demolished at junctures with construction indicated to remain, then break up and remove.
- D. Structural Steel: Dismantle field connections without bending or damaging steel members. Do not use flame-cutting torches unless otherwise authorized by Engineer.
- E. Equipment: Disconnect equipment at nearest fitting connection to services, complete with service valves. Remove as whole units, complete with controls.
- F. Coordinate isolation and draining of process equipment and piping with Owner. Contractor shall contain and remove residual wastewater and solids before demolition.

3.07 DEBRIS AND WASTE REMOVAL

- A. Remove debris, junk, and trash from site.
- B. Leave site in clean condition, ready for subsequent work.
- C. Clean up spillage and wind-blown debris from public and private lands.

3.08 REPAIRS

- A. General: Promptly repair damage to adjacent construction caused by building demolition operations.
- B. Where repairs to existing surfaces are required, patch to produce surfaces suitable for new materials.
- C. Restore exposed finishes of patched areas and extend restoration into adjoining construction in a manner that eliminates evidence of patching and refinishing.

3.09 DISPOSAL OF DEMOLISHED MATERIALS

- A. General: Except for items or materials indicated to be recycled, reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, remove demolished materials from Project site and legally dispose of them in an EPA-approved landfill.
 1. Do not allow demolished materials to accumulate on-site.

2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
- B. Burning: Do not burn demolished materials.
- C. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

3.10 CLEANING

- A. Clean adjacent structures and improvements of dust, dirt, and debris caused by building demolition operations. Return adjacent areas to condition existing before building demolition operations began.

END OF SECTION 02 4100

**SECTION 033000
CAST-IN-PLACE CONCRETE**

PART 1

1.01 SECTION INCLUDES

- A. Concrete formwork.
- B. Concrete foundations for water storage tank(s).
- C. Concrete reinforcement.
- D. Joint devices associated with concrete work.
- E. Concrete curing.

1.02 REFERENCE STANDARDS

- A. ACI CODE-318 - Building Code for Structural Concrete—Code Requirements and Commentary; 2021
- B. ACI CODE-350 - Code Requirements for Environmental Engineering Concrete Structures; 2020
- C. ACI PRC-211.1 - Selecting Proportions for Normal-Density and High Density-Concrete - Guide; 2022.
- D. ACI PRC-302.1 - Guide to Concrete Floor and Slab Construction; 2015.
- E. ACI PRC-304 - Guide for Measuring, Mixing, Transporting, and Placing Concrete; 2000 (Reapproved 2009).
- F. ACI PRC-305 - Guide to Hot Weather Concreting; 2020.
- G. ACI PRC-306 - Guide to Cold Weather Concreting; 2016.
- H. ACI PRC-308 - Curing of Concrete—Guide; 2016.
- I. ACI PRC-347 - Guide to Formwork for Concrete; 2014 (Reapproved 2021).
- J. ACI SPEC-117 - Specification for Tolerances for Concrete Construction and Materials and Commentary; 2010 (Reapproved 2015).
- K. ACI SPEC-301 - Specifications for Concrete Construction; 2020.
- L. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement; 2026.
- M. ASTM C33/C33M - Standard Specification for Concrete Aggregates; 2024a.
- N. ASTM C39/C39M - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens; 2026.
- O. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete; 2026a.
- P. ASTM C109/C109M - Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 50 mm [2 in.] Cube Specimens); 2026.
- Q. ASTM C143/C143M - Standard Test Method for Slump of Concrete; 2026a.
- R. ASTM C260/C260M - Standard Specification for Air-Entraining Admixtures for Concrete; 2024.
- S. ASTM C494/C494M - Standard Specification for Chemical Admixtures for Concrete; 2024.
- T. ASTM C595/C595M - Standard Specification for Blended Hydraulic Cements; 2025.
- U. ASTM C618 - Standard Specification for Coal Ash and Raw or Calcined Natural Pozzolan for Use in Concrete; 2025a.
- V. ASTM C1107/C1107M - Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink); 2020.
- W. ASTM C1602/C1602M - Standard Specification for Mixing Water Used in the Production of Hydraulic Cement Concrete; 2022.

- X. COE CRD-C 572 - Handbook for Concrete and Cement Corps of Engineers Specifications for Polyvinylchloride Waterstop; 1974.
- Y. NSF 61 - Drinking Water System Components - Health Effects; 2025, with Addendum
- Z. NSF 372 - Drinking Water System Components - Lead Content; 2024.

1.03 SUBMITTALS

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data: Submit manufacturers' data on manufactured products showing compliance with specified requirements and installation instructions.
- C. Mix Design: Submit proposed concrete mix design. Submittal shall include:
 - 1. Mill test reports for cement and fly ash showing conformance with ASTM standards.
 - 2. Aggregate types, source, gradation, specific gravities and certificates of compliance.
 - 3. Admixture product data and certificates of compliance
 - 4. Evidence of the ability of the proposed concrete mixtures to meet the requirements based on field test records or laboratory trial batches.
- D. Test Reports: Submit report for each test or series of tests specified.
- E. Submit product data and manufacturers instructions for bond breaker / release agent / curing compound, joint sealants, backer rod, and expansion joint material to the structural engineer for review prior to construction.

1.04 QUALITY ASSURANCE

- A. Perform work of this section in accordance with ACI SPEC-301 and ACI CODE-318.
- B. Follow recommendations of ACI PRC-305 when concreting during hot weather.
- C. Follow recommendations of ACI PRC-306 when concreting during cold weather.

PART 2

2.01 FORMWORK

- A. Formwork Design and Construction: Comply with guidelines of ACI PRC-347 to provide formwork that will produce concrete complying with tolerances of ACI SPEC-117.
- B. Form Materials: Contractor's choice of standard products with sufficient strength to withstand hydrostatic head without distortion in excess of permitted tolerances.
 - 1. Form Coating: Release agent that will not adversely affect concrete or interfere with application of coatings.

2.02 REINFORCEMENT MATERIALS

- A. Reinforcing Steel: ASTM A615/A615M, Grade 60 (60,000 psi) (420 MPa).
 - 1. Type: Deformed billet-steel bars.
 - 2. Finish: Unfinished, unless otherwise indicated.
- B. Reinforcement Accessories:
 - 1. Tie Wire: Annealed, minimum 16 gauge, 0.0508 inch (1.29 mm).
 - 2. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for adequate support of reinforcement during concrete placement.

2.03 CONCRETE MATERIALS

- A. Blended Hydraulic Cement: ASTM C595/C595M, Type IL(10).
- B. Fine and Coarse Aggregates: ASTM C33/C33M.
 - 1. Acquire aggregates for entire project from same source.
- C. Fly Ash: ASTM C618, Class C or F.
- D. Water: ASTM C1602/C1602M; clean, potable, and not detrimental to concrete.

2.04 ADMIXTURES

- A. Do not use chemicals that will result in soluble chloride ions in excess of 0.1 percent by weight of cement.
- B. Air Entrainment Admixture: ASTM C260/C260M.
- C. High Range Water Reducing Admixture: ASTM C494/C494M Type F.

2.05 ACCESSORY MATERIALS

- A. Non-Shrink Cementitious Grout: Premixed compound consisting of nonmetallic aggregate, cement, water reducing and plasticizing agents.
 - 1. Grout: Comply with ASTM C1107/C1107M.
 - 2. Minimum Compressive Strength at 28 Days, ASTM C109/C109M: 7,000 pounds per square inch (48 MPa).

2.06 BONDING AND JOINTING PRODUCTS

- A. Waterstops: PVC, complying with COE CRD-C 572 and NSF 61.
 - 1. Configuration: Ribbed with Centerbulb.
 - 2. Size: 1" OD x 6" L
- B. Waterstops: Bentonite and butyl rubber, complying with NSF 61 and NSF 372.
 - 1. Configuration: As indicated on drawings.
 - 2. Size: 1/4" x 1"

2.07 CONCRETE MIX DESIGN

- A. Proportioning Normal Weight Concrete: Comply with ACI PRC-211.1 recommendations.
- B. Concrete Strength: Establish required average strength for each type of concrete on the basis of field experience or trial mixtures, as specified in ACI SPEC-301.
 - 1. For trial mixtures method, employ independent testing agency acceptable to Architect for preparing and reporting proposed mix designs.
- C. Admixtures: Add acceptable admixtures as recommended in ACI PRC-211.1 and at rates recommended or required by manufacturer.
- D. Normal Weight Concrete:
 - 1. Refer to drawings for Concrete Material Schedule

2.08 MIXING

- A. Transit Mixers: Comply with ASTM C94/C94M.
- B. Adding Water: If concrete arrives on-site with slump less than suitable for placement, do not add water that exceeds the maximum water-cement ratio or exceeds the maximum permissible slump.

PART 3

3.01 EXAMINATION

- A. Verify lines, levels, and dimensions before proceeding with work of this section.

3.02 PREPARATION

- A. Formwork: Comply with requirements of ACI SPEC-301. Design and fabricate forms to support all applied loads until concrete is cured and for easy removal without damage to concrete.
- B. Verify that forms are clean and free of rust before applying release agent.
- C. Coordinate placement of embedded items with erection of concrete formwork and placement of form accessories.

3.03 INSTALLING REINFORCEMENT AND OTHER EMBEDDED ITEMS

- A. Comply with requirements of ACI SPEC-301. Clean reinforcement of loose rust and mill scale, and accurately position, support, and secure in place to achieve not less than minimum concrete coverage required for protection.

- B. Verify that anchors, seats, plates, reinforcement and other items to be cast into concrete are accurately placed, positioned securely, and will not interfere with concrete placement.

3.04 PLACING CONCRETE

- A. Place concrete in accordance with ACI PRC-304.
- B. Maintain records of concrete placement. Record date, location, quantity, air temperature, and test samples taken.
- C. Ensure reinforcement, inserts, waterstops, embedded parts, and formed construction joint devices will not be disturbed during concrete placement.

3.05 CONCRETE FINISHING

- A. Exposed Form Finish: Rub down or chip off and smooth fins or other raised areas 1/4 inch (6 mm) or more in height.
- B. Concrete Slabs: Finish to requirements of ACI PRC-302.1 and as follows:
 - 1. Other Surfaces to Be Left Exposed: Trowel as described in ACI PRC-302.1, minimizing burnish marks and other appearance defects.
- C. Refer to drawings for floor slopes

3.06 CURING AND PROTECTION

- A. Comply with requirements of ACI PRC-308. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.
- B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.

3.07 FIELD QUALITY CONTROL

- A. An independent testing agency will perform field quality control tests, as specified in Section 014000 - Quality Requirements.
- B. Provide free access to concrete operations at project site and cooperate with appointed firm.
- C. Tests of concrete and concrete materials may be performed at any time to ensure compliance with specified requirements.
- D. Compressive Strength Tests: ASTM C39/C39M, for each test, mold and cure four concrete test cylinders. Obtain test samples for every 150 cubic yards (115 cu m) or less of each class of concrete placed.
- E. Take one additional test cylinder during cold weather concreting, cured on job site under same conditions as concrete it represents.
- F. Perform one slump test for each set of test cylinders taken, following procedures of ASTM C143/C143M.
- G. Perform one air test for each set of test cylinders taken, following the procedures of ASTM C231/C231M

3.08 DEFECTIVE CONCRETE

- A. Test Results: The testing agency shall report test results in writing to Engineer and Contractor within 24 hours of test.
- B. Defective Concrete: Concrete not complying with required lines, details, dimensions, tolerances or specified requirements.
- C. Repair or replacement of defective concrete will be determined by the Engineer. The cost of additional testing shall be borne by Contractor when defective concrete is identified.

END OF SECTION

**SECTION 055000
METAL FABRICATIONS**

PART 1

1.01 SECTION INCLUDES

- A. Shop fabricated steel items.

1.02 REFERENCE STANDARDS

- A. ASTM A36/A36M - Standard Specification for Carbon Structural Steel; 2019.
- B. AWS D1.1/D1.1M - Structural Welding Code - Steel; 2025, with Amendment (2026).
- C. SSPC-Paint 20 - Zinc-Rich Coating (Type I - Inorganic, and Type II - Organic); 2019.

1.03 SUBMITTALS

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories. Include erection drawings, elevations, and details where applicable.

PART 2

2.01 MATERIALS - STEEL

- A. Steel Sections: ASTM A36/A36M.
- B. Mechanical Fasteners: Same material as or compatible with materials being fastened; type consistent with design and specified quality level.
- C. Welding Materials: AWS D1.1/D1.1M; type required for materials being welded.
- D. Touch-Up Primer for Galvanized Surfaces: SSPC-Paint 20, Type I - Inorganic, complying with VOC limitations of authorities having jurisdiction.

2.02 FABRICATION

- A. Fit and shop assemble items in largest practical sections, for delivery to site.
- B. Fabricate items with joints tightly fitted and secured.
- C. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.
- D. Furnish components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted otherwise.

PART 3

3.01 EXAMINATION

- A. Verify that field conditions are acceptable and are ready to receive work.

3.02 PREPARATION

- A. Furnish setting templates to the appropriate entities for steel items required to be cast into concrete.

3.03 INSTALLATION

- A. Install items plumb and level, accurately fitted, free from distortion or defects.
- B. Provide for erection loads, and for sufficient temporary bracing to maintain true alignment until completion of erection and installation of permanent attachments.
- C. Obtain approval prior to site cutting or making adjustments not scheduled.

END OF SECTION

**SECTION 071400
FLUID-APPLIED WATERPROOFING**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Polyurethane waterproofing.

1.02 REFERENCE STANDARDS

- A. ASTM C836/C836M - Standard Specification for High Solids Content, Cold Liquid-Applied Elastomeric Waterproofing Membrane for Use with Separate Wearing Course; 2018 (Reapproved 2022).
- B. ASTM D412 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers--Tension; 2016 (Reapproved 2021).
- C. ASTM D2240 - Standard Test Method for Rubber Property--Durometer Hardness; 2015 (Reapproved 2021).
- D. ASTM D4541 - Standard Test Method for Pull-Off Strength of Coatings Using Portable Adhesion Testers; 2022.
- E. NRCA (WM) - The NRCA Waterproofing Manual; 2021.

1.03 SUBMITTALS

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide data for membrane, flexible flashings, joint cover sheet, and joint and crack sealants.
- C. Manufacturer's Installation Instructions: Indicate perimeter conditions requiring special attention and acceptable installation temperatures.
- D. Warranty Documentation:
 - 1. Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

1.04 WARRANTY

- A. See Section 017800 - Closeout Submittals for additional warranty requirements.
- B. Installer Warranty: Provide 4-year warranty for waterproofing failing to resist penetration of water commencing on Date of Substantial Completion. Complete forms in Owner's name and register with installer.

PART 2 PRODUCTS

2.01 FLUID-APPLIED WATERPROOFING MATERIALS

- A. Polyurethane Waterproofing: Cold-applied, high solids content polyurethane waterproofing complying with ASTM C836/C836M.
 - 1. Cured Thickness: 60 mil, 0.060 inch (1.52 mm), minimum.
 - 2. Suitable for installation over concrete substrates.
 - 3. Tensile Strength: 400 psi (2.758 MPa), minimum, measured in accordance with ASTM D412.
 - 4. Ultimate Elongation: 180 percent, minimum, measured in accordance with ASTM D412.
 - 5. Durometer Hardness, Type A: 30, minimum, in accordance with ASTM D2240.
 - 6. Adhesion: 150 psi (1.03 MPa), minimum, measured in accordance with ASTM D4541.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.

- B. Verify substrate surfaces are free of frozen matter, dampness, loose particles, cracks, pits, projections, penetrations, or foreign matter detrimental to adhesion or application of waterproofing system.
- C. Verify that substrate surfaces are smooth, free of honeycomb or pitting, and not detrimental to full contact bond of waterproofing materials.

3.02 PREPARATION

- A. Clean and prepare surfaces to receive waterproofing in accordance with manufacturer's instructions.
- B. Install cant strips at inside corners.

3.03 INSTALLATION

- A. Install waterproofing to specified minimum thickness in accordance with manufacturers instructions and NRCA (WM) applicable requirements.
- B. Seal membrane and flashings to adjoining surfaces.

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**SECTION 072100
THERMAL INSULATION**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Board insulation at tank vault.

1.02 REFERENCE STANDARDS

- A. ASTM C578 - Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation; 2023.
- B. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2026a.

1.03 SUBMITTALS

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide data on product characteristics, performance criteria, and product limitations.

PART 2 PRODUCTS

2.01 APPLICATIONS

- A. Insulation at Perimeter of Foundation: Extruded polystyrene (XPS) board.

2.02 FOAM BOARD INSULATION MATERIALS

- A. Extruded Polystyrene (XPS) Board Insulation: Comply with ASTM C578 with either natural skin or cut cell surfaces.
 - 1. Flame Spread Index (FSI): Class A - 0 to 25, when tested in accordance with ASTM E84.
 - 2. Smoke Developed Index (SDI): 450 or less, when tested in accordance with ASTM E84.
 - 3. Type and Thermal Resistance, R-value (RSI-value): Type IV, 5.0 (0.88), minimum, per 1 inch (25.4 mm) thickness at 75 degrees F (24 degrees C) mean temperature.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that substrate, adjacent materials, and insulation materials are dry and that substrates are ready to receive insulation.
- B. Verify substrate surfaces are flat, free of honeycomb, fins, irregularities, or materials or substances that may impede adhesive bond.

3.02 BOARD INSTALLATION AT FOUNDATION PERIMETER

- A. Install boards vertically on foundation perimeter.
- B. Cut and fit insulation tightly to protrusions or interruptions to the insulation plane.

3.03 PROTECTION

- A. Do not permit installed insulation to be damaged prior to its concealment.

END OF SECTION

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**SECTION 09 9000
PAINTING AND COATING**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Responsibility for surface preparation and primary coating of equipment and motors shall be equipment manufacturers. Equipment to be finish coated and coating system is identified in equipment specification section(s).
- B. Factory-applied coating systems for the bolted steel flow equalization basin are specified in Section 33 3613 and are not included in this Section except for field repair or touch-up where specifically required.
- C. Field application of paints.
- D. See Schedule - Surfaces to be Finished, at end of this Section.

1.02 REFERENCES

- A. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency.
- B. ASTM D16 - Standard Terminology for Paint, Related Coatings, Materials, and Applications.
- C. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
- D. AWWA C204 - Chlorinated Rubber-Alkyd Paint Systems for the Exterior of Above Ground Steel Water Piping.
- E. AWWA D102 - Painting Steel Water Storage Tanks.
- F. NACE (IMP) - Industrial Maintenance Painting; NACE International; current edition.
- G. NPCA (National Paint and Coatings Association) - Guide to U.S. Government Paint Specifications.
- H. PDCA (Painting and Decorating Contractors of America) - Painting - Architectural Specifications Manual.
- I. SSPC SP-1 - Surface Preparation Specification No. 1 - Solvent Cleaning.
- J. SSPC SP-2 - Surface Preparation Specification No. 2 - Hand Tool Cleaning.
- K. SSPC SP-3 - Surface Preparation Specification No. 3 - Power Tool Cleaning.
- L. SSPC SP-5 - Surface Preparation Specification No. 5 - White Metal Blast Cleaning.
- M. SSPC SP-6 - Surface Preparation Specification No. 6 - Commercial Blast Cleaning.
- N. SSPC SP-7 - Surface Preparation Specification No. 7 - Brush-Off Blast Cleaning.
- O. SSPC SP-10 - Surface Preparation Specification No. 10 - Near-White Metal Blast Cleaning.
- P. SSPC SP-11 - Surface Preparation Specification No. 11 - Power Tool Cleaning to White Metal.
- Q. SSPC SP-12 - Surface Preparation Specification No. 12 - High Pressure Water Cleaning.
- R. SSPC SP-13 - Surface Preparation Specification No. 13 - Concrete Cleaning.
- S. SSPC (PM1) - Good Painting Practice: SSPC Painting Manual, Vol. 1; Society for Protective Coatings.

1.03 DEFINITIONS

- A. Conform to ASTM D16 for interpretation of terms used in this section.
- B. Coatings: Heavy duty finishes for use on any surfaces, especially surfaces subject to submerged, high moisture, splash, or chemical environment.
- C. Ambient Conditions:
 - 1. Chemical: Surface subject to corrosive chemical splash or fumes.
 - 2. Moist: Surface subject to wet areas such as shower rooms and rooms with open tanks.

- 3. Normal: Surface subject to normal temperatures and humidity such as found in offices and corridors.
- D. Splash: Surface subject to frequent washing and chemical splash.
- E. Submerged P: Surface submerged in potable water plus 1'-0" above high liquid level.
- F. Submerged NP: Surface submerged in nonpotable liquid plus 1'-0" above high liquid level.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on all finishing products.
- C. Samples: Actual color samples available for each type of coating scheduled. Colors to be approved by Owner.
- D. Literature:
 - 1. Submit manufacturer's literature stating application recommendations and generic makeup of each type of coating schedule.
 - 2. Substitutions: For coatings not specified herein, provide substitute manufacturer's literature with specified coating literature for Engineer to make proper evaluation.
- E. Letter of Certification/Shop Painting:
 - 1. Contractor has option of shop coating materials and equipment partially or totally.
 - 2. Submit the following for factory-applied coatings:
 - a. Coating used.
 - b. Manufacturer's written certificate factory-applied coating system identical to, or exceeding, requirements specified herein.
 - c. Requirements for touch-up or coating.
 - d. History of coating performance in same environment.
 - 3. Submit the following for factory-applied primer.
 - a. Primer used.
 - b. Contractor's certification factory-applied primer compatible with field-applied finish coat.
- F. Manufacturer's Instructions: Indicate special surface preparation procedures and substrate conditions requiring special attention.
- G. Maintenance Data: Submit data on cleaning, touch-up, and repair of painted and coated surfaces.

1.05 QUALITY ASSURANCE

- A. Sampling of Materials:
 - 1. Engineer reserves the right to select unopened containers of materials furnished on job and have materials tested at approved laboratory. Owner will pay for first tests.
 - 2. Retests of rejected materials and tests of replacement materials shall be paid for by the Contractor.
 - 3. Remainder of contents of containers not required for testing will be returned to Contractor.
- B. Field Quality Control:
 - 1. When requested by Engineer, prepare a representative coated item or test area demonstrating surface preparation, color, finish, and workmanship before proceeding with similar Work.
 - 2. If coverage is not acceptable to the Engineer, Engineer reserves the right to require extra application of paint at no extra cost to Owner.
 - 3. Notify Engineer sufficiently in advance of coating application to permit observation of surface preparation and completed coating work when requested. Contractor remains responsible for documenting coating application and compliance with specified dry-film thicknesses.

1.06 REGULATORY REQUIREMENTS

- A. Conform to applicable code for flame and smoke rating requirements for products and finishes.

1.07 DELIVERY, STORAGE, AND PROTECTION

- A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.
- B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.
- C. Paint Materials: Store at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.
- D. Avoid danger of fire: Deposit cleaning rags and waste materials in metal containers having tight covers or remove from building each night. Provide fire extinguishers of type recommended by coating manufacturer in areas of storage and where finishing is occurring. Allow no smoking or open containers of solvents. Store solvents in safety cans.
- E. Empty containers shall have labels cancelled and be clearly marked as to use.
- F. Upon project completion, remaining material will become property of Owner. Seal material as required for storage, marked as to contents and shelf life, and store where required by Owner.
- G. Protect floor and walls of storage area from splatter or disfiguration.

1.08 ENVIRONMENTAL REQUIREMENTS

- A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.
- B. Minimum Application Temperatures for Latex Paints: 45 degrees F for interiors; 50 degrees F for exterior; unless required otherwise by manufacturer's instructions.
- C. Maintain interior temperature and relative humidity of space, as recommended by coating manufacturer, 24 hours before applying and until coating is cured.
- D. Provide adequate lighting.

1.09 PROJECT/SITE CONDITIONS

- A. Protection:
 - 1. Cover material and surfaces, including floors and open tanks, adjoining or below work in progress with clean drop cloths or canvas.
 - 2. Remove hardware, accessories, plates, lighting fixtures, and similar items or provide protection by masking. Upon completion, replace above items or remove protection and clean.
 - 3. Maintain manufacturer's environmental requirements while coating dries.
- B. Cooperation: Work shall be scheduled and coordinated with other trades and shall not proceed until other work and/or job conditions are, in the judgment of the Owner's Construction Inspector, as required to achieve satisfactory results.

1.10 EXTRA MATERIALS

- A. See Section 01 6000 - Product Requirements, for additional provisions.
- B. Supply 1 gallon of each color, type, and surface texture; store where directed.
- C. Label each container with color, type, texture, and locations in addition to the manufacturer's label.

1.11 WARRANTY

- A. Full warranty against defects in materials and workmanship for two years after substantial completion, including all parts, labor, and expenses.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Paints:
 - 1. Sherwin-Williams Co.
 - 2. Tnemec.

3. Engineer approved equivalent.

2.02 PAINTS AND COATINGS - GENERAL

- A. Materials selected for coating system for each type of surface shall be product of same manufacturer.
- B. Paints and Coatings: Ready mixed.
- C. Paints and Coatings: Ready mixed, except field-catalyzed coatings. Prepare pigments:
 1. To a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating.
 2. For good flow and brushing properties.
 3. Capable of drying or curing free of streaks or sags.
- D. Color shall be formed of pigments free of lead, lead compounds or other materials which might be affected by presence of hydrogen sulfide or other gases likely to be present at project.
- E. Coatings shall meet surface burning characteristics as required by code and established by ASTM E84.
- F. Any surface not listed in the schedule of materials, shall be painted as scheduled for similar surfaces. In general, all non-ferrous metals, aluminum, stainless steel, chrome, and copper will not be painted.

2.03 SCHEDULE - COLORS

- A. Colors shall be selected and approved by Owner.
- B. In areas scheduled for finishing coat exposed piping, conduit, and ducts to match adjacent or near walls or ceilings, except for color coding.
- C. Equipment Colors (Equipment includes equipment, structural supports, and fasteners): Coat equipment same color as piping it serves.
- D. Where available, furnish manufacturer's factory-applied finish in the required color. Factory-finished equipment and components other than process valves and appurtenances need not be recoated solely for color unless otherwise indicated.
- E. Where patching and repair occurs in rooms or spaces not scheduled for finish, finish to blend or match existing colors and surfaces. Carry finish to a natural boundary between new work and existing.

2.04 ACCESSORY MATERIALS

- A. Accessory Materials: Linseed oil, shellac, turpentine, paint thinners and other materials not specifically indicated but required to achieve the finishes specified; commercial quality.
- B. Patching Material: Latex filler.
- C. Fastener Head Cover Material: Latex filler.

2.05 MIXING AND TINTING

- A. Each coat - primer, intermediate, finish - shall be slightly darker than preceding coat to visually indicate adequate coverage, unless otherwise approved by the Engineer.
- B. Tint undercoats similar to finish coats, but with sufficient variations to distinguish between coats.
- C. Adjust stained finishes as necessary to obtain identical appearance on veneer and solid stock.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that surfaces are ready to receive Work as instructed by the product manufacturer.
- B. If surfaces to be finished cannot be put into proper condition or finished by customary cleaning, sanding, and puttying operations or if surfaces were improperly primed by others, report defects to Engineer, in writing, or assume responsibility and correct unsatisfactory finish resulting from improper surfaces. Commencement of work indicates acceptance of surfaces.

- C. Materials removed and replaced to correct defects due to work placed on unsuitable surfaces shall be at Contractor's expense.
- D. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.
- E. Test shop-applied primer for compatibility with subsequent cover materials.

3.02 PREPARATION

- A. Surfaces, including floors, shall be clean, dry, and free of loose dirt, dust, and foreign matter before applying coating.
- B. Comply with coating manufacturer's recommendations for surface preparation.
- C. Surface Appurtenances: Remove or mask electrical plates, hardware, light fixture trim, escutcheons, and fittings prior to preparing surfaces or finishing.
- D. Surfaces: Correct defects and clean surfaces which affect work of this section. Remove or repair existing coatings that exhibit surface defects.
- E. Marks: Seal with shellac those which may bleed through surface finishes.
- F. Seal crevices at field-coated fabricated steel joints and other locations recommended by the coating manufacturer where required to provide a continuous protective coating system. Sealant shall be compatible with the specified coating system.
- G. Impervious Surfaces: Remove mildew by scrubbing with solution of tetra-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.
- H. Concrete and Unit Masonry Surfaces to be Painted: Remove dirt, loose mortar, scale, salt or alkali powder, and other foreign matter. Remove oil and grease with a solution of tri-sodium phosphate; rinse well and allow to dry. Remove stains caused by weathering of corroding metals with a solution of sodium metasilicate after thoroughly wetting with water. Allow to dry.
- I. Plastic:
 - 1. Solvent clean pipe in accordance with manufacturer's recommendations.
 - 2. Hand sand with medium grit sandpaper to provide tooth for coating system.
 - 3. Large areas may be power sanded or brush-off blasted, provided sufficient controls employed so surface roughened without removing excessive material.
- J. Insulated Coverings to be Painted: Remove dirt, grease, and oil from canvas and cotton.
- K. Concrete Floors to be Painted: Remove contamination, acid etch, and rinse floors with clear water. Verify required acid-alkali balance is achieved. Allow to dry.
- L. Ferrous Metal:
 - 1. Round or chamfer sharp edges and grind smooth burrs, jagged edges, and surface defects.
 - 2. Prepare welds and adjacent areas to remove undercutting or reverse ridges on weld bead, weld spatter on or adjacent to weld or area to be coated, and sharp peaks or ridges along weld bead. Grind embedded pieces of electrode or wire flush with adjacent surface of weld bead.
 - 3. Coat surfaces same day prepared and prior to "rust bloom". Re-prepare surfaces starting to rust before coating. Surface preparation shall be verified in accordance with SSPC-Vis 1, Vis 3, and ICRI templates.
 - 4. Cleaning Methods:
 - a. Workmanship for metal surface preparation as specified shall conform to current SSPC specifications as follows;
 - 1) Solvent Cleaning: SP-1.
 - 2) Hand Tool Cleaning: SP-2.
 - 3) Power Tool Cleaning: SP-3.
 - 4) White Metal Blast Cleaning: SP-5.
 - 5) Commercial Blast Cleaning: SP-6.
 - 6) Brush-off Blast Cleaning: SP-7.

- 7) Pickling: SP-8.
- 8) Near-White Metal Blast Cleaning: SP-10
- 9) Power Tool Cleaning to White Metal: SP-11.
- 10) High Pressure Water Cleaning: SP-12.
- 11) Concrete. Cleaning: SP-13.
- b. Wherever "solvent cleaning", "hand tool cleaning", "wire brushing", or "blast cleaning" or similar words of equal intent are used in specifications or coating manufacturer's specifications, they shall be understood to refer to applicable SSPC specifications listed above.
- c. Use hand tools to clean areas that cannot be cleaned by power tools.
5. Shop Preparation: Equipment, structural steel, metal louvers, and similar items may be shop-prepared and primed at Contractor's option. Centrifugal wheel blast cleaning acceptable alternate to shop blast cleaning. Clean and prime in accordance with this section.
6. Field Touch-up: Sandblast items and equipment as specified to restore damaged surfaces previously shop or field blasted and primed. Materials, equipment, procedures, and safety equipment for personnel shall conform to SSPC.
- M. Uncoated Steel and Iron Surfaces to be Painted: Remove grease, mill scale, weld splatter, dirt, and rust. Where heavy coatings of scale are evident, remove by hand wire brushing or sandblasting; clean by washing with solvent. Apply a treatment of phosphoric acid solution, ensuring weld joints, bolts, and nuts are similarly cleaned. Prime paint entire surface; spot prime after repairs.
- N. Shop-Primed Steel Surfaces to be Finish Painted: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces. Re-prime entire shop-primed item.
- O. Shop-primed valves, fittings, and appurtenances scheduled for field finish coating shall be prepared in accordance with SSPC-SP 2 and SSPC-SP 3 as required to remove oil, dirt, salts, loose coating, rust, and other contaminants prior to application of the specified field coating system.
- P. Where valves, fittings, or appurtenances are furnished with a manufacturer's factory-applied epoxy coating and require field coating to achieve the specified color, verify compatibility of the factory coating with the specified field coating system. Prepare the factory coating and provide intermediate or tie coats, where required, in accordance with written recommendations of the field coating manufacturer. Do not apply the specified field coating system over a factory-applied finish without verification of coating compatibility and required surface preparation.
- Q. Prior to field coating factory-primed ductile iron pipe, fittings, and valves, Contractor shall identify the factory-applied coating and verify compatibility with the specified field coating system. Provide surface preparation, abrasion, tie coat, or removal of the factory coating as recommended in writing by the field coating manufacturer.

3.03 APPLICATION

- A. General:
 1. Apply products in accordance with manufacturer's instructions.
 2. Apply paint, enamel, and varnish with suitable brushes, rollers, or spraying equipment.
 3. Spread evenly and flow on smoothly without runs, lumps, or sags.
 4. Make edges of coating adjoining other materials or colors sharp and clean without overlapping.
 5. Where adjacent sealant is to be painted, do not apply finish coats until sealant is applied.
 6. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.
 7. Apply each coat to uniform appearance. Apply each coat of paint slightly darker than preceding coat unless otherwise approved.
 8. Sand metal surfaces lightly between coats to achieve required finish.

9. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.
 10. Manufacturer-Applied Coating System:
 - a. Repair abraded areas on factory-finished items in accordance with manufacturer's directions.
 - b. Blend repaired areas into original finish.
 11. Coverage and hide shall be complete. When color, stain, dirt, or undercoats show through final coat of paint the surface shall be covered by additional coats until the paint film is of uniform finish, color, appearance and coverage.
- B. Priming and Sealing:
1. Refer to coating schedule for specific products.
 2. Shop:
 - a. Shop primer for ferrous metal shall comply with SSPC guidelines, and as specified in coating schedule of this specification.
 - b. Inspect shop-primed items at job site for compliance with contract documents. Schedule inspection with Engineer.
 - c. Hand or power sand chipped, peeled, or abraded primer and feather edges. Spot prime areas with specified primer.
 - d. Prior to application of finish coats, clean shop-primed surfaces free of dirt, oil, and grease.
 - e. Prepare and prime holdback areas as required for specified coating system.

3.04 CLEANING

- A. Collect waste material which may constitute a fire hazard, place in closed metal containers, and remove daily from site.
- B. Before substantial completion, remove masking, coating, and other material from floors, glass and other surfaces and remove rubbish and accumulated materials of whatever nature not caused by other trades from premises and leave in clean, orderly condition, with floors broom clean.
- C. All glass throughout shall have all paint or varnish spots and brush marks removed and, upon completion of the painting work, shall be washed and polished both sides.
- D. All glass that is scratched or damaged by the painter's work or while cleaning off the paint from the glass shall be replaced.
- E. Hardware and other unpainted surfaces shall be cleaned using lacquer thinner or paint remover. No edge tools or abrasives will be permitted.

3.05 SCHEDULE - SURFACES TO BE FINISHED

- A. Paint the surfaces described below under Schedule - Paint Systems.

3.06 SCHEDULE - PAINT SYSTEMS

- A. General
 1. Unless otherwise noted, Tnemec products are identified in this schedule to establish quality and type desired.
 2. Scheduled thickness or coverage rate is as recommended by Tnemec. If other manufacturers are used, manufacturer's requirements shall be followed, but in no case shall thickness or coverage rate be less than Tnemec. Equivalent coating systems from other listed manufacturers shall provide the same generic coating type, service suitability, surface preparation, number of coats, and total minimum dry-film thickness unless otherwise approved by Engineer.
 3. DFT = dry film thickness (mils/coat). DFT shown is for spray application. Additional coats may be required if brushed and rolled.
 4. sfpg = sq ft/gal (per coat).
 5. Examples of items to be coated are not all inclusive.

- B. New interior and exterior piping, equipment, and appurtenances regardless of type of factory-applied finish, where color coding required.
- C. Recoat existing exposed piping, valves, supports, and appurtenances where disturbed by demolition, modification, welding, cutting, or installation of new Work. Extend coating to a natural break or termination to provide a uniform finished appearance.
- D. Schedule:
 - 1. System 3 (Ferrous Metals, Interior Moist/Interior Splash, Semi-Gloss Sheen).
 - a. Application: Steel, Equipment, Pipes, Structural Members .
 - b. Preparation: Ferrous Metal SP-6
 - c. System:
 - 1) Primer: 1 coat/2.5 to 3.5 DFT "90-97 Theme-Zinc, Zinc-rich Primer."
 - 2) Top Coat: 1 coat/4.0 to 6.0 DFT "N69-Color Hi-Build Epoxoline II."
 - 2. System 3A (Cast Iron and Ductile Iron, Interior Moist/Interior Splash, Semi-Gloss Sheen).
 - a. Application: Cast Iron and Ductile Iron pipes, fittings, valves, etc.
 - b. Preparation: For bare or uncoated surfaces, SSPC-SP 6. For factory-primed surfaces, solvent clean in accordance with SSPC-SP 1; remove loose, damaged, or deteriorated primer and corrosion by SSPC-SP 2/SP 3; feather edges of remaining sound primer; and abrade or otherwise prepare the intact factory primer as required by the field coating manufacturer to provide adhesion of the specified coating system. Repair exposed substrate and apply the specified coating system in accordance with coating manufacturer's recommendations.
 - c. System:
 - 1) Primer: 1 coat/2.5 to 3.0 DFT "N140 Pota-Pox Plus."
 - 2) Top Coat: 1 coat/4.0 to 6.0 DFT "135-Color Chembuild."
 - 3. System 3B (Recoating of Existing Ferrous Metals, Interior Moist/Interior Splash, Semi-Gloss Sheen).
 - a. Application: Cast Iron, Ductile Iron, Steel, Equipment, Pipes, Structural Members.
 - b. Preparation: Ferrous Metal. Hand tool, power tool clean; remove loose paint, scale, rust. SP-2, SP-3.
 - c. System:
 - 1) First Coat: 1 coat/2.5 to 3.5 DFT "135-Color Chembuild".
 - 2) Top Coat: 1 coat/2.5 to 3.5 DFT "135-Color Chembuild".
 - 4. System 14 (Dissimilar Metal Protection)
 - a. Application: Dissimilar Material.
 - b. Preparation: As required by material.
 - c. System:
 - 1) Primer: None.
 - 2) Top Coat: 1 coat/8.0 DFT "46-465 H.B. Tnemecol".
- E. Piping color coding and pipe labeling schedule:
 - 1. Provide with color band and arrow indicating direction of flow, and legend adjacent to valves, at not more than 20-foot spacing on straight pipe runs, adjacent to change in direction, and on both sides where pipes pass through walls or floors.
 - 2. Coordinate with Owner to match color coding system for piping.
 - 3. Provide pipe labels of size and color per Owner's approval indicating contents of pipe and flow direction.

3.07 FINAL TOUCH-UP

- A. Prior to substantial completion, examine coated surfaces and retouch or refinish to leave surfaces in condition acceptable to the Engineer.

3.08 CLEANING

- A. Before substantial completion, remove masking, coating, and other materials from walls and other surfaces and remove rubbish and accumulated materials of whatever nature not caused by other trades from premises and leave in clean, orderly condition, with floors broom clean.

END OF SECTION 09 9000

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**SECTION 22 0523.13
BALL CHECK VALVES**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Ball check valves with sinking-type hollow steel ball and flanged access port.

1.02 REFERENCES

- A. ASTM A48 – Standard Specification for Gray Iron Castings.
- B. ASTM A126 - Standard Specification for Gray Iron Castings for Valves, Flanges, and Pipe Fittings.
- C. ASTM D2000 - Standard Classification System for Rubber Products in Automotive Applications.
- D. AWWA C550 - Protective Epoxy Interior Coatings for Valves and Hydrants.

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Submit the following as appropriate for each valve provided:
 - 1. Submit product data including valve dimensions, weight, pressure rating, materials of construction, flow/headloss data, required installation orientation, access requirements, and manufacturer's installation instructions.
- C. Manufacturer's Certificates: Certify that products of this section meet or exceed specified requirements.
- D. Operation and Maintenance Manual as described in Section 01 7800.

1.04 DELIVERY, STORAGE, AND PROTECTION

- A. Arrange delivery of products in accordance with construction schedules and to allow inspection prior to installation.
- B. Coordinate deliveries to avoid conflict with conditions at site.
- C. Deliver products in undamaged condition in original containers or packaging, with identifying labels intact and legible.
- D. Clearly mark to identify partial deliveries of component parts to facilitate assembly.
- E. Store products immediately on delivery and protect until installed. Storage to be done according to manufacturer's instructions with seals and labels intact and legible.
- F. Provide platforms, blocking or skids, or coverings required to protect products from deterioration or damage.
- G. Arrange storage in a manner to provide easy access for inspection.
- H. Maintain storage conditions to prevent deterioration or damage.
- I. Protect products after installation to prevent damage from subsequent operations. Remove when no longer needed.
- J. Provide equipment and personnel necessary to handle products by methods to prevent damage to products or packaging.
- K. Handle products by methods to prevent bending or overstressing.

1.05 SERVICE REPRESENTATIVE

- A. Provide qualified Service Representative to perform functions described in Section 01 4000 and to sign the Certificate of Proper Installation attached to section 01 4000.
- B. Any additional trips required by the Contractor before or after final startup and training shall not be charged to the Owner.

1.06 WARRANTY

- A. Full warranty against defects in materials and workmanship for two years after substantial completion, including all parts, labor, and expenses.

PART 2 PRODUCTS

2.01 BALL CHECK VALVES

- A. General:
 - 1. Service: Raw unscreened sewage.
 - 2. Provide positive shutoff against reverse flow
 - 3. Sinking-type hollow steel ball.
 - 4. Flanged access port.
 - 5. Fluid flow shall force the ball into a receiving cavity in the valve. When the fluid flow stops, the ball shall fall out of the cavity into a rubber seat in the body to shut off flow.
 - 6. The valve shall be constructed and oriented so that by unbolting and lifting the cover, the ball may be removed and replaced without removing the valve from the line.
 - 7. Valve shall be able to pass a sphere not less than 80% of the diameter of the valve.
 - 8. Check valves by the same manufacturer.
 - 9. See valve schedule in Section 22 0610.01 for more information.
- B. Body: Ductile iron (ASTM A395 Grade 64-45-15).
- C. Joints: Integral flanged joint ends, ANSI B16.1 Class 125
- D. The ball shall be nitrile coated.
- E. Fasteners shall be Type 316 stainless steel.
- F. Interior coating: Manufacturer's standard factory-applied protective epoxy coating suitable for raw wastewater service, minimum requirements of AWWA C550.
- G. Exterior coating: Manufacturer's shop primer compatible with field finish coating specified in Section 09 9000, System 3A. Where manufacturer's standard epoxy finish is provided, comply with the factory-coating compatibility and field-finishing requirements of Section 09 9000.
- H. Pressure Rating: 150 psi (minimum).
- I. Valve shall be capable of operating in the vertical position.
- J. Approved Manufacturers:
 - 1. Flygt Corporation
 - 2. Flomatic Corporation
 - 3. Engineer approved equivalent

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install in accordance with manufacturer's instructions as shown on the plans by qualified craftsmen.
- B. Location, orientation, and quantities as shown on the plans.
- C. Include all required related items necessary for a complete installation.
- D. Prepare and field finish valve exterior in accordance with Section 09 9000.

END OF SECTION 22 0523.13

**SECTION 22 0523.15
ECCENTRIC PLUG VALVES**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Submittals.
- B. Delivery, Storage, and Protection.
- C. Service Representative.
- D. Warranty.
- E. Manufacturers.
- F. Eccentric Plug Valves and Accessories.

1.02 REFERENCES

- A. AWWA C517 – Resilient-Seated Cast-Iron Eccentric Plug Valves.
- B. ASTM D2240 – Standard Test Method for Rubber Property—Durometer Hardness.
- C. ASTM A48 - Standard Specification for Gray Iron Castings.
- D. ASTM A126 - Standard Specification for Gray Iron Castings for Valves, Flanges, and Pipe Fittings.
- E. ASTM A536 - Standard Specification for Ductile Iron Castings.
- F. AWWA C550 - Standard Specification for Protective Epoxy Interior Coatings for Valves and Hydrants.

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Submit the following as appropriate for each valve provided:
 - 1. Outline and installation drawings for equipment and fixtures furnished.
 - 2. Equipment performance data and operating characteristics.
 - 3. Manufacturer's catalog data, marked to indicate materials being furnished as standard equipment, fixtures, specialties, and accessories.
 - 4. Shop Drawings on shop-fabricated systems.
 - 5. Drawings showing arrangement of piping, controls, and accessory equipment furnished.
- C. Manufacturer's Certificate: Certify that products of this section meet or exceed specified requirements.
- D. Operation and Maintenance Manual as described in Section 01 7800.

1.04 DELIVERY, STORAGE, AND PROTECTION

- A. Arrange delivery of products in accordance with construction schedules and to allow inspection prior to installation.
- B. Coordinate deliveries to avoid conflict with conditions at site.
- C. Deliver products in undamaged condition in original containers or packaging, with identifying labels intact and legible.
- D. Clearly mark to identify partial deliveries of component parts to facilitate assembly.
- E. Store products immediately on delivery and protect until installed. Storage to be done according to manufacturer's instructions with seals and labels intact and legible.
- F. Provide platforms, blocking or skids, or coverings required to protect products from deterioration or damage.
- G. Arrange storage in a manner to provide easy access for inspection.
- H. Maintain storage conditions to prevent deterioration or damage.

- I. Protect products after installation to prevent damage from subsequent operations. Remove when no longer needed.
- J. Provide equipment and personnel necessary to handle products by methods to prevent damage to products or packaging.
- K. Handle products by methods to prevent bending or overstressing.

1.05 SERVICE REPRESENTATIVE

- A. Provide qualified service representative to perform functions described in Section 01 4000 and to sign the Certification of Proper Inspection attached to Section 01 4000.
- B. Any additional trips required by the Contractor before or after final startup and training shall not be charged to the Owner.

1.06 WARRANTY

- A. Full warranty against defects in materials and workmanship for two years after substantial completion, including all parts, labor, and expenses.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. DeZurik.
- B. Pratt.
- C. Valmatic
- D. Engineer approved equivalent.

2.02 ECCENTRIC PLUG VALVE

- A. General:
 - 1. All valves shall be of the tight-closing, resilient-faced plug type.
 - 2. Valves shall be capable of submerged service.
 - 3. No metal-to-metal seating surfaces shall be permitted.
 - 4. Valves shall be of bi-directional eccentric seating such that the opening movement of the plug results in the plug rising off the body seat contact.
 - 5. Valves shall be drop tight at the rated pressure.
 - 6. Valves shall be satisfactory for throttling service, frequent operation, very infrequent operation, and open/close valve operation.
 - 7. Valve plug shall rotate 90 degrees from the full open to tight shut position.
 - 8. Valves shall be fitted with grease fittings in bearing journal area.
 - 9. Valves shall be full port.
 - a. The port area shall be the same as the pipe area and face to face distance of flanges shall be larger than that of standard port valves.
 - 10. The plug shall have a cylindrical seating surface eccentrically offset from the center of the shaft. Plug shall not contact the seat until at least 90% closed. Spherical shaped plugs are not acceptable.
 - 11. All valves by the same manufacturer.
 - 12. See valve schedule in Section 22 0610.01 for more information.
- B. Body, Bonnet, Stuffing Box: Ductile iron ASTM A536 Grade 65-45-12.
- C. Bolts and Nuts: stainless steel.
- D. Valve Ends: Flanged.
- E. Plug/Shaft: Cast iron ASTM A126, Class B; Cast iron ASTM A48, Class 40; Ductile iron ASTM A536, Grade 65-45-12, Integral plug and shaft; or Ductile iron ASTM A395 Grade 64-45-15. A two piece shaft is not acceptable.
- F. Resilient Facing: Neoprene or Buna-N, 70 durometer hardness.
- G. Body Seats: 99% Nickel, welded-in.

- H. Bearings: Oil impregnated 316 Stainless Steel sleeve-type trunnion bearings and top and bottom thrust bearings.
- I. Shaft Seal: V-type self-adjusting packing or 2 complete sets of U-cup seals, replaceable without disassembling valve.
- J. Shaft Extensions: Steel, as noted on the Plans and Valve Schedule, if required.
- K. Operator: Type as noted on the plans and valve schedule. All actuators shall be sized for full valve rating in bi-directional service.
- L. Coating: Buried valves shall have manufacturer's standard exterior asphalt or epoxy coating. Above-grade valves shall have manufacturer's standard exterior primer, compatible with epoxy field coating as per Section 09 9000. Above-grade valves shall be furnished with manufacturer's shop primer compatible with field finish coating specified in Section 09 9000. Where manufacturer's standard epoxy finish is provided, comply with the factory-coating compatibility and field-finishing requirements of Section 09 9000.
- M. Pressure Rating: 150 psi minimum, drip-tight closure.
- N. Direction of Operation: Counterclockwise (left) to open.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install in accordance with manufacturer's instructions as shown on the plans by qualified craftsmen.
- B. Location, orientation, and quantities as shown on the plans.
- C. Include all required related items necessary for a complete installation.
- D. Coat nuts and bolts with anti-sieze thread compound.
- E. Install with stem between 9:00 and 3:00 position (stem shall not be inverted). Valves in pipelines with suspended solids, slurries, or grit service shall be installed with stem at 9:00 or 3:00 position (horizontal) and plug at 12:00 position (up) when fully open.
- F. Prepare and field finish exposed valves in accordance with Section 09 9000.

END OF SECTION 22 0523.15

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SECTION 22 0523.30
PINCH VALVES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Submittals.
- B. Delivery, Storage, and Protection.
- C. Service Representative.
- D. Warranty.
- E. Pinch Valves and Accessories.

1.02 REFERENCES

- A. ANSI B16.1, Cast Iron Pipe Flanges and Flanged Fittings, 125 lb.
- B. ASTM A36 - Standard Specification for Carbon Structural Steel.
- C. ASTM A126 - Standard Specification for Gray Iron Castings for Valves, Flanges, and Pipe Fittings.
- D. ASTM A536 - Standard Specification for Ductile Iron Castings.
- E. ASTM A743 - Standard Specification for Castings, Iron-Chromium, Iron-Chromium-Nickel, Corrosion Resistant, for General Application.

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Submit the following as appropriate for each valve provided:
 - 1. Outline and installation drawings for equipment and fixtures furnished.
 - 2. Equipment performance data and operating characteristics.
 - 3. Manufacturer's catalog data, marked to indicate materials being furnished as standard equipment, fixtures, specialties, and accessories.
 - 4. Shop Drawings on shop-fabricated systems.
 - 5. Drawings showing arrangement of piping, controls, and accessory equipment furnished.
- C. Manufacturer's Certificate: Certify that products of this section meet or exceed specified requirements.
- D. Operation and Maintenance Manual as described in Section 01 7800.

1.04 DELIVERY, STORAGE, AND PROTECTION

- A. Arrange delivery of products in accordance with construction schedules and to allow inspection prior to installation.
- B. Coordinate deliveries to avoid conflict with conditions at site.
- C. Deliver products in undamaged condition in original containers or packaging, with identifying labels intact and legible.
- D. Clearly mark to identify partial deliveries of component parts to facilitate assembly.
- E. Store products immediately on delivery and protect until installed. Storage to be done according to manufacturer's instructions with seals and labels intact and legible.
- F. Provide platforms, blocking or skids, or coverings required to protect products from deterioration or damage.
- G. Arrange storage in a manner to provide easy access for inspection.
- H. Maintain storage conditions to prevent deterioration or damage.
- I. Protect products after installation to prevent damage from subsequent operations. Remove when no longer needed.

- J. Provide equipment and personnel necessary to handle products by methods to prevent damage to products or packaging.
- K. Handle products by methods to prevent bending or overstressing.

1.05 SERVICE REPRESENTATIVE

- A. Provide qualified service representative to perform functions described in Section 01 4000 and to sign the Certification of Proper Inspection attached to Section 01 4000.
- B. Include necessary trips by the Manufacturer's representative to provide one 8-hour work day on-site (travel time not included) for startup and training of operations personnel.
- C. Any additional trips required by the Contractor before or after final startup and training shall not be charged to the Owner.

1.06 WARRANTY

- A. Full warranty against defects in materials and workmanship for two years after substantial completion, including all parts, labor, and expenses.

PART 2 PRODUCTS

2.01 PINCH VALVE

- A. General:
 - 1. All valves in this section by the same manufacturer.
 - 2. Basic valve assembly shall consist of split enclosing valve body, elastomer lining sleeve, pinch bars, pull bars, actuator shaft, actuator base plate/yoke, actuator, and assembly hardware.
 - 3. Valves shall be opened and closed utilizing two mechanical pinch bars that constrict the elastomer sleeve liner between the bars.
 - 4. Top pinch bar shall be raised and lowered by a center actuator shaft.
 - 5. The lower pinch bar shall be raised and lowered with two pull bars anchored to the actuator base plate or yoke.
 - 6. Valves shall provide 100 percent of the port area of the adjoining pipe at the valve ends and, unless otherwise specified, through the entire length of the valve.
 - 7. Valves shall be capable of closing bubble tight against the maximum line pressure.
 - 8. Port: Full-ported, round.
 - 9. Body Style: enclosed split body.
 - 10. Pressure Rating: 150 psi.
 - 11. End Connections: flanged, ANSI B16.1, Class 125, flat-faced.
 - 12. Elastomer sleeve liner:
 - a. Seamless along entire flange to flange length
 - b. Compression molded and reinforced with polyester cord
 - c. Tabs attached to the cord ply and extending through the exterior elastomer coating shall be furnished for attachment to the pinch bars -- to ensure positive opening force under negative pipeline pressure.
 - 13. Operating Temperature: 40 - 140 F.
 - 14. Protective Coatings: Manufacturer's factory coating shall be suitable for the specified service and compatible with field finish coating specified in Section 09 9000. Exposed valve surfaces shall be finish coated in accordance with Section 09 9000.
 - 15. Polished or machined surfaces to be coated with rust preventative compound.
- B. Materials:
 - 1. Rating: Class 150
 - 2. Body/Flange: Cast Ductile Iron Grade 65-45-12.
 - 3. Elastomer Sleeve Liner: Buna-N with polyester reinforcing cord.
 - 4. Pull Bars: Stainless Steel, AISI type 316.
 - 5. Pinch Bars: Ductile Iron.
 - 6. Assembly hardware: Stainless Steel, AISI type 316.

7. Center Actuator Shaft: Stainless Steel, AISI type 316.
 8. Rust Preventive Compound: manufacturers standard.
 9. Actuator and accessories coatings: universal primer.
- C. Accessories:
1. Actuator, see actuator specification section and valve schedule.

2.02 MANUFACTURERS

- A. Onyx Valve Company: Model Series DEC.
- B. Engineer approved equivalent.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install in accordance with manufacturer's instructions as shown on the plans by qualified craftsmen.
- B. Location, orientation, and quantities as shown on the plans.
- C. Include all required related items necessary for a complete installation.
- D. Install with stem between 9:00 and 3:00 position (stem shall not be inverted).
- E. Prepare and field finish exposed valves in accordance with Section 09 9000.
- F. Support valves and adjacent piping in accordance with Section 22 0529 so that piping loads are not transferred to valves and valve loads are not transferred to piping.

END OF SECTION 22 0523.30

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SECTION 22 0523.60
VALVE AND GATE OPERATORS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Valve and Gate Operators.

1.02 REFERENCES

- A. AWWA C540 - Power-Actuating Devices for Valves & Slide Gates.
- B. AWWA C541 - Hydraulic and Pneumatic Cylinder and Vane-Type Actuators for Valves and Slide Gates.
- C. AWWA C542 - Electric Motor Actuators for Valves and Slide Gates.
- D. AWWA C550 - Protective Interior Coatings for Valves and Hydrants.

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Submit the following as appropriate for each valve provided:
 - 1. Outline and installation drawings for equipment and fixtures furnished.
 - 2. Equipment performance data and operating characteristics.
 - 3. Manufacturer's catalog data, marked to indicate materials being furnished as standard equipment, fixtures, specialties, and accessories.
 - 4. Shop Drawings on shop-fabricated systems.
 - 5. Drawings showing arrangement of piping, controls, and accessory equipment furnished.
 - 6. Actuator output torque, required valve torque, enclosure classification, power supply, open/close travel time, duty cycle, limit and torque switch configuration, local controls, and remote status/control signals.
- C. Manufacturer's Certificates: Certify that products of this section meet or exceed specified requirements.
- D. Operation and Maintenance Manual as described in Section 01 7800.

1.04 DELIVERY, STORAGE, AND PROTECTION

- A. Arrange delivery of products in accordance with construction schedules and to allow inspection prior to installation.
- B. Coordinate deliveries to avoid conflict with conditions at site.
- C. Deliver products in undamaged condition in original containers or packaging, with identifying labels intact and legible.
- D. Clearly mark to identify partial deliveries of component parts to facilitate assembly.
- E. Store products immediately on delivery and protect until installed. Storage to be done according to manufacturer's instructions with seals and labels intact and legible.
- F. Provide platforms, blocking or skids, or coverings required to protect products from deterioration or damage.
- G. Arrange storage in a manner to provide easy access for inspection.
- H. Maintain storage conditions to prevent deterioration or damage.
- I. Protect products after installation to prevent damage from subsequent operations. Remove when no longer needed.
- J. Provide equipment and personnel necessary to handle products by methods to prevent damage to products or packaging.
- K. Handle products by methods to prevent bending or overstressing.

1.05 SERVICE REPRESENTATIVE

- A. Provide qualified service representative to perform functions described in Section 01 4000 and to sign Certificate of Proper Inspection attached to Section 01 4000.
- B. Provide manufacturer's field service representative for installation verification, adjustment, startup, and functional testing of electric and modulating valve actuators as required by this Section.
- C. Any additional trips required by the Contractor before or after final startup and training shall not be charged to the Owner.

1.06 WARRANTY

- A. Full warranty against defects in materials and workmanship for two years after substantial completion, including all parts, labor, and expenses.

PART 2 PRODUCTS

2.01 VALVE AND GATE OPERATORS

- A. General:
 - 1. Operator (actuator) types for each valve or gate are as shown on the drawings and valve schedule.
 - 2. The rated torque capability of each operator shall be sufficient to seat, unseat, and rigidly hold, in any intermediate position, the valve disc it controls under the operating conditions specified.
 - 3. Valve actuators shall be equipped with adjustable mechanical stop-limiting devices to prevent over-travel of the valve disc in the open and closed positions.
 - 4. Actuator housings, supports, and connections to the valve shall be designed with a minimum safety factor of 5, based on the ultimate strength of materials used.
 - 5. The actuator shall be designed to control the valve in all positions from fully open to fully closed and from fully closed to fully open with control in any intermediate position.
 - 6. Valves and operators shall be furnished as complete assemblies.
 - 7. The valve manufacturer shall provide and take full responsibility for sizing all valve operators to be compatible with the valves shown on the drawings and valve schedule. For valves without extension-bonnets or torque tubes, floor stands shall be leak tested and cycled after installation of the operator.
 - 8. All operators shall be by the same manufacturer.
 - 9. Coating: Prepare and field finish exposed valves in accordance with Section 09 9000.
- B. Manual Operators:
 - 1. Size handwheel and gearing to permit operation of the valve under maximum specified differential pressure without exceeding 40 pounds rim pull.
 - 2. Handwheel Operator:
 - a. Provide handwheels for gate valves, knife gate valves and plug valves.
 - 1) Sized in accordance with AWWA C550.
 - b. Provide lever actuators for plug valves, butterfly valves and ball valves, above grade, 6 inch and smaller in diameter unless otherwise noted in the Valve Schedule. Pointer shall indicate valve position.
 - c. To be used when centerline of valve is less than 6' above finished floor elevation.
 - d. Cast iron housing and handwheel, wide gripping area, with arrow to indicate opening direction.
 - e. Bronze thrust and sleeve bearings on the operating shaft, adjustable open and closed position stops.
 - f. Counterclockwise to open, valve position indicator.
 - g. Size of handwheel shall be the largest nominal size that will fit at each valve location and operator orientation.
 - h. Valve manufacturer and Contractor shall be responsible for properly sizing all handwheels for each valve application and location.
 - 3. Chainwheel Operators:

- a. To be used when centerline of valve is greater than 6' above finished floor elevation.
 - b. Other requirements shall be same as handwheel operators; supply adequate length of rustproof chain to reach from valve location to within 3 feet of the floor level.
 4. Wrench Nut:
 - a. Wrench nuts shall be provided on all buried valves, on all valves that are to be operated through floor boxes, and where indicated on the drawings. Wrench nuts shall comply with AWWA C550 fitted to the top of valve stem. Counterclockwise to open.
 5. Floor Boxes:
 - a. Openings through concrete slabs provided for key operation of valves shall be provided with a cast iron floor box complete with cover. The floor box shall be of the depth indicated on the drawings. Where the operating nut is in the slab, the stem shall have a guide to maintain the nut in the center of the box; where the nut is below the slab, the opening in the bottom of the box shall accommodate the operating key.
 - b. Each floor box and cover shall be shop coated by dipping in asphalt varnish.
 6. Tee Wrench
 - a. One (1) tee wrench shall be provided to operate the eccentric plug valves in manhole valve vaults. Wrench length shall be 4 feet and shall be suitable to fit the wrench nuts on the valves.
 7. Extension Stems:
 - a. Extension stems and Stem guides shall be furnished and installed where specified, indicated on the drawings, or otherwise required for proper valve operation. Extension stems shall be of solid steel and shall be not smaller in diameter than the stem of the valve actuator shaft. Extension stems shall be connected to the valve actuator with a single Lovejoy "Type D" universal joint with grease filled protective boot. All stem connections shall be pinned.
 - b. At least two stem guides shall be furnished with each valve. Stem guides shall be of cast iron, bronze bushed, and adjustable in two directions. Stem guide spacing shall not exceed 100 times the stem diameter or 10 feet, whichever is smaller. The top stem guide shall be designed to carry the weight of the extension stem. The extension stem shall be provided with a collar pinned to the stem and bearing against the stem thrust guide.
- C. Electric Operators:
 1. General:
 - a. Electric operators shall meet the full requirements of AWWA C542 for electric operation, and the following.
 - b. Capable of fully opening, closing, or holding valves in intermediate positions under maximum operating conditions.
 - c. Motor capable of producing an actuator output of not less than 1.5 times the required valve operating torque.
 - d. Two-position (opened/closed), throttling, or modulating operation as indicated on the drawings and valve/operator schedule.
 - e. Include reversing starters, control transformers, and other components that are necessary for the intended operation.
 - f. All electric operated valve actuators shall have Open-Stop-Close pushbuttons, open and closed indicating lights, and a Local-Off-Remote selector switch. Provide an extra pair of dry contacts on the Local-Off-Remote switch, for customer use, to indicate switch position.
 2. Enclosure:
 - a. Actuator enclosure shall be watertight with all covers and entries sealed by means of O-rings, gaskets, or machined surfaces, as appropriate, for the NEMA rated enclosure indicated in the Valve Schedule, Section 22 0610.01. A NEMA 7 rating shall be suitable for a Class I, Division 1 or 2 hazardous location.
 - b. Conduit entries shall be properly sealed to maintain the watertight integrity of the housing.

- c. Terminal and limit switch compartment covers shall be fastened to the gear housing with stainless steel captured bolts.
 - d. Gear housings and load bearing enclosures shall be cast iron.
 - e. Non load bearing enclosures and covers may be cast iron, aluminum or steel.
- 3. Motors
 - a. The drive motor shall be specifically designed for actuator service characterized by high starting torque, low stall torque, and low inertia.
 - b. Motors shall be 120 volt, 60 cycle, single phase for open/closed and throttling service, and either 208 V or 230/460 volt, 60 cycle, three phase for modulating service, as shown in the valve schedule or on the drawings.
 - c. Motors shall be capable of starting against the rated load in either the open or closed direction with terminal voltage at $\pm 10\%$ of nameplate voltage.
 - d. Motor shall be induction type with Class F insulation and three thermal switches imbedded in the windings for overload protection.
 - e. Motor housing shall be aluminum or cast iron, NEMA rated as scheduled, watertight, totally enclosed non-ventilated type with cooling fins to dissipate heat.
 - f. Motor shall have plug and socket electrical connection to facilitate easy removal or replacement.
- 4. Gears, Drive, and Bearing:
 - a. Power gearing shall be of hardened steel or bronze designed to withstand, without, the stall torque of the motor.
 - b. The final drive shall be of the self locking worm and wheel type to prevent creeping of the valve disc in intermediate positions.
 - c. All rotating shafts shall be supported by anti-friction bearings.
- 5. Handwheel:
 - a. Provide a permanently attached manual override handwheel with a positive declutch mechanism.
 - b. A fused or inoperable motor shall not prevent manual operation.
- 6. Torque Limit Switches:
 - a. Dynamometer calibrated torque switches shall be provided in both open and closed directions to de-energize the motor control circuit when the valve encounters an obstruction during travel. Operator Manufacturer shall furnish a written certification of dynamometer testing for each operator outlining torque output at pullout, run and stall, as well as motor and draw recorded during testing.
 - b. Switches shall be mechanically operated and settable in units of torque.
 - c. Completely sealed contacts shall be rated 10A at 120 volts.
- 7. Limit Switches:
 - a. Provide travel limit switches, integral to the actuator, to de-energize the motor control circuit in both the open and closed directions.
 - b. Switch drive shall be of the counter gear type in step with the actuator output drive at all times whether in electric or manual operating modes.
 - c. Provide the actuator with four gear train limit switches, independently adjustable, with a minimum of sixteen (16) contacts, each rated at 10A, 120 VAC. A minimum of four (4) of these shall be isolated dry contacts (2 normally open and 2 normally closed) for customer use.
 - d. Contacts shall be completely sealed in an enclosure to prevent electrical shock while adjusting and shall be fully adjustable with power supplied to the actuator.
- 8. Position Indicator:
 - a. Mechanical indicator shall be provided to continuously indicate valve position.
- 9. Space Heater:
 - a. A space heater shall be installed in the limit switch compartment.
- 10. Control and Power Terminals:

- a. Electrical terminals shall be housed in a compartment isolated from the limit switch/torque switch compartment.
 - b. Control and power terminations shall be to a plug and socket assembly in order that removal of the terminal compartment cover simultaneously disconnects all wiring from the actuator.
 - c. Two 3/4" conduit entries shall be furnished.
11. Control Accessories:
- a. For actuators designated as throttling or modulating, provide a positioner to accept a current or voltage analog command signal, compare it with existing valve position, and energize the open or close positioning function of the motor controls to drive the valve to the desired position.
 - b. Positioner shall allow field selection of failure position upon loss of command signal, and adjustment of deadband, time delay, zero, and span.
 - c. Actuators designated as modulating shall be capable of a minimum of 600 starts per hour.
 - d. Provide a 4-20 mA output signal for remote position indication for all throttling and modulating valves (include a regulated 24 VDC power supply for the current transmitter).
 - e. Provide an electrically isolated contact closure output, as scheduled, rated 10A at 120 volts for customer use, to indicate when the valve operator is in "Remote" control mode.
12. Only Multi-turn operators with independent gear boxes will be considered for acceptance by the following manufacturers:
- a. AUMA.
 - b. EIM.
 - c. Limitorque.
 - d. Rotork.
 - e. Engineer approved equivalent.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install in accordance with manufacturer's instructions as shown on the plans by qualified craftsmen.
- B. Location, orientation, and quantities as shown on the plans.
- C. Include all required related items necessary for a complete installation.
- D. Prepare and field finish exposed valves in accordance with Section 09 9000.
- E. Operate each powered valve through full open and closed travel under normal operating conditions. Verify proper operation of local controls, torque and travel limits, position indication, remote status signals, and modulating control where applicable.

END OF SECTION 22 0523.60

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**SECTION 22 0529
HANGERS AND SUPPORTS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Submittals.
- B. Design Requirements
- C. Warranty.
- D. Manufacturers and Materials.
- E. System of pipe supports and anchors with necessary inserts, bolts, nuts, restraining and hanger rods, washers, miscellaneous steel, and other accessories.
- F. Pipe, duct, and equipment hangers, supports, and associated anchors.
- G. Sleeves and seals.
- H. Flashing and sealing equipment and pipe stacks.

1.02 REFERENCES

- A. ASME B31.3 – Process Piping.
- B. ASTM A36 - Standard Specification for Structural Steel.
- C. ASTM A307 - Standard Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength.
- D. MSS SP-58 - Pipe Hangers and Supports - Materials, Design and Manufacture, Selection, Application, and Installation.

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings:
 - 1. Technical data, drawings, fabrication details, and materials for each nonstandard hanger and support system proposed.
 - 2. Installation drawings and schedules for each piping system showing location and type of supports, hangers, anchors, and expansion joints.
 - a. For process-mechanical piping systems, submit installation drawings as specified in Section 22 1117.
 - b. For nonprocess-mechanical piping systems, submit installation drawings as specified in this section.
 - c. Installation drawings and schedules shall be signed by Professional Engineer registered in State of Iowa.
- C. Product Data:
 - 1. Catalog cuts and product specifications for each standard hanger and support system component proposed.
- D. Indicate hanger and support framing and attachment methods.

1.04 DESIGN REQUIREMENTS

- A. Pipe support system components shall withstand hydrostatic loads, up-lift forces, dead loads imposed by weight of pipes filled with water plus insulation, internal test pressures, and have minimum safety factor of 5.
- B. Design, detail, and installation of pipe support system not detailed on Drawings shall be Contractor's sole responsibility.
 - 1. Pipe supports detailed in Drawings shall take precedence over the general requirements of this Specification Section.

- C. Absence of pipe supports and details on Drawings shall not relieve Contractor of responsibility for providing them throughout plant.
- D. Contractor shall determine support and hanger types, sizes, locations, spacings, attachments, and anchorages for all piping systems not detailed on Drawings.
- E. A detailed support and hanger plan and schedule shall be submitted to the Engineer.
- F. Piping supports attached to or supported from the bolted steel flow equalization basin shall be designed and furnished by the tank manufacturer in accordance with Section 33 3613 and are not Contractor-designed supports under this Section.

1.05 WARRANTY

- A. Full warranty against defects in materials and workmanship for two years after substantial completion, including all parts, labor, and expenses.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Pre-Engineered Pipe Supports:
 - 1. Carpenter and Patterson.
 - 2. Anvil.
 - 3. Cooper B-Line.
 - 4. Engineer approved equivalent.
- B. Anchorage to concrete masonry: See Drawings and Division 05 5000 specification.
- C. Light-gauge metal framing ("struts"):
 - 1. Cooper B-Line.
 - 2. Unistrut.
 - 3. Thomas & Betts "Superstrut".
 - 4. Engineer approved equivalent.
- D. Metal Framing Systems:
 - 1. Unistrut, stainless steel.
 - 2. Fee and Mason, stainless steel.
 - 3. Engineer approved equivalent.
- E. Non-shrink grout: See Division 3 specification.

2.02 MATERIALS

- A. Hangers, rods, clamps, protective shields, metal framing, support components, and hanger accessories shall be galvanized unless otherwise noted.
- B. Hangers, rods, clamps, protective shields, metal framing, support components, and hanger accessories in treatment process, pumping, and chemical storage/feed areas and rooms shall be stainless steel or FRP.
- C. Submerged hangers, rods, clamps, protective shields, metal framing, support components, and hanger accessories in wet wells, tanks, channels or tank covers shall be Type 316 stainless steel. See Section 09 9000 for definition of submerged.
- D. MSS types indicated are typical of types and quality of standard pipe supports and hangers to be employed.
- E. Provide factory fabricated piping hangers and supports, clamps, hanger rod attachments, building attachments, saddles, shields, thrust anchorage, and other miscellaneous products of MSS SP-69 type indicated or shop fabricated supports; comply with MSS SP-58 and manufacturer's published product information. Where MSS type not indicated, provide proper selection for installation requirements and comply with MSS SP-69 and manufacturer's published product information.
- F. All piping hangers and supports in contact with stainless steel piping shall be of stainless steel construction.

- G. Provide copper plated hangers and supports for copper piping.
- H. Piping supports for vertical piping passing through floor sleeves shall be galvanized steel riser clamps.

2.03 HORIZONTAL PIPING HANGERS AND SUPPORTS

- A. Hangers for 2-1/2-inch and smaller pipe shall be split-ring, adjustable swivel, clevis, or roller type.
- B. Hangers for 3-inch pipe or greater shall be clevis or roller type.
- C. Hangers for use with spring supports shall be split-ring or clamp type.
- D. Hangers for fiberglass reinforced pipe shall be saddle type.
- E. Each hanger shall be designed to permit at least 1-1/2 inch vertical adjustment after installation.
- F. Adjustable Swivel Split-Ring Hanger: MSS Type 6.
- G. Adjustable Clevis Hanger: MSS Type 1.
- H. Adjustable Band Hanger: MSS Type 7.
- I. Adjustable Swivel-Band Hanger: MSS Type 10.
- J. Clamp: MSS Type 4.
- K. Single Roll Support: MSS Type 41, including axle roller and threaded sockets.
- L. Adjustable Roller Hanger: MSS Type 43, including axle roller and clevis.
- M. Roll/Stand: MSS Type 44, including roller, stand, and axle. MSS Type 46, including roller, adjustable.
- N. Welded Brackets: Welded fabrications complying with following.
 - 1. Light Duty: MSS Type 31.
 - 2. Medium Duty: MSS Type 32.
 - 3. Heavy Duty: MSS Type 33.
- O. Adjustable Saddle Support:
 - 1. MSS Type 38, including saddle, pipe, and reducer.
 - 2. Fabricate base support from steel pipe and include cast iron flange or welded steel plate.
- P. Stanchion Saddle Support:
 - 1. MSS Type 37, including saddle and U-bolt.
- Q. Strap or wire hangers not acceptable.
- R. All cross bolts on hangers, supports, and etc. shall include a lock nut or double nut.

2.04 VERTICAL PIPING CLAMPS

- A. 2-Bolt Riser Clamp: MSS Type 8.
- B. 4-Bolt Riser Clamp: MSS Type 42, include pipe spacers at inner bolt holes.
- C. Vertical Support: Steel riser clamp.
- D. Shield for Insulated piping 2-1/2 Inches and Larger (Except Cold Water Piping): Pipe covering protective saddles.

2.05 HANGER RODS

- A. Material:
 - 1. Steel: ASTM A36, threaded both end or continuous threaded.
- B. Rods shall conform to following sizes:
 - 1. Pipe size up to 2 in: Minimum rod diameter 3/8".
 - 2. Pipe size 2 -1/2 in. and 3 in. and 3-1/2 in: Minimum rod diameter 1/2".
 - 3. Pipe size 4 in. and 5 in: Minimum rod diameter 5/8".
 - 4. Pipe size 6 in. and 8 in: Minimum rod diameter 3/4".
 - 5. Pipe size 10 in. to 12 in: Minimum rod diameter 7/8".

6. Pipe size 14 in. and over: Minimum rod diameter 1".
7. Trapeze hangers as required.

C. Nuts: All nuts on hangers shall be double nut to prevent hanger failure

2.06 INSERTS

- A. Individual Concrete Inserts: 1-5/8" wide x 1-3/8" minimum depth.
 1. MSS Type 18, for load under 500 pounds.
 2. Minimum Safe Load: 1,100 lbs.
- B. Continuous Concrete Inserts:
 1. Unistrut, P-3200 Series.
 2. Cooper B-Line, B22 or B32.
 3. Superstrut.
 4. Engineer approved equivalent.

2.07 STRUCTURAL ATTACHMENTS

- A. Turnbuckles: MSS Type 13.
- B. Weldless Eye Nut: MSS Type 17.
- C. Eye Socket: MSS Type 16.
- D. Clevis: MSS Type 14.
- E. Top Beam C-Clamp: MSS Type 19.
- F. C-Clamps: MSS Type 23, steel.
- G. Single-Side Clamp: MSS Type 25.
- H. Top I-Beam Clamp: MSS Type 25.
- I. Side Beam Clamp: MSS Type 20.
- J. Concrete Anchors:
 1. Minimum-Safety Factor: 5.

2.08 SADDLES AND SHIELDS

- A. Protection Saddles: MSS Type 39.
- B. Protection Shields: MSS Type 40.

2.09 FLASHING

- A. Metal Flashing: 26 gauge galvanized steel.
- B. Lead Flashing: 5 lb/sq. ft. sheet lead for waterproofing; one lb/sq.ft. sheet lead for soundproofing.
- C. Flexible Flashing: 47 mil thick sheet butyl; compatible with roofing.
- D. Caps: Steel, 22 gauge minimum; 16 gauge at fire resistant elements.

2.10 SLEEVES

- A. Sleeves for Pipes Through Non-Fire Rated Floors: Form with 18 gauge galvanized steel.
- B. Sleeves for Pipes Through Fire Rated and Fire Resistive Floors and Walls, and Fireproofing: Prefabricated fire rated sleeves including seals, UL listed.
- C. Sleeves for pipes through non-fire rated beams, walls, footings, and potentially wet floors, form with steel pipe.
- D. Sleeves for Round Ductwork: Form with galvanized steel.
- E. Sleeves for Rectangular Ductwork: Form with galvanized steel or wood.
- F. Fire Stopping Insulation: Glass fiber type, non-combustible. 3M CP25 caulk and FS195 Wrap/Strip or equal.
- G. Caulk: Acrylic sealant.

2.11 MISCELLANEOUS MATERIALS

- A. Shop-Fabricated Anchors and Supports:
 - 1. Steel Plates, Shapes, and Bars: ASTM A36.
 - 2. Restraining Rods: ASTM A307.
 - 3. Fabricate in accordance with Division 5 specification.
- B. Concrete and non-shrink grout: in accordance with drawings details and Division 3 specification.
- C. Concrete anchorage (anchor bolts, adhesive anchors, expansion anchors, etc.): See Division 5 specs and Structural Drawings.

2.12 FABRICATION

- A. Size sleeves large enough to allow for movement due to expansion and contraction. Provide for continuous insulation wrapping.
- B. Design hangers to be adjustable or removable without disengagement of supported pipe.

PART 3 EXECUTION

3.01 GENERAL

- A. Install hangers, supports, clamps, and attachments from building structure; comply with MSS SP 69. Group parallel runs of horizontal piping to be supported together on trapeze type hangers where possible.
- B. Install supports to provide indicated pipe slopes and so that maximum pipe deflections allowed by ANSI B31.1 are not exceeded.
- C. Except as otherwise indicated for exposed continuous pipe runs, install hangers and supports of same type and style as installed for adjacent similar piping.
- D. Install supports to allow controlled movement of piping systems, permit freedom of movement between pipe anchors, and facilitate expansion loops, expansion bends, and action of expansion joints, similar units.
- E. Piping shall be free to move when piping expands or contracts, except where fixed anchors are indicated. Where adequate hanger rod swing length cannot be provided or where pipe movement based on expansion of 1 inch/100 feet for each 100°F change in temperature exceed 1/2 inch, provide approved roller supports.
- F. Prevent contact between dissimilar metals. Where concrete or metal pipe support is used, place 1/8 inch thick, teflon, neoprene rubber or plastic strip under piping at point of bearing. Cut to fit entire area of contact between pipe and support.
- G. Apply anti-seize compound to nuts and bolts.
- H. Hangers and supports which require a cross bolt (or spacer) shall include a lock nut or double nut.

3.02 INSTALLATION

- A. Support piping from structural framing, unless otherwise noted. Do not support piping from other piping.

3.03 INSERTS

- A. Locate inserts so total load on insert does not exceed manufacturer's recommended maximum load. Location of inserts shall be approved by Engineer.
- B. Where necessary to anchor supports to hardened concrete or completed masonry, use concrete anchors.
- C. Inserts shall be placed in forms by this contractor.
- D. Provide inserts for suspending hangers from reinforced concrete slabs and sides of reinforced concrete beams.
- E. Provide hooked rod to concrete reinforcement section for inserts carrying pipe over 4 inches.
- F. Where concrete slabs form finished ceiling, provide inserts to be flush with slab surface.

- G. Where inserts are omitted, drill through concrete slab from below and provide thru-bolt with recessed square steel plate and nut recessed into and grouted flush with slab.

3.04 PIPE HANGERS AND SUPPORTS

- A. Support horizontal steel piping as follows:
1. Pipe Size: 1/2 inch - Maximum Hanger Spacing: 5'-0".
 2. Pipe Size: 3/4 inch - Maximum Hanger Spacing: 6'-0".
 3. Pipe Size: 1 inch - Maximum Hanger Spacing: 7'-0".
 4. Pipe Size: 1-1/2 inch - Maximum Hanger Spacing: 9'-0".
 5. Pipe Size: 2 inch - Maximum Hanger Spacing: 10'-0".
 6. Pipe Size: 2-1/2 inch - Maximum Hanger Spacing: 11'-0".
 7. Pipe Size: 3 inch - Maximum Hanger Spacing: 12'-0".
 8. Pipe Size: 3-1/2 inch - Maximum Hanger Spacing: 13'-0".
 9. Pipe Size: 4 inch - Maximum Hanger Spacing: 14'-0".
 10. Pipe Size: 5 inch - Maximum Hanger Spacing: 16'-0".
 11. Pipe Size: 6 inch - Maximum Hanger Spacing: 17'-0".
 12. Pipe Size: 8 inch - Maximum Hanger Spacing: 19'-0".
 13. Pipe Size: 10 inch and over - Maximum Hanger Spacing: 22'-0".
- B. Support horizontal plastic piping (Schedule 80 at 100 degrees F) as follows:
1. Pipe Size: 1/2 inch - Maximum Hanger Spacing: 4'-6".
 2. Pipe Size: 3/4 inch - Maximum Hanger Spacing: 4'-6".
 3. Pipe Size: 1 inch - Maximum Hanger Spacing: 5'-0".
 4. Pipe Size: 1-1/2 inch - Maximum Hanger Spacing: 5'-6".
 5. Pipe Size: 2 inch - Maximum Hanger Spacing: 6'-0".
 6. Pipe Size: 3 inch - Maximum Hanger Spacing: 7'-0".
 7. Pipe Size: 4 inch - Maximum Hanger Spacing: 7'-6".
 8. Pipe Size: 6 inch - Maximum Hanger Spacing: 9'-0".
 9. Pipe Size: 8 inch - Maximum Hanger Spacing: 9'-6".
 10. For plumbing applications, plastic piping shall be supported at maximum of 4'-0" spacing.
- C. Support horizontal cast iron and ductile iron as follows:
1. Pipe Size: 4 inch and smaller - Maximum Hanger Spacing: 5'-0".
 2. Pipe Size: 6 inch to 12 inch - Maximum Hanger Spacing: 12'-0".
 3. Pipe Size: Larger than 12 inch - Maximum Hanger Spacing: 16'-0".
 4. For plumbing applications, support horizontal cast iron and ductile iron piping adjacent to each hub, with maximum of 5'-0" spacing between hangers.
- D. Provide support adjacent to each valve and at changes in direction where required to prevent transfer of valve, fitting, or piping loads to adjacent equipment.
- E. Attach to structural steel with beam clamps.
- F. Install hangers to provide minimum 1/2 inch space between finished covering and adjacent work.
- G. Place a hanger within 12 inches of each horizontal elbow.
- H. Use hangers with 1-1/2 inch minimum vertical adjustment.
- I. Where piping of various sizes is to be supported together, space supports for smallest pipe size or install intermediate supports for smaller diameter pipe.
- J. Provide minimum of 2 pipe supports for each pipe run.
- K. Where piping connects to equipment, support by pipe support and not equipment, unless approved by equipment manufacturer.
- L. Provide pipe supports on each side of instruments and other devices.
- M. Unless otherwise shown or authorized by Engineer, place piping running parallel to walls approximately 1-1/2 inches out from face of wall and at least 3 inches below ceiling.

- N. Pedestal pipe supports shall be adjustable with stanchion, saddle, and anchoring flange.
- O. Pedestal or floor supports shall have a grout pad.
- P. Support piping in manner preventing undue strain on valves, fittings, or equipment. Provide pipe supports at changes in direction or elevation, adjacent to flexible couplings, adjacent to nonrigid joints, and where otherwise shown. Do not install pipe supports and hangers in equipment access areas or bridge crane runs.
- Q. Stacked horizontal runs of piping along walls may be supported by metal framing system attached to concrete insert channels.
- R. Paint hangers, clamps, protective shields, metal framing support components, and hanger accessories in accordance with Section 09 9000.
- S. Support vertical piping at every other floor. Support vertical cast iron pipe at each floor at hub.
- T. Where several pipes can be installed in parallel and at same elevation, provide multiple or trapeze hangers.
- U. Support riser piping independently of connected horizontal piping.

3.05 THRUST ANCHORS

- A. For suspended piping, center thrust anchors as closely as possible between expansion joints and between elbows and expansion joints. Anchors shall hold pipe securely and be sufficiently rigid to force expansion and contraction movement to take place at expansion joints or elbows and preclude separation of joints.
- B. Provide thrust anchors as required to resist thrust due to changes in diameter or direction or dead-ending of pipe lines. Anchorage shall be required wherever bending stresses exceed allowable for pipe. Wall pipes may be used as thrust anchors.
- C. Restraining rod size and number shall be as shown on Drawings.

3.06 INSULATED PIPING

- A. Attach clamps, including spacers (if any), to piping with clamps projecting through insulation; do not exceed allowable pipe stresses.
- B. Where low compressive strength insulation or vapor barriers are indicated on cold water piping, install coated protective shields. For pipe 8 inch and over, install wood insulation saddles.
- C. Where insulation without vapor barrier is indicated, install protection saddles on piping 2 inches and larger.

3.07 EQUIPMENT BASES AND SUPPORTS

- A. Concrete bases will be provided by others. The contractor shall provide dimensions.
- B. Provide templates, anchor bolts, and accessories for mounting and anchoring equipment.
- C. Construct support of steel members or steel pipe and fittings. Brace and fasten with flanges bolted to structure. See plans for type of support.
- D. Provide rigid anchors for pipes after vibration isolation components are installed.

END OF SECTION 22 0529

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**SECTION 22 0533
HEAT TRACING FOR PLUMBING PIPING**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Self-regulating parallel resistance electric heating cable.
- B. Controls.

1.02 REFERENCE STANDARDS

- A. IEEE 515.1 - IEEE Standard for the Testing, Design, Installation, and Maintenance of Electrical Resistance Trace Heating for Commercial Applications.
- B. ITS (DIR) - Directory of Listed Products.
- C. NEMA EN 10250 - Enclosures for Electrical Equipment (1000 Volts Maximum).
- D. NFPA 70 - National Electrical Code.
- E. UL (DIR) - Online Certifications Directory.
- F. UL 1053 - Ground-Fault Sensing and Relaying Equipment.

1.03 ADMINISTRATIVE REQUIREMENTS

- A. Coordinate the work with other trades to provide ground fault protection for electric heat tracing circuits as required by NFPA 70.
- B. Coordinate the work with other trades to provide circuit breaker ratings suitable for installed circuit lengths.

1.04 SUBMITTALS

- A. See Section 01 3000 - ADMINISTRATIVE REQUIREMENTS, for submittal procedures.
- B. Product Data: Provide data for electric heat tracing.
- C. Shop Drawings: Indicate electric heat tracing layout, electrical terminations, thermostats, controls, and branch circuit connections.
- D. Manufacturer's Installation Instructions: Indicate installation instructions and recommendations.
- E. Field Quality Control Submittals: Indicate test reports and inspection reports.
- F. Project Record Documents: Record actual locations of electric heat tracing lines and thermostats.
- G. Operation and Maintenance Data: Include manufacturer's descriptive literature, operating instructions of equipment and controls, maintenance and repair data, and parts listings.
- H. Warranty: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

1.05 WARRANTY

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
- B. Provide two year manufacturer warranty for cables, connection kits, accessories, and controls.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Chromalox, Inc
- B. Emerson Electric Co
- C. nVent RAYCHEM
- D. Thermon Manufacturing Company
- E. Substitutions: See Section 01 6000 - Product Requirements.

2.02 SELF-REGULATING PARALLEL RESISTANCE ELECTRIC HEATING CABLE

- A. Provide products listed, classified, and labeled by UL (DIR), ITS (DIR), or testing firm acceptable to authorities having jurisdiction (AHJ).
- B. Factory Rating and Testing: Comply with IEEE 515.1.
- C. Heating Element:
 - 1. Provide pair of parallel No.16 tinned or nickel coated stranded copper bus wires embedded in cross linked conductive polymer core with varying heat output in response to temperature along its length.
 - 2. Terminations: Waterproof, factory assembled, non-heating leads with connector at one end and water-tight seal at opposite end.
 - 3. Capable of crossing over itself without overheating.
- D. Insulated Jacket: Flame retardant polyolefin.
- E. Cable Cover: Provide tinned copper and polyolefin outer jacket with UV inhibitor.
- F. Maximum Power-On Operating Temperature: 150 degrees F.
- G. Maximum Power-Off Exposure Temperature: 185 degrees F.

2.03 CABLE OUTER JACKET MARKINGS

- A. Name of manufacturer, trademark, or other recognized symbol of identification.
- B. Catalog number, reference number, or model.
- C. Month and year of manufacture, date coding, applicable serial number, or equivalent.
- D. Agency listing or approval.

2.04 CONNECTION KITS

- A. Provide power connection, splice/tee, and end seal kits compatible with the heating cable and without requiring cutting of the cable core to expose bus wires.
- B. Provide with NEMA 4X rating for prevention of corrosion and water ingress.
- C. Provide UV stabilized components.

2.05 ACCESSORIES

- A. Provide Accessories As Indicated or As Required for Complete Installation, Including but Not Limited To:
 - 1. High temperature, glass filament tape for attachment of heating cable to metal piping.
 - 2. Aluminum self-adhesive tape for attachment of heating cable to plastic piping.
 - 3. Heat-conductive putty.
 - 4. Cable ties.
 - 5. Silicone end seals and splice kits.
 - 6. Installation clips.
 - 7. Warning labels for attachment to exterior of piping insulation. Refer to Section 22 0553.

2.06 CONTROLS

- A. Pipe Mounted Thermostats:
 - 1. Remote bulb unit with adjustable temperature range from 30 to 50 degrees F.
 - 2. Snap-action, open-on-rise, single pole switch with minimum current rating adequate for the connected cable.
 - 3. Remote bulb on capillary, resistance temperature device (RTD) or thermistor for direct sensing of pipe wall temperature.
 - 4. Control Enclosure: Corrosion resistant and waterproof.
- B. Provide minimum 30 ampere contactor to indicate operational status and ON/OFF control.
- C. System Controller:
 - 1. NEMA EN 10250 Type 4X enclosure.

2. Microprocessor based.
3. User interface with status indicator lights.
4. Diagnostic self-testing with field-adjustable testing interval.
5. Ground fault equipment protection (GFEP) complying with UL 1053.
6. Manual ON/OFF override control.
7. Dry contact for alarm reporting.
8. Alarms:
 - a. Ground fault.
 - b. Sensor failure.
 - c. Low temperature.
 - d. High temperature.
 - e. Low current.
 - f. High current.
 - g. Communications loss.
 - h. Power loss.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that piping is ready to receive work.
- B. Verify field measurements are as indicated on shop drawings.
- C. Verify required power is available, in proper location, and ready for use.

3.02 PREPARATION

- A. Clean exposed surfaces prior to installation.
- B. Prepare surfaces using approved methods as recommended by manufacturer.

3.03 INSTALLATION

- A. Install in accordance with manufacturer's written installation instructions.
- B. Comply with installation requirements of IEEE 515.1 and NFPA 70, Article 427.
- C. Apply heating cable linearly on pipe with fiberglass tape only after piping has successfully completed any required pressure testing.
- D. Comply with applicable local building codes and requirements of authorities having jurisdiction.
- E. Identification:
 1. After thermal insulation installation, apply external pipeline decals to indicate presence of the thermal insulation cladding at intervals not to exceed 20 ft including cladding over each valve or other equipment that may require maintenance.

3.04 FIELD QUALITY CONTROL

- A. See Section 01 4000 - Quality Requirements, for additional requirements.
- B. Perform start-up by factory technician or factory representative as per Owner's requirements.
- C. Field Testing and Inspections:
 1. Commission system in accordance with installation and operation manual.
 2. Inspect for sources of water entry and proper sealing.
 3. Inspect weather barrier to confirm that no sharp edges are contacting the trace heating.
 4. Insulation Resistance: Greater than 20 megohms at a test voltage of 2500 VDC for polymer insulated trace heaters.
 5. Test heating cable integrity with megohmmeter at the following intervals:
 - a. After cable has been installed onto the piping.
 - b. After installing the connection kits.
 - c. After the installation of thermal insulation onto the piping.
 - d. Prior to initial start-up (commissioning).

6. Measure voltage and current at each unit.
7. Controls:
 - a. Verify control parameters are set to the application requirements.

3.05 CLOSEOUT ACTIVITIES

- A. Demonstrate operation of controls.

3.06 PROTECTION

- A. Protect installed products from damage until Date of Substantial Completion.

END OF SECTION 22 0533

SECTION 22 0553
IDENTIFICATION FOR PLUMBING PIPING AND EQUIPMENT

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Nameplates.
- B. Tags.
- C. Pipe markers.

1.02 REFERENCE STANDARDS

- A. ASME A13.1 - Scheme for the Identification of Piping Systems.

1.03 SUBMITTALS

- A. See Section 01 3000 - ADMINISTRATIVE REQUIREMENTS for submittal procedures.
- B. Schedules:
 - 1. Submit plumbing component identification schedule listing equipment, piping, and valves.
 - 2. Detail proposed component identification data in terms of wording, symbols, letter size, and color coding to be applied to corresponding product.
 - 3. Valve Data Format: Include id-number, location, function, and model number.
- C. Product Data: Provide manufacturers catalog literature for each product required.
- D. Manufacturer's Installation Instructions: Indicate special procedures, and installation.

PART 2 PRODUCTS

2.01 PLUMBING COMPONENT IDENTIFICATION GUIDELINE

- A. Nameplates:
 - 1. Control panels, transducers, and other related control equipment products.
- B. Tags:
 - 1. Piping: 3/4 inch diameter and smaller.
 - 2. Manual operated and automated control valves.
- C. Pipe Markers: 3/4 inch diameter and higher.

2.02 MANUFACTURERS

- A. Brady : www.bradyid.com.
- B. Seton Identification Products: www.seton.com.
- C. Champion America: www.champion-america.com.
- D. Kolbi Pipe Marker Co: www.kolbipipemarkers.com.
- E. Engineer approved equivalent.

2.03 NAMEPLATES

- A. Description: Laminated piece with up to three lines of text.
 - 1. Letter Color: White.
 - 2. Letter Height: 1/4 inch.
 - 3. Background Color: Black.

2.04 TAGS

- A. Flexible: Vinyl with engraved black letters on light contrasting background color with up to three lines of text. Minimum tag size 1-1/2 inch in diameter.
- B. Metal: Brass, 19 gauge 1-1/2 inch in diameter with smooth edges, blank, smooth edges, and corrosion-resistant ball chain. Up to three lines of text.
- C. Chart: Typewritten letter size list in anodized aluminum frame.

2.05 PIPE MARKERS

- A. Comply with ASME A13.1.
- B. Flexible Marker: Factory fabricated, semi-rigid, preformed to fit around pipe or pipe covering; minimum information indicating flow direction arrow and identification of fluid conveyed.
- C. Flexible Tape Marker: Flexible, vinyl film tape with pressure-sensitive adhesive backing and printed markings.
- D. Underground Flexible Marker: Bright-colored continuously printed ribbon tape, minimum 6 inches wide by 4 mil, 0.004 inch thick, manufactured for direct burial service.
- E. Identification Scheme, ASME A13.1:
 - 1. Primary: External Pipe Diameter, Uninsulated or Insulated.
 - 2. Secondary: Color scheme per fluid service.
 - a. Water; Potable, Cooling, Boiler Feed, and Other: White text on green background.

PART 3 EXECUTION

3.01 PREPARATION

- A. Degrease and clean surfaces to receive identification products.
- B. Prepare surfaces in accordance with Section 09 9000 for stencil painting.

3.02 INSTALLATION

- A. Install flexible nameplates with corrosive-resistant mechanical fasteners, or adhesive. Apply with sufficient adhesive to ensure permanent adhesion and seal with clear lacquer.
- B. Install tags in clear view and align with axis of piping
- C. Apply stencil painting in accordance with Section 09 9000.
- D. Install plastic pipe markers in accordance with manufacturer's instructions.
- E. Install plastic tape pipe marker around pipe in accordance with manufacturer's instructions.
- F. Install underground plastic pipe markers 6 to 8 inches below finished grade, directly above buried pipe.
- G. Identify air handling units, pumps, heat transfer equipment, tanks, and water treatment devices with plastic nameplates. Small devices, such as in-line pumps, may be identified with plastic or metal tags.
- H. Identify control panels and major control components outside panels with plastic nameplates.
- I. Identify thermostats relating to terminal boxes or valves with nameplates.
- J. Identify valves in main and branch piping with plastic nameplates or tags.
- K. Identify air terminal units and radiator valves with numbered tags.
- L. Tag automatic controls, instruments, and relays. Key to control schematic.
- M. Identify piping, concealed or exposed, with plastic pipe markers. Use tags on piping 3/4 inch diameter and smaller. Identify service, flow direction, and pressure. Install in clear view and align with axis of piping. Locate identification not to exceed 20 feet on straight runs including risers and drops, adjacent to each valve and tee, at each side of penetration of structure or enclosure, and at each obstruction.
- N. Locate ceiling tacks to locate valves or dampers above lay-in panel ceilings. Locate in corner of panel closest to equipment.

END OF SECTION 22 0553

**SECTION 22 0610.01
VALVE SCHEDULE**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. The following is a schedule of process valves. Valves smaller than 2 inches or less for service such as polymer piping or sampling ports are not scheduled but size and type are identified on the Contract Drawings. Schedule is not intended as a bill of materials but rather as an aid to construction.
- B. Unless otherwise shown on drawings or schedules, provide the following valves, subject to the requirements of the individual specifications.

1.02 DESCRIPTION

- A. In the following valve schedule(s), below each valve number, the type of service, the valve size and comments about the individual valve are described.
- B. See Division 22 for individual valve specifications.

PART 2 VALVE SCHEDULE

2.01 SCHEDULE ON FOLLOWING PAGES

END OF SECTION 22 0610.01

VALVE SCHEDULE								
Tag No.*	Location	Line**		Valve Type	Spec. Section	Mounting	Actuator Type	Comments
		Size (IN)	Designation					
Monfort Structure								
PNV-2034	6" Pinch/Knife Gate Valve w/ Actuator No 2	6"	RAW	PNV	22 0523.30, 22 0523.60	FL	Modulating Electric Actuator	
PNV-2044	6" Pinch/Knife Gate Valve w/ Actuator No 3	6"	RAW	PNV	22 0523.30, 22 0523.60	FL	Modulating Electric Actuator	
PNV-2054	6" Pinch/Knife Gate Valve w/ Actuator No 4	6"	RAW	PNV	22 0523.30, 22 0523.60	FL	Modulating Electric Actuator	
Yard								
PV-2056	12" Domestic Train Bypass Plug Valve	12"	RAW	PV	22 0523.15, 22 0523.60	FL	Wrench Nut w/ Extension Stem	Located in valve vault MH
PV-2058	8" Future Industry FEB Influent Plug Valve	8"	RAW	PV	22 0523.15, 22 0523.60	FL	Wrench Nut w/ Extension Stem	Located in valve vault MH
PV-2059	8" Future Industry FEB Bypass Plug Valve	8"	RAW	PV	22 0523.15, 22 0523.60	FL	Wrench Nut w/ Extension Stem	Located in valve vault MH
PV-2060	12" FEB Influent Plug Valve	12"	RAW	PV	22 0523.15, 22 0523.60	FL	Wrench Nut w/ Extension Stem	Located in valve vault MH
PV-2062	12" FEB Bypass Plug Valve	12"	RAW	PV	23 0523.15, 22 0523.60	FL	Wrench Nut w/ Extension Stem	Located in valve vault MH
PV-2069	12" FEB Discharge Plug Valve	12"	RAW	PV	24 0523.15, 22 0523.60	FL	Wrench Nut w/ Extension Stem	Located in valve vault MH
PV-2075	8" FEB Drain Plug Valve	8"	RAW	PV	25 0523.15, 22 0523.60	FL	Wrench Nut w/ Extension Stem	Located in valve vault MH
SBR Building								
CV-2216	SBR Pump 1 Discharge Check Valve	8"	RAW	CV	22 0523.13, 22 0523.60	FL	N/A	
PV-2217	SBR Pump 1 Discharge Automated Plug Valve	8"	RAW	PV	23 0523.15, 22 0523.60	FL	Modulating Electric Actuator	
CV-2226	SBR Pump 2 Discharge Check Valve	8"	RAW	CV	22 0523.13, 22 0523.60	FL	N/A	
PV-2227	SBR Pump 2 Discharge Automated Plug Valve	8"	RAW	PV	23 0523.15, 22 0523.60	FL	Modulating Electric Actuator	
CV-2236	SBR Pump 3 Discharge Check Valve	8"	RAW	CV	22 0523.13, 22 0523.60	FL	N/A	
PV-2237	SBR Pump 3 Discharge Automated Plug Valve	8"	RAW	PV	23 0523.15, 22 0523.60	FL	Modulating Electric Actuator	
NOTE: COMBINATION AIR VALVES, MECHANICAL AND PLUMBING VALVES 3" AND LESS ARE NOT SHOWN.								
KEY								
* Valve Designation		Diameter: Nominal Pipe Diameter			** Pipe Designation			
PV	Plug Valve				RAW Raw Industry Wastewater			
CV	Check Valve	Mounting:						
PNV	Pinch Valve	FL	Flange					
		NPT	Threaded					

**SECTION 22 0719
PLUMBING PIPING INSULATION**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Flexible elastomeric cellular insulation.
- B. Jacketing and accessories.

1.02 REFERENCE STANDARDS

- A. ASTM B209/B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
- B. ASTM C534/C534M - Standard Specification for Preformed Flexible Elastomeric Cellular Thermal Insulation in Sheet and Tubular Form.
- C. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
- D. UL 723 - Standard for Test for Surface Burning Characteristics of Building Materials.

1.03 SUBMITTALS

- A. See Section 01 3000 - ADMINISTRATIVE REQUIREMENTS for submittal procedures.
- B. Product Data: Provide product description, thermal characteristics, list of materials and thickness for each service, and locations.

1.04 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with not less than three years of experience.
- B. Applicator Qualifications: Company specializing in performing the type of work specified in this section and approved by manufacturer.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Accept materials on site, labeled with manufacturer's identification, product density, and thickness.

1.06 FIELD CONDITIONS

- A. Maintain ambient conditions required by manufacturers of each product.
- B. Maintain temperature before, during, and after installation for minimum of 24 hours.

1.07 WARRANTY

- A. Full warranty against defects in materials and workmanship for two years after substantial completion, including all parts, labor, and expenses.

PART 2 PRODUCTS

2.01 REGULATORY REQUIREMENTS

- A. Surface Burning Characteristics: Flame spread index/Smoke developed index of 25/50, maximum, when tested in accordance with ASTM E84, UL 723, ASTM E84, or UL 723.

2.02 FLEXIBLE ELASTOMERIC CELLULAR INSULATION

- A. Manufacturers:
 - 1. Aeroflex USA
 - 2. Armstrong World Industries, Inc.
 - 3. K-Flex USA LLC
 - 4. Engineer Approved Equivalent
 - 5. Substitutions: See Section 01 6000 - Product Requirements.
- B. Insulation: Preformed flexible elastomeric cellular rubber insulation complying with ASTM C534/C534M ; use molded tubular material wherever possible.
 - 1. Minimum Service Temperature: Minus 40 degrees F.
 - 2. Maximum Service Temperature: 220 degrees F.

3. Connection: Waterproof vapor barrier adhesive.

2.03 JACKETING AND ACCESSORIES

- A. Aluminum Jacket:
 1. Comply with ASTM B209/B209M, Temper H14, minimum thickness of 0.016 inch
 2. Thickness: 0.016 inch sheet.
 3. Finish: Smooth.
 4. Joining: Longitudinal slip joints and 2 inch laps.
 5. Fittings: 0.016 inch thick die-shaped fitting covers with factory-attached protective liner.
 6. Metal Jacket Bands: 3/8 inch wide; 0.015 inch thick aluminum.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that piping has been tested before applying insulation materials.
- B. Verify that surfaces are clean and dry, with foreign material removed.

3.02 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Install in accordance with North American Insulation Manufacturers Association (NAIMA) National Insulation Standards.
- C. Exposed Piping: Locate insulation and cover seams in least visible locations.
- D. Insulated pipes conveying fluids below ambient temperature: Insulate entire system including fittings, valves, unions, flanges, strainers, flexible connections, and expansion joints.
- E. Neatly finish insulation at supports, protrusions, and interruptions.
- F. Above Ground Heat Traced Piping: Insulate fittings, joints, and valves where shown. Size large enough to enclose pipe and heat tracer. Cover with aluminum jacket with seams located on bottom side of horizontal piping. Lap upper jacket on vertical pipe over lower sections to shed rain.

3.03 SCHEDULES

- A. Above ground and vault piping exposed to freezing with heat tracing where shown on drawings:
 1. Flexible elastomeric cellular insulation
 2. Pipe size range: Up to and including 4"
 - a. Insulation thickness: 2 inch.
 3. Jacket: Aluminum

END OF SECTION 22 0719

**SECTION 22 1116
DUCTILE IRON PIPE**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Detailed requirements for various ductile iron piping products. Some products specified in this section may not be required for this Contract. Piping system Specification section(s) and Drawings identify particular ductile iron piping products to be provided under this Contract.

1.02 REFERENCES

- A. ASTM A307 - Standard Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength.
- B. ASTM B1000 - Standard Practices for Casting Preparation and Test Procedure of Porcelain Enamel-Lined Pipe, Fittings, and Valves for Use in the Municipal Wastewater, Sewage, and Water Treatment Industry.
- C. ASTM C283 - Standard Test Methods for Resistance of Porcelain Enameled Utensils to Boiling Acid.
- D. ASTM D792 - Standard Test Methods for Density and Specific Gravity (Relative Density) of Plastics by Displacement.
- E. AWWA C104 - Cement-Mortar Lining for Ductile-Iron Pipe and Fittings for Water.
- F. AWWA C105 - Polyethylene Encasement for Ductile-Iron Piping for Water and Other Liquids.
- G. AWWA C110 - Ductile-Iron and Gray-Iron Fittings, 3 in. Through 48 in., for Water and Other Liquids.
- H. AWWA C111 - Rubber-Gasket Joints for Ductile-Iron and Pressure Pipe and Fittings.
- I. AWWA C115 - Flanged Ductile-Iron Pipe with Threaded Flanges.
- J. AWWA C150 - Thickness Design of Ductile-Iron Pipe.
- K. AWWA C151 - Ductile-Iron Pipe, Centrifugally Cast, for Water or Other Liquids.
- L. AWWA C153 - Ductile-Iron Compact Fittings, 3 inch Through 16 inch, for Water or Other Liquids.
- M. AWWA C606 - Grooved and Shouldered Joints.
- N. ANSI B18.2.1 - Square and Hex Bolts and Screws Inch Series.
- O. ANSI B18.2.2 - Square and Hex Nuts.
- P. AWS A5.6 - Specification for Covered Copper and Copper Alloy Arc Welding Electrodes.
- Q. AWS A5.15 - Specification for Welding Electrodes and Rods for Cast Iron.

1.03 SUBMITTALS

- A. Submit in accordance with Section 01 3000.
- B. Product Data: Include Manufacturer's specifications, catalog cuts, and literature:
 - 1. Pipe.
 - 2. Outside coatings.
 - 3. Inside linings.
 - 4. Flanged joints.
 - 5. Standard fittings.
 - 6. Special fittings.
 - 7. Wall pipe and floor pipe.
- C. Submit outside coating system for buried, interior, exterior, and submerged piping locations. Include submittal information specified in Section 09 9000.
- D. Identify the manufacturer and product designation of factory-applied exterior primer or coating furnished on exposed pipe and fittings.

- E. Submit written confirmation that factory-applied primer or coating is compatible with the field coating system specified in Section 09 9000, or identify required surface preparation or tie coat.
- F. Submit product data and coating system information specified above in one complete submittal.
- G. Shop Drawings showing layout for ductile iron piping systems shall be submitted in accordance with and transmitted under appropriate piping system specification section.
- H. A letter from the pipe and fitting manufacturers stating the product(s) are supplied new from the manufacturer and all linings required by the specifications for the pipe and fittings are supplied by the manufacturer and are covered by the manufacturer's warranty.

1.04 WARRANTY

- A. Full warranty against defects in materials and workmanship for two years after substantial completion, including all parts, labor, and expenses.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Liquid and Air Service Pipe: AWWA C151, ductile iron.
- B. Minimum Thickness Class:
 - 1. Flanged Joint Pipe: Thickness Class 53.

2.02 INSIDE LINING

- A. Ceramic Epoxy 40-60 mil thickness, Protecto 401, SP-2000, Permox-CTF, or Engineer approved equivalent, or as noted in pipeline schedule. Manufacturer shall provide testing report for lining materials including results of holiday test using no less than 62.5 volts per mil.

2.03 JOINTS

- A. Joint Type:
 - 1. Liquid piping shall be flanged end joint.
 - 2. As shown on Drawings if different than specified above for services and locations.
- B. Flanged Joints:
 - 1. Flanged pipe for liquid and air service shall be in accordance with AWWA C115.
 - 2. Fabrication of flanged pipe, including assembly of flange on pipe shall be performed by pipe manufacturer in accordance with AWWA C115. Assembly of flange on pipe outside of manufacturer's shop is unacceptable.
 - 3. Flange material for flanged pipe shall be ductile iron. Flanged pipe with gray iron flanges is not acceptable.
 - 4. Gasket material shall be suitable for service and maximum operating temperature of piping system as specified in Piping System Specification Section 22 1117. Torque requirement of gaskets shall be less than torque rating of flange, bolts, and nuts.
 - 5. Gaskets shall be full face, 1/8 inch thick, and conform to dimensions shown in Appendices to AWWA C110 and C115.
 - 6. Bolts:
 - a. Size, length, and number as shown in AWWA C110 and C115.
 - b. Material: 304 Stainless steel, ASTM A193, Grade 8.
 - c. Dimensions: ANSI B18.2.1, heavy hex.
 - 7. Nuts:
 - a. Size, length, and number as shown in AWWA C110 and C115.
 - b. Material: 304 Stainless steel, ASTM A194, Grade 8.
 - c. Dimensions: ANSI B18.2.2, heavy hex.
 - 8. Contractor to apply anti-seize compound to nuts and bolts

2.04 FITTINGS

- A. Pressure rating shall be 250 psi, minimum.

- B. Standard fittings for liquid and air service shall be as follows:
 - 1. Flanged Joint Fittings:
 - a. Ductile iron.
 - b. AWWA C110.
 - c. Flange dimensions in accordance with AWWA C115.
- C. Special fittings for liquid and air service, not included in AWWA standards, shall be manufacturer's standard, based on AWWA design principles, and in compliance with applicable requirements of AWWA standards.
- D. Wall Pipe and Floor Pipe:
 - 1. Ductile iron.
 - 2. Wall thickness of body equal to or greater than wall thickness of connecting pipe.
 - 3. Flanges set flush with face of concrete shall be tapped for stud bolts.
 - 4. Collar dimensions as shown on Drawings.
 - 5. Collar cast integral with pipe or fabricated by welded attachment of collar to pipe.
 - 6. Fabricated wall pipe and floor pipe shall be as follows.
 - a. Rated for dead end thrust due to 250 psi internal pressure.
 - b. Ductile iron collar welded continuously around pipe on both sides of collar.
 - c. Weld in pipe manufacturer's shop by qualified welder.
 - d. Electrodes: AWS A5.15, Class ENiFe-CI or AWS 5.6, Class ECuAl-2.

2.05 OUTSIDE COATING

- A. Buried piping shall be provided with asphaltic coating approximately 1 mil thick in accordance with applicable AWWA and ANSI standards.
- B. Surface preparation, priming, and finish coating of non-buried piping shall be compatible and in accordance with Section 09 9000, System 3A. Non-buried piping shall not have the asphaltic coating, but shall be provided with the specified shop prime coat.
- C. Surface preparation, priming, and finish coating of piping for submerged and splash areas shall be compatible with Section 09 9000, System 21, suitable for potable water use. Submerged/splash area piping shall not have the asphaltic coating, but shall be provided with the specified shop prime coat.
- D. Finish color for interior and exterior piping shall be as specified in Section 09 9000.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Process Piping: In accordance with Section 22 1117.

3.02 JOINT ASSEMBLY

- A. Flanged joint in accordance with Piping System Specification Section 22 1117, flanged pipe manufacturer's written instructions, and gasket manufacturer's written instructions.

3.03 WALL PIPE

- A. Support by formwork to prevent contact with reinforcing steel.

3.04 POLYETHYLENE ENCASEMENT

- A. Install in accordance with AWWA C105 for all buried piping.

END OF SECTION 22 1116

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**SECTION 22 1116.01
PIPING ACCESSORIES**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Submittals.
- B. Delivery, Storage, and Handling.
- C. Warranty.
- D. Piping Accessories, including: Flange Adapters, Flexible Couplings, Cutting-In Sleeves, Mechanical Joint Retainer Glands, Mechanical Joint Caps and Plugs, Dismantling Joint, and Modular Casing Seals.

1.02 REFERENCES

- A. ANSI B16.5 - Pipe Flanges and Flanged Fittings.
- B. ASTM A536 - Standard Specification for Ductile Iron Castings
- C. ASTM D2000 - Standard Classification System for Rubber Products in Automotive Applications.

1.03 SUBMITTALS

- A. Submit under provisions of Section 01 3000 - Administrative Requirements.
- B. Submit the following as appropriate for each item provided.
 - 1. Outline and installation drawings for equipment and fixtures furnished.
 - 2. Equipment performance data and operating characteristics.
 - 3. Manufacturer's catalog data, marked to indicate materials being furnished as standard equipment, fixtures, specialties, and accessories.
 - 4. Shop Drawings on shop-fabricated systems.
 - 5. Drawings showing arrangement of piping, controls, and accessory equipment furnished.
- C. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- D. Operation and Maintenance data as described in Section 01 7800 - Closeout Submittals.

1.04 DELIVERY, STORAGE AND HANDLING

- A. Arrange delivery of products in accordance with construction schedules and to allow inspection prior to installation.
- B. Coordinate deliveries to avoid conflict with conditions at site.
- C. Deliver products in undamaged condition in original containers or packaging, with identifying labels intact and legible.
- D. Clearly mark to identify partial deliveries of component parts to facilitate assembly.
- E. Store products immediately on delivery and protect until installed. Storage to be done according to manufacturer's instructions with seals and labels intact and legible.
- F. Provide platforms, blocking or skids, or coverings required to protect products from deterioration or damage.
- G. Arrange storage in a manner to provide easy access for inspection.
- H. Maintain storage conditions to prevent deterioration or damage.
- I. Protect products after installation to prevent damage from subsequent operations. Remove when no longer needed.
- J. Provide equipment and personnel necessary to handle products by methods to prevent damage to products or packaging.
- K. Handle products by methods to prevent bending or overstressing.

1.05 WARRANTY

- A. Full warranty against defects in materials and workmanship for two years after substantial completion, including all parts, labor, and expenses.

PART 2 PRODUCTS

2.01 PIPING ACCESSORIES

- A. Flange Adapters: Where indicated on the drawings and in these specifications. The intended use is to connect flange joint valves, fittings, and pipe to a plain end pipe. Flange joint shall match dimensions of Class 125, ANSI B16.1 and capable of being joined to Class 150, ANSI B16.5. Unless otherwise indicated, flange adapters shall have thrust protection such as set screws or anchor studs. Flange adapter working-pressure rating shall not be less than the specified piping-system test pressure. Flange adapters shall be by Series 2100 Megaflange by EBAA Iron Sales, Inc.
- B. Floor Box: Where indicated on the drawings. Floor box shall be constructed of Cast Iron Class 30 with bronze bushing with an inside diameter 1/16" larger than the outside diameter of the stem and shall be retained with two stainless steel screws. Underside of casting shall have 2-1/2" female threads. Lid shall be bolt-down with O-Ring to seal the floor box from the top side. Provide with a packing gland to seal the floor box from the underside. Floor box shall be manufactured by Trumbull Industries or Engineer approved equivalent.
- C. Couplings: Where indicated on the drawings and in these specifications. Couplings shall be steel or ductile iron and shall be intended for plain end steel or ductile iron pipe. Couplings shall be watertight at a working pressure of 150 psi. Couplings may be referred to as "Dresser Couplings" on the drawings. Couplings shall be Style 38 or Type 411.441 as manufactured by General Electric Company and Smith-Blair, Inc., respectively, or Engineer approved equivalent.
- D. Cutting-In Sleeves: Where indicated on the drawings. Sleeves shall be F-1220 as manufactured by Clow Corporation, A-10762 by American Cast Iron Pipe Company, or Engineer approved equivalent.
- E. Mechanical Joint Retainer Glands: Where indicated on the drawings. These glands shall be Megalug by EBAA Iron Sales, Inc., or Engineer approved equivalent.
- F. Mechanical Joint Caps and Plugs: Where indicated on the drawings. MJ caps and plugs shall be manufactured by Clow Corporation, by American Cast Iron Pipe Company, or Engineer approved equivalent.
- G. Dismantling Joints: Flanged Adapter Body: ASTM A513, ASME SA 675 GR60, or Ductile Iron ASTM A536. Steel Flange extension, bolts matching piping system. NBR Gaskets made from rubber compounded for water and sewer service in accordance with ASTM D2000 MBA810Z. Dismantling Joints shall have thrust restraint and shall be watertight at a working pressure of 150 psi. Dismantling joints shall be as manufactured by Romac, Smith-Blair, or Engineer approved equivalent. Bolts, nuts, and tie rods shall be Type 304 or 316 stainless steel.
- H. Modular Casing Seals
1. Modular wall seals shall be used to secure and seal the annular space around all new sleeved and core-drilled wall penetrations. See Drawings for additional details.
 2. Single seals shall be provided for all sleeves and cores in walls up to 14-inches thick. Dual seals shall be provided in larger walls or where otherwise noted.
 3. Casing seals shall consist of modular, bolted, synthetic-rubber sealing elements. Products shall be Link-Seal manufactured by GPT Industries or Engineer approved equivalent.
 4. Wall sleeves and concrete core diameters shall be sized sufficiently to accommodate the modular elements.
 5. Contractor shall contact manufacturer for proper casing seal size to work with circumstance of manhole.
 6. Field verify the inside diameter of the existing sleeve or penetration and outside diameter of the carrier pipe prior to ordering modular casing seals.

7. Submit field-verified dimensions to the modular casing seal manufacturer. Provide manufacturer's written selection of sealing element size, model, number of links, and installation requirements for the actual annular space.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Installed in accordance with Manufacturer's recommendations, as shown on the plans, by qualified craftsmen.
- B. Location, orientation, and quantities as shown on the plans.
- C. Include all required related items necessary for a complete installation.
- D. Surface preparation shall follow the piping surface preparation specification. Contractor shall be responsible for compatibility of manufacturers shop coating and final finish.

END OF SECTION 22 1116.01

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**SECTION 22 1117
PROCESS-MECHANICAL PIPING SYSTEMS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. This section identifies process-mechanical piping systems to be provided, specifies unique requirements for each system identified, and references other sections where detailed requirements of piping components are specified.
- B. Process-mechanical piping systems are shown on Process-Mechanical Drawings and on Civil Site Piping Drawings. Civil Site Piping Drawings may also show site utility, plumbing, fire protection, and HVAC piping systems which are specified in other sections.

1.02 WARRANTY

- A. Full warranty against defects in materials and workmanship for two years after substantial completion, including all parts, labor, and expenses.

PART 2 PRODUCTS

2.01 PIPE AND FITTINGS

- A. Provide pipe and fittings as shown on Drawings and as specified in sections identified in Process-Mechanical Piping Schedule presented in Part 3 of this section.

2.02 PIPING SUPPORT, FLEXIBILITY, THERMAL EXPANSION, AND ANCHORAGE

- A. Provide support system for each nonburied process mechanical piping system in accordance with Section 22 0529.
- B. Provide anchors, restraints, and concrete blocks as required to resist hydraulic thrust and forces due to thermal expansion.
- C. Piping shall allow for thermal expansion and contraction due to differences in operating temperatures and temperatures piping is exposed to during construction. Provide piping system products to allow for and control movement of piping due to thermal expansion and contraction.
- D. No attempt has been made to show all pipe supports, hangers, anchors, expansion joints, and other piping products required for piping support, thermal expansion, and anchorage. Absence of these products on Drawings does not relieve Contractor of the responsibility for providing them in accordance with these Specifications.
- E. Provide joints, couplings, and expansion joints as shown on Drawings and as required for piping flexibility. No attempt has been made to show all joints, couplings, expansion joints, and other piping products required for piping flexibility.

2.03 OTHER PIPING PRODUCTS

- A. Provide buried pipe materials and fittings in accordance with Section 33 1416.
- B. Provide piping specialties in accordance with Section 22 1116.01.

2.04 COATINGS

- A. Coat exterior surfaces of piping products with coating specified in Part 3 of this Section and in accordance with Section 09 9000.
- B. Coat piping insulation in accordance with Section 22 0719.

PART 3 EXECUTION

3.01 PREPARATION

- A. Use proper implements, tools, and facilities for safe and proper handling and protection of piping products prior to installation. Handle piping products carefully to avoid damage to products.

- B. Carefully inspect piping products before installation. Provide new, repair or recondition damaged piping products. Repair or reconditioning is subject to Engineer's approval. Patch damaged interior linings and exterior coatings or replace damaged product with new product. Patching is subject to Engineer's approval.
- C. Clean ends of piping product thoroughly before installation. Remove foreign matter and dirt from inside of piping product and keep product clean until Work has been accepted.

3.02 INSTALLATION

- A. Location:
 - 1. Install piping in accordance with arrangements shown on Drawings. Install piping parallel to structure lines unless shown otherwise on Drawings.
 - 2. Do not install piping through beams, columns, or other structural members unless shown otherwise on Drawings.
- B. Assembly:
 - 1. Install in accordance with manufacturer's recommendations by qualified craftsmen.
 - 2. Install piping without springing or forcing in manner which would cause stress in piping, valves, or connected equipment.
 - 3. Set pipe flanges level, plumb, and aligned. Set flanged fittings so flange is true and perpendicular to pipe axis. Set flanges so bolt holes straddle vertical centerline of pipes.
 - 4. For flanged connections, match bolt holes and obtain uniform contact over entire flange area prior to installation of flange bolts. Tighten bolts to uniformly compress gaskets and minimize flange stress. Tighten bolts to torque recommended by gasket manufacturer. Coat nuts and bolts with anti-seize thread compound.
 - 5. Machine off raised-face of steel flange when mating with flat-faced flange.
- C. Pump and Equipment Connections:
 - 1. Align pipe, equipment, and pumps so stresses are not transmitted to connections. Support piping independently from pumps and equipment. Do not support piping from equipment and pumps.
 - 2. Install couplings, adapters, expansion joints, flanges, and unions so pumps, equipment, valves, and in-line instruments can be removed from service without disruption to other portions of piping system.
 - 3. For welded nozzle connections, allow for shrinkage during welding to prevent excessive stresses on pumps and equipment.
 - 4. Provide piping from pump and equipment drains and overflows to floor drain system.
 - 5. Provide control lines such as air and bubbler level system piping necessary for operation of pumps, equipment, valves, and on-line instruments.
- D. Install insulating flange, insulating coupling or dielectric union at each connection between ferrous and non-ferrous metal piping.

3.03 FIELD QUALITY CONTROL

- A. Inspect installed piping products for dents, kinks, abrupt changes of curvature, damage to lining, and other damage. Repair or recondition damaged products as approved by Engineer or replace damaged products with new products.
- B. Inspect installed, unlined piping products for corrosion and scale on interior surfaces. Clean products to remove corrosion and scale or replace with new products.
- C. Field Testing - Operational Leak Test: The new piping in the Monfort Structure and in the SBR Pump Building shall be subjected to an operational leak test under normal operating conditions.
 - 1. After completion of piping modification and reassembly of piping, the Contractor shall notify the Owner and Engineer that the system is ready for testing.
 - 2. The Owner will open the valves and/or start the pumps to place the piping into normal operating service.
 - 3. The piping system shall be operated at normal system pressures for a minimum period of 120 minutes.

4. During operation, the Contractor shall:
 - a. Visually inspect all joints, saddles, and plugs.
 - b. Inspect interior floor and surrounding areas for evidence of leakage.
 - c. Wipe joints as necessary to confirm active seepage versus residual moisture.
 - d. Monitor for movement, vibration, or abnormal joint behavior.
 5. No visible leakage, weeping, or gasket extrusion will be permitted.
 6. If leakage is observed:
 - a. The pump or piping segment shall be shut down by Owner.
 - b. The Contractor shall correct the deficiency.
 - c. The operational test shall be repeated until no leakage is observed.
 7. Acceptance of the operational test does not relieve Contractor of responsibility for defective workmanship during the warranty period.
- D. For all piping other than the SBR Pump Building and Monfort Structure Piping, provide system testing in accordance with Section 33 1416, 33 3111, and requirements specified in Process Mechanical Piping Schedule in Part 3.05 of this Section.
- E. Hydrostatic Test
1. Provide temporary equipment for testing all pressure lines, including pump and gauges.
 - a. Test using Ashcroft Model 1082 with 4.5" dial face at 1 psi increments or equal.
 - b. Install, at Contractor's expense, corporation cocks as required at all high points in the system if necessary to completely expel all air. After all the air has been expelled, remove corporation cocks and plug or close prior to testing. Owner to determine whether the corporation cocks are removed or left in place.
 2. Tests individual piping sections between valves in order to test the integrity of the valves as well as the piping. Fill each section with water and pressurize for indicated pressure and time.
 - a. Required test period is 2 hours.
 - b. Completely expel air from the system before pressurizing.
 - c. The test pressure shall be not less than 1.25 times the working pressure at the highest point along the test section and not less than 1.5 times the working pressure at the point of testing. Coordinate with Engineer for test pressure of each line.
 - d. Observe each test section for leakage at end of test period. Test fails if leakage observed or pressure drop exceeds 1 psi over 2 hours.
 3. Repair all visible leaks regardless of the amount of leakage. Damaged or defective pipe, fittings, valves, or joints discovered in the pressure test shall be replaced by the Contractor and the test repeated until the test results are satisfactory. Do not use chemicals, stop-leak compounds, mastics or other temporary repair methods.
 4. Drain test water from piping systems after testing and repair work complete.

3.04 CLEANING

- A. After installation and field quality control, remove dirt, rocks, debris and other foreign matter from interior of each piping system.
- B. Water flush each hydrostatically tested piping system unless specified otherwise.
 1. Flushing velocities of 2.5 feet per second shall be maintained until accumulated debris has been removed.
 2. Insert cone strainers at equipment connections prior to flushing. Remove cone strainers after flushing is complete.
 3. Remove accumulated debris through drains not less than 2 inches in diameter or by temporarily removing pipe spools, fittings, or valves.
 4. Drain piping after flushing and immediately dry piping with compressed air.
- C. Blow clean each pneumatically tested piping system with compressed air unless specified otherwise.

3.05 PROCESS MECHANICAL PIPING SCHEDULE

- A. Provide piping systems in accordance with requirements specified.
- B. Piping materials, sizes, and locations are as shown on the drawings.
- C. Color coding and banding shall be provided for non-buried piping systems. Provide color coding, banding, and labeling in accordance with Section 09 9000 and 22 0553.
- D. Schedule:
 - 1. Monfort Structure Piping (Exposed)
 - a. Type: AWAA C151, ductile iron
 - b. Diameter (nominal): 6-inch
 - c. Exterior Coating: See section 22 1116
 - d. Interior Coating: Ceramic epoxy lining, see section 22 1116
 - e. Joint Type: Flanged
 - f. Rating: Pressure Class 53
 - g. Service: Raw Industry Wastewater
 - 2. SBR Pump Discharge Piping (Exposed)
 - a. Type: AWAA C151, ductile iron
 - b. Diameter (nominal): 8-inch
 - c. Exterior Coating: See section 22 1116
 - d. Interior Coating: Ceramic epoxy lining, see section 22 1116
 - e. Joint Type: Flanged
 - f. Rating: Pressure Class 53
 - g. Service: Raw Industry Wastewater
 - 3. Yard Piping (Buried)
 - a. Type: AWAA C900 PVC
 - b. Diameter (nominal): 18-inch, 12-inch, 8-inch
 - c. Exterior Coating: See section 33 3111
 - d. Interior Coating: See section 33 3111
 - e. Joint Type: See section 33 3111
 - f. Rating: See section 33 3111
 - g. Service: Raw Industry Wastewater
 - 4. FEB Piping (Exposed)
 - a. Type: AWAA C151, ductile iron
 - b. Diameter (nominal): 24-inch, 12-inch, 8-inch, and 6-inch
 - c. Exterior Coating: See section 22 1116
 - d. Interior Coating: Ceramic epoxy lining, see section 22 1116
 - e. Joint Type: Flanged
 - f. Rating: Pressure Class 53
 - g. Service: Raw Industry Wastewater
 - 5. 5.5'X10' Valve Vault Piping (Exposed)
 - a. Type: AWAA C151, ductile iron
 - b. Diameter (nominal): 12-inch and 8-inch
 - c. Exterior Coating: See section 22 1116
 - d. Interior Coating: Ceramic epoxy lining, see section 22 1116
 - e. Joint Type: Flanged
 - f. Rating: Pressure Class 53
 - g. Service: Raw Industry Wastewater
 - 6. 5.5'X7.5' Valve Vault Piping (Exposed)
 - a. Type: AWAA C151, ductile iron
 - b. Diameter (nominal): 12-inch and 8-inch
 - c. Exterior Coating: See section 22 1116
 - d. Interior Coating: Ceramic epoxy lining, see section 22 1116

- e. Joint Type: Flanged
- f. Rating: Pressure Class 53
- g. Service: Raw Industry Wastewater
- 7. 72" Diameter Valve Vault Piping (Exposed)
 - a. Type: AWAA C151, ductile iron
 - b. Diameter (nominal): 12-inch
 - c. Exterior Coating: See section 22 1116
 - d. Interior Coating: Ceramic epoxy lining, see section 22 1116
 - e. Joint Type: Flanged
 - f. Rating: Pressure Class 53
 - g. Service: Raw Industry Wastewater

END OF SECTION 22 1117

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SECTION 25 1300
INSTRUMENTATION AND CONTROL INTEGRATION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Integration of instrumentation and controls system, provided by a single systems integrator, furnishing and activating items specified in Sections 25 1300, 25 1316, 25 3100, 25 9100, 25 9110, and 25 9120.

1.02 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. The Submittals shall consist of legible printed text, high quality drawings, and manufacturer's catalog data bound in an electronic PDF (indexed, book marked, and searchable), that identify major sections of the document. The Submittals shall address all hardware and software to be supplied.
- C. The Submittals shall contain:
 - 1. Identification of the respective responsibilities of each party to the project, including what is provided by the system manufacturer, what is to be subcontracted, etc.
 - 2. Description of the major user related features and operating characteristics of the proposed system.
 - 3. Description of all master site hardware and software, including examples of digital displays, control loops, reports, and how the operator will interface with the system to achieve each specified function.
 - 4. Description and operation of all master configuration features of the I/O and local control loop characteristics.
 - 5. Describe the training program. An outline shall be provided that covers the basic software and hardware training, operator training, system maintenance training, and programming training. Identify the course content and the time spent on each subject area.
 - 6. Describe the startup implementation plan, participants' responsibilities and a schedule of events.
 - 7. All significant equipment to be supplied shall be listed, followed by descriptive data sheets. The equipment list shall include each component name, manufacturer, model number, a description of the operation, quantity supplied, and any special setup and operation and maintenance characteristics.
 - 8. Drawings of equipment to be supplied shall include as a minimum, overall dimensions and details for each unit, including installation arrangements, door mounted operator devices, and instruments. Wiring diagrams of all system components, including field device connections, shall be included and specific installation wiring responsibilities identified.
 - 9. Detailed written sequences of operation describing pre-startup, normal operation, shutdown, and emergency shutdown procedures.
 - 10. Detailed factory and field test procedures at least two weeks before scheduled testing.
 - 11. Color printout of all SCADA screens to be provided. Integrator shall include two (2) trips and two (2) one-day meetings on-site at the Owners location during the development of screens for review of work product to date and direction for further work.
 - 12. Recommended maintenance, special tools, and test equipment.
 - 13. Hardware configuration block diagrams.
 - 14. Network diagrams.
- D. Operation and maintenance manuals.

1.03 MAINTENANCE MANUALS AND RECORD DRAWINGS

- A. O&M Manuals shall be provided as specified in Section 01 7800. In addition to those requirements, specific additional details as indicated below shall be provided.

- B. Provide detailed O&M manuals with complete information concerning the operation of the system and support necessary, with diagnostics down to the module and card replacement level.
- C. Provide a detailed written description of system hardware, software, and system operation. The description of master site hardware and software shall identify pertinent references to sections of standard hardware and software manuals where operational procedures are detailed. Control loops shall be fully described in the O&M manual.
- D. Submit four sets of complete O&M manuals with all project specific information in binders with indexed tab sections. Include manufacturer/supplier, contact and phone number for all equipment listed. Submit a digitized version of complete O&M manuals on disk or CD.
- E. A listing of all recommended spare parts shall be included in the O&M manuals.
- F. Data sheets shall be supplied for all significant equipment used in the system. The data sheet shall include, as a minimum, the component name, manufacturer, model number, quantity, and any special O&M characteristics.
- G. Final record drawings of equipment shall be provided and as a minimum to include:
 - 1. Overall dimensions and details for all equipment and all door mounted operator devices including nameplate designations.
 - 2. Interconnecting wiring diagrams of all master station equipment, including field device connections.
 - 3. PLC and OIT programs including well documented ladder logic program, flow chart, address list, and passwords (electronic).
- H. Detailed written sequences of operation describing pre-startup, startup, normal operation, shutdown, and emergency shutdown procedures.
- I. Alarm list:
 - 1. Provide list of process alarms as configured.
 - 2. Provide list of PLC and SCADA equipment and communications alarms as configured and indicate likely source of problem.
- J. PLC and SCADA programs and graphics documentation: commented, fully documented and cross-indexed ladder diagrams and screen configurations.
- K. Equipment and software manuals:
 - 1. Equipment list identifying components, model numbers, and release levels.
 - 2. Operation and maintenance data for each hardware and software component.
 - 3. Programming/configuration instructions for components.
- L. Guides for locating faults, symptoms, possible causes of trouble, and suggested remedial action.
- M. Detailed instructions on operation of utility programs.
- N. Documentation concerning system software development:
 - 1. Diagrams, code annotation, and other pertinent documents to define system.
 - 2. Listing of screens included in system.
 - 3. Color printout of all screens.
 - 4. Database structures, views, tables, and indexes.
 - 5. List of constants and variables with descriptions.
 - 6. Passwords.
 - 7. Network Addresses.
- O. Documents pertaining to factory and field testing efforts.
- P. Equipment lists including manufacturer's name, part number, serial number, revision number, and recommended spare parts.
- Q. Communication parameters needed to interface with other computers (speed, number of data bits, parity, modem control, etc.).

1.04 WARRANTY

- A. Full warranty against defects in materials and workmanship for two years after substantial completion, including all parts, labor, and expenses.

1.05 MAINTENANCE CONTRACT

- A. The Systems Integrator may offer the Owner a maintenance contract on the system.
- B. The contract shall provide for recommended preventive maintenance, required emergency maintenance and the supply of all consumable items and parts of components which may fail during the life of the contract, and shall be dated to begin when the warranty period expires.
- C. The Owner reserves the right to accept or reject the maintenance contract.
- D. The maintenance contract cost shall not be included as part of this project, but shall be an item negotiated between Owner and systems integrator.

1.06 START-UP BY SERVICE REPRESENTATIVE

- A. Provide qualified service representative to perform functions described in 01400 and the following.
- B. Provide for equipment installation check, calibrations, control adjustments, startups, and other services in the field by qualified service representative to produce complete working installation in compliance with drawings and specifications, satisfactory to Owner and Engineer.
- C. Provide field startup service at the project site.
- D. This field service is to cover both the separate mounted instrumentation involved in the system and the various control panels and components.
- E. Coordinate with General Contractor, Sub-Contractors and Equipment Suppliers to provide start-up services in concert with other equipment in the project.
- F. In addition to the field services, arrange for Owner training to be performed by the Manufacturer in the use and maintenance of all instrumentation and control system equipment supplied. Refer to scheduled training requirements.
- G. Provide complete start-up services until all systems are fully functional.
- H. Any additional trips and/or days required by the Contractor before or after final startup and training shall not be charged to the Owner.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 INSTALLATION

- A. All units shall be installed in accordance with manufacturer's recommendations and Section 46 0500, and as indicated on drawings.
- B. Units shall be installed and programmed by well qualified and experienced craftsmen and engineers/technicians.
- C. Locations, orientations, and quantities as indicated on drawings.
- D. Units shall be properly interfaced with the input and output devices.
- E. Electrical and control wiring, cabling, conduits, connections, etc. shall be neatly installed.
- F. Include all required and related items for a complete installation.
- G. Manufacturer's shop coating and final finish, as per Section 09 9000, shall be compatible.
- H. Support and anchor all units as per the manufacturer's recommendations and as indicated on drawings.

3.02 RESPONSIBILITY

- A. The instrumentation and control integrator shall be responsible for coordination of the control center components, instrumentation, and supervisory controls with the process equipment installed.

- B. Provide complete shop drawings and wiring diagrams.
- C. To ensure a complete and totally integrated system, a single manufacturer who has had at least five years experience in furnishing similar microprocessor based control and telemetry systems, shall supply all specified equipment and services. This shall include: hardware, software, programming, installation coordination, startup, training, and warranty services as required. The manufacturer shall have successfully completed at least ten similar sized non-proprietary PLC-based telemetry, instrumentation and controls systems.
- D. To ensure an integrated and operational control system it is required that one system integrator shall supply all necessary control equipment and employ the personnel necessary to provide and support the complete system.
- E. Systems Integrator's service organization must stock parts for equipment supplied and be available within 24 hours of verbal notice on all days of the week to provide free service during the guarantee period. System integrator's organization shall include the full complement of engineering, manufacturing, and field services.
- F. Service shall also be available 24 hours per day, 365 days per year.

3.03 SYSTEMS INTEGRATOR

- A. Shall be an Allen-Bradley authorized systems integrator.
- B. Shall have successfully configured and installed at least ten (10) networked systems of similar size, scope, and complexity in water/wastewater plant applications.
- C. Shall provide project engineer for programming the PLCs and SCADA software on this project who is formally trained and experienced with Allen-Bradley and Wonderware or Intellution software.
- D. Experience shall include multiple PLCs, networking on CAT 6 and fiber optic, WAN/LAN networks with multiple SCADA workstations, graphical screens, reporting, operating systems, etc.
- E. Acceptable Systems Integrators:
 - 1. Jetco Inc., Altoona, IA.
 - 2. No Substitutions.

END OF SECTION 25 1300

**SECTION 25 1316
BOXES, PANELS, AND CONTROL CENTERS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Control Panels.

1.02 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Submit panel layouts: Front and back.
- C. Submit schematic diagrams, fully documented.
- D. Product Data: Provide for all components.

1.03 TESTING, CALLBACK, AND MAINTENANCE SERVICE

- A. Field inspection and testing:
 - 1. Repeat factory testing after field installation with field and elements.
 - 2. A minimum of five days of field inspection and testing by the manufacturer shall be required, and any additional days necessary to complete field inspection and testing of all control panels under this contract.
 - 3. Field inspection and testing reports shall be provided to the Engineer.
- B. Callback services:
 - 1. Callback services shall be included by the systems integrator to assist in operational adjustments, calibration checks and to provide further operator training.
 - 2. Callback time is based upon the start of the warranty period. Callback work is to be performed as part of the warranty.

1.04 WARRANTY

- A. Full warranty against defects in materials and workmanship for two years after substantial completion, including all parts, labor, and expenses.

1.05 SERVICE REPRESENTATIVE

- A. Provide qualified service representative to perform functions described in 01 4000 and to sign Certificate of Proper Inspection attached at end of Section 01 4000.

PART 2 PRODUCTS

2.01 HARDWARE AND COMPONENTS SPECIFICATIONS

- A. This section shall specify various items of hardware, components, and equipment to be utilized in the controls system.
- B. All panels shall be UL labeled for UL 508A. Panels with Intrinsic safe circuits shall be UL labeled for UL 698A in addition to 508A.
- C. Adequate transient surge voltage protection shall be provided to protect the solid state equipment from voltage surges
- D. All electrical components shall be UL approved and are to be of general purpose, heavy duty grade. Custom designed components not readily available from conventional industry sources shall not be used.

2.02 IDENTIFICATION

- A. All components, door mounted and interior, shall be labeled. Use mnemonic labels (e.g. NTFV1 for north tank flow valve #1) as much as possible. Use each item's official tag name and number.
- B. Nameplates on the exterior of the panel shall be reverse engraved, white letters on black background (or otherwise as indicated), with the exposed face flat and smooth. Standard nameplate size of 0.75" x 2.5".

- C. All components on the interior of the panel shall be labeled with nameplates permanent markings which shall identify the device, cross-referencing it with the schematic drawings.
- D. This shall include every relay, time delay, switch, and all other system components.
- E. All individual wires, both inside control panels/consoles and at each remote instrument or device, shall be wire tagged at each end with a unique number matching the wire number identification on the schematic. Wire tags shall be plastic heat shrunk tags, not paper.
- F. Multiple conductor cable, such as ribbon cable with a permanent plug connector at each end, need not be marked.

2.03 SPARE PARTS

- A. The following spare parts shall be provided:
 - 1. Two units or 10% of the total quantity of each used, whichever is greater, spare indicator lamps, relays and time delays of each type.
 - 2. Ten control fuses of each type and size.

2.04 CONTROL RELAYS

- A. All control relays shall be plug-in style, provided with dust protecting enclosure and identical, 11 blade plug-in bases with screw terminals. All relays in all panels shall be standardized as much as possible to one or minimum number of relay manufacturers and models.
- B. Relays shall have an indication flag to indicate the energized status of the relay.
- C. Any relay whose operating frequency would indicate a life of less than twenty years, shall be solid state, either plug-in as above, or with screw terminals.

2.05 LOOP ISOLATION

- A. Provide a surge protection device on all input and output circuits (analog, discrete, or digital communication) that enter or leave the building or structure in which the control panel is located.
- B. Manufacturers:
 - 1. Innovative Technology Type OEM-D22.
 - 2. EDCO Type PC642.

2.06 CONTROL PANEL ELECTRICAL WORK

- A. Wiring:
 - 1. Internal panel wiring shall be completed at the factory in a professional manner.
 - 2. Wiring shall be bundled in wire duct for ease of field modification or tracing, except for the required bundling with wire ties on the run to the door mounted components.
 - 3. Wire duct shall be provided on field side of terminal blocks to accommodate field wiring.
 - 4. All field interconnections shall be made to tubular clamp style terminal strips which shall be marked with the wire numbers of the connecting wires.
- B. Materials and protection:
 - 1. All wire shall be stranded copper, of adequate ampacity in order to provide the rated operating voltage for all components under all extremes of operation.
 - 2. Wiring which carries low voltage signals subject to transients shall be protected by isolation and shielding.
 - 3. Insulation - Type MTW cabinet wiring.
 - 4. Insulation - Type THWN, THHN Field wiring.
- C. Identification:
 - 1. Each wire shall be identified with an easily readable permanent wire marker, identifying the wire number. Numbering system shall be consistent throughout system, identifying all terminals.
 - 2. The "record" schematics shall identify that wire number for future maintenance requirements.
 - 3. An exception will be made for ribbon cable connectors which are provided with a permanent connector, providing the cables can be easily unplugged and reinstalled without confusion.

- D. Connections and mounting:
 - 1. All devices, regardless of location in or on the panel, shall be mechanically mounted and electrically wired in a manner allowing easy removal, replacement, or exchange without requiring a soldering iron or special tools.
 - 2. All connections shall be of screw-type or plug-type connectors.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install in accordance with manufacturer's instructions and as indicated on Drawings.
- B. Units shall be installed by well qualified and experienced technicians.
- C. Units shall be properly interfaced with the input and output devices.
- D. Include all required-related items for a complete installation.
- E. Contractor shall be responsible for compatibility of manufacturer's shop coating and final finish.
- F. Support and anchor all units as per the manufacturer's recommendations and as indicated on drawings.
- G. Control panels shall be provided with an Underwriters Laboratories (UL) label certifying that the panels meet UL Rule 508A requirements and 698A when applicable. All work shall be in accordance with the National Electric Code and NEMA standards.
- H. Repeat factory testing after field installation with field end elements. A minimum of one day of field inspection and testing by the manufacturer shall be provided. Field inspection and testing reports shall be provided to the Engineer.

END OF SECTION 25 1316

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**SECTION 25 3100
REMOTE INSTRUMENTS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Process Instruments (Electrical/Electronic)
 - 1. Flow, Liquid, Magnetic Flow Tube, Large Diameter
 - 2. Level, Liquid, Float Switch, Standard Duty
 - 3. Pressure, Transducer/Transmitter, Fluid Level Specific

1.02 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Submit legible printed text, high quality drawings, and manufacturer's catalog data bound in notebooks with index tabs that identify major sections of the document.
- C. The submittal shall address all hardware and software to be supplied.
- D. The submittal shall contain:
 - 1. Identification of the respective responsibilities of each party to the project, including what is provided by the system manufacturer, what is to be subcontracted, etc.
 - 2. Description of the major user related features and operating characteristics of the proposed system.
 - 3. Description of all master site hardware and software, including examples of digital displays, control loops, reports, and how the operator will interface with the system to achieve each specified function.
 - 4. Description and operation of all master configuration features of the I/O and local control loop characteristics.
 - 5. Description of the training program. An outline shall be provided that covers the basic software and hardware training, operator training, system maintenance training, and programming training. Identify the course content and the time spent on each subject area.
 - 6. Description of the startup implementation plan, participants' responsibilities and a schedule of events.
 - 7. All significant equipment to be supplied shall be listed, followed by descriptive data sheets. The equipment list shall include each component name, manufacturer, model number, a description of the operation, quantity supplied, and any special setup and operation and maintenance characteristics.
 - 8. Drawings of equipment to be supplied shall include as a minimum, overall dimensions and details for each unit, including installation arrangements, door mounted operator devices, and instruments. Wiring diagrams of all system components, including field device connections, shall be included and specific installation wiring responsibilities identified.
- E. Submit operations and maintenance manuals.

1.03 SERVICE REPRESENTATIVE

- A. Provide qualified Service Representative to perform functions described in Section 01 4000, and to sign the Certification of Proper Inspection attached at the end of Section 01 4000.

1.04 WARRANTY

- A. Full warranty against defects in materials and workmanship for two years after substantial completion, including all parts, labor, and expenses.

PART 2 PRODUCTS

2.01 PROCESS INSTRUMENTS (ELECTRICAL/ELECTRONIC)

- A. FLOW, LIQUID MAGNETIC FLOW TUBE AND TRANSMITTER (large diameter)
 - 1. General
 - a. Function: Measure, indicate and transmit liquid process flow in a closed full pipe.

- b. Type: Pulsed DC magnetic field into a conductive process liquid by means of a manufacturer's flow tube.
 - c. Parts: Flow element and transmitter with interconnecting cables, mounting hardware, and hand-held field calibrator/configurator.
- 2. Service.
 - a. Type: multiple installations and conditions; see schedule
 - b. Pressure range: multiple installations and conditions; see schedule
 - c. Temperature range: multiple installations and conditions; see installation schedule
 - d. Process pipe size: multiple installations and conditions; see installation schedule
 - e. Process pipe material: metallic lined
 - f. Special conditions: none
- 3. Performance:
 - a. Flow range: see schedule
 - b. Accuracy: +/- 0.5%
 - c. Repeatability: +/- 0.2% of span
 - d. Minimum accurate flow velocity: 1.6 ft/sec.
- 4. Element
 - a. Type: flow tube with liner, electrodes, ground rings, adapter flanges, flange gaskets, seals, and flange bolts as required.
 - 1) Flow tube size: multiple installations, see schedule.
 - 2) Flow tube material: manufacturer's standard
 - 3) Flow tube liner: polyurethane
 - 4) Flow tube electrodes: 316 stainless steel, bullet nose.
 - 5) Flow tube ground rings: 316 stainless steel
 - 6) Flow tube process connection type: flanged, ANSI Class 150.
 - 7) Flow tube flange bolt material: plated steel.
 - 8) Enclosure electrical rating: NEMA 4X/IP67.
 - 9) Enclosure safety rating: FM ordinary location, Class 1, Div. 1, or Class 1. Div. 2 as indicated on plan sheets.
- 5. Transmitter
 - a. Type of physical installation: multiple installations, see schedule.
 - b. Required Features
 - 1) Measurement results: flow rate in programmable engineering units.
 - 2) Local indicator and operator interface.
 - (a) At least a two line LCD display with keypad; field capable of programming, diagnostic evaluation, and flow display (in chosen engineering units) without the requirement of an additional hand held programming device.
 - (b) Alarms: at least two discrete alarms separately programmable for flow high/low and flow direction -- see "Electrical".
 - (c) Transmit a linear signal proportional to the measured signal as scaled by programmable zero and span engineering units -- see "Electrical".
 - (d) Stored operating parameters and calibration data shall not be lost on interruption of power source.
 - 3) Ambient environment:
 - (a) Location: multiple installations and conditions; see schedule
 - (b) Mounting: wall mounted unless otherwise noted.
 - (c) Temperature: within 45 - 110 F.
 - (d) Humidity: up to 90% non-condensing.
 - (e) Controller Enclosure: NEMA 4X/ IP67
 - 4) Electrical
 - (a) Compliance/Certification/Listing: manufacturer's standard.
 - (b) Power Source: 120 VAC 60 Hz, 25 VA max.

- (c) Discrete outputs: at least one output capable of sinking up to 150 mA @ 30 Vdc max.
 - (d) Analog output(s): minimum of one isolated 4-20 mA output capable of driving at least a 500 ohm external load.
 - 6. Acceptable Manufacturers
 - a. Rosemount: Series 8750W flow tube with Series 8712 transmitter.
 - b. Endress + Hauser Promag 400W Series.
- B. LEVEL, LIQUID, FLOAT SWITCH, STANDARD DUTY
 - 1. General
 - a. Function: Measure discrete level.
 - b. Type: Submerged or floating in process liquid.
 - c. Parts: Float switch, connecting electrical cable, internal weight, and suspension bracket with fasteners, and float cable grips.
 - 2. Service
 - a. Type: municipal wastewater
 - b. Temperature range: 32 - 100 F
 - c. Special conditions: hazardous locations require intrinsically safe circuits.
 - 3. Performance
 - a. Control differential: no less than +/- 1" from horizontal.
 - b. Not affected by float rotation.
 - 4. Required Features:
 - a. Non-mercury mechanical switch.
 - b. Displace a minimum of 25 cubic inches.
 - c. Water resistant SJOW electrical cord, 18 GA. minimum conductor size.
 - d. Internal weight.
 - 5. Electrical
 - a. N.O. or N.C. contacts rated @ 3A, 120/240 VAC minimum.
 - 6. Accessories
 - a. Stainless steel mounting bracket capable of supporting a group of float switches (as required in 25 9110 Schedule).
 - b. Include with mounting bracket, strain-relief, field-adjustable, cable clamps for field height adjustment.
 - 7. Acceptable Manufacturers
 - a. Anchor Scientific, Eco-Float series.
 - b. Conery, 2900 series.
 - c. SJE Rhombus, SignalMaster series.
 - d. No Substitutes.
- C. PRESSURE, TRANSDUCER/TRANSMITTER, FLUID LEVEL SPECIFIC
 - 1. Furnish and install pressure transducer/transmitters as indicated on drawings and in the instrumentation and controls schedule.
 - 2. The pressure transducer/transmitter is intended for measuring pressure and transmitting a linear 4-20 mADC output for use in a standard two (2) wire DC supply voltage system.
 - 3. The controls system manufacturer shall provide the power supply for this two-wire device in the control panel. The specifications for this transducer/transmitter are as follows:
 - a. Accuracy: + or - 0.10% of span.
 - b. Supply Voltage: 24 V dc (4-20 mA).
 - c. RFI Protection: 0.1% error between 27 and 500 MHz at 120 V/m field intensity.
 - d. Housing Finish: Epoxy.
 - e. Enclosure: IEC IP65 (NEMA Type 4X).
 - f. Mounting: Direct to process.
 - g. Process Connection: flanged 3" 150# ANSI.

- h. Electronics: Encapsulated and enclosed in housing sealed with O-rings for double protection against moisture or other contaminants.
- i. Input Span: 0 psi minimum, 1000" H2O maximum
- j. Connector: 150# ANSI carbon steel flange.
- k. Diaphragm: AISI Type 316L SS.
- l. Sensor Fill Fluid: Dow Corning dimethyl siloxane (DC200) or equal.
- m. Ambient Temp. Limits: -40 degrees F to 185 degrees F.
- n. Options:
 - 1) Local LCD digital process meter
 - 2) Flushing ring with 1/2" NPT flush connection.
- 4. Approved Manufacturers:
 - a. Rosemount, Model 3051L.
 - b. Engineer Approved Equivalent.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install units in accordance with manufacturer's recommendations and as indicated on drawings.
- B. Units shall be installed and programmed by well qualified and experienced craftsmen and engineers/technicians.
- C. Locations, orientations, and quantities as indicated on drawings.
- D. Units shall be properly interfaced with the input and output devices.
- E. Electrical and control wiring, cabling, conduits, connections shall be according to Division 26 and this Section.
- F. Include all required-related items for a complete installation.
- G. Contractor shall be responsible for compatibility of manufacturer's shop coating and final finish.
- H. Support and anchor all units as per the manufacturer's recommendations and as indicated on drawings.

END OF SECTION 25 3100

**SECTION 25 9100
CENTRAL CONTROL**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Central control equipment and programming including PLCs.

1.02 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. The submittal shall consist of legible printed text, high-quality drawings, and manufacturer's catalog data bound in notebooks with index tabs that identify major sections of the document.
- C. The submittal shall address all hardware and software to be supplied.
- D. In addition to the above requirements, the submittal shall also contain:
 - 1. Identification of the respective responsibilities of each party to the project, including what is provided by the system manufacturer, what is to be subcontracted, etc.
 - 2. Description of the major user-related features and operating characteristics of the proposed system.
 - 3. Description of all master site hardware and software, including examples of digital displays, control loops, reports, and how the operator will interface with the system to achieve each specified function.
 - 4. Description and operation of all master configuration features of the I/O and local control loop characteristics.
 - 5. Describe the training program. An outline shall be provided that covers the basic software and hardware training, operator training, system maintenance training, and programming training. Identify the course content and the time spent on each subject area.
 - 6. Describe the startup implementation plan, participants' responsibilities and a schedule of events.
 - 7. All significant equipment to be supplied shall be listed, followed by descriptive data sheets. The equipment list shall include each component name, manufacturer, model number, quantity supplied, any special setup, and operation and maintenance characteristics.
 - 8. Drawings of equipment to be supplied shall include as a minimum, overall dimensions and details for each unit, including installation arrangements, door mounted operator devices, and instruments. Wiring diagrams of all system components, including field device connections, shall be included and specific installation wiring responsibilities identified.
 - 9. Detailed written sequences of operation describing pre-startup, normal operation, shutdown, and emergency shutdown procedures.
 - 10. Detailed factory and field test procedures at least two weeks before scheduled testing.
 - 11. Color printout of all MMI screens to be provided. Integrator shall include two (2) trips and two (2) meetings on-site at the Owner's location during the development of screens for review of work product to date and direction for further work.
 - 12. Recommended maintenance, special tools, and test equipment.
 - 13. Hardware configuration block diagrams.
 - 14. Network diagrams.
- E. Submit operations and maintenance manuals.

1.03 SERVICE REPRESENTATIVE

- A. Provide qualified service representative to perform functions described in Section 01 4000 and the following.
- B. Provide for equipment installation check, calibrations, control adjustments, startups, and other services in the field by qualified service representative to produce complete working installation in compliance with drawings and specifications, satisfactory to Owner and Engineer.

- C. This field service is to cover both the separate mounted instrumentation involved in the system and the various control panels and components.
- D. Provide full field startup service for complete system at project site. Coordinate with other trades and suppliers to ensure proper start-up of all equipment.
- E. In addition to the field services, arrange for Owner training to be performed by the Manufacturer in the use and maintenance of all instrumentation and control system equipment supplied.
- F. Address coordination - coordinate with Owner's IT staff for IP address structure. Coordinate and supply IP address to equipment manufacturers as required by project. Document and record addresses used for project.
- G. Additional trips and/or days required by the Contractor before or after final startup and training shall not be charged to the Owner.

1.04 WARRANTY

- A. Full warranty against defects in materials and workmanship for two years after substantial completion, including all parts, labor, and expenses.

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS

- A. Alarm/Event Logging Colors. The following is the color scheme for alarms and events that are displayed on the MMI:
 - 1. Owner's existing color scheme shall be followed.
- B. Equipment Status and Data Information for MMI Displays. The following is the color scheme for dynamic changing status:
 - 1. Owner's existing color scheme shall be followed.
 - 2. Double Border Box: Indication of an analog process operator entered setpoint.
- C. Alarm/Event Logging. All alarms and events shall be logged to a tabular display on the computer software MMI's display screen with date, time, tagname, description, status, value, and priority of alarms/events. The tabular display screen shall allow the Operator to acknowledge all alarms. Events shall include start/stop of equipment, open/close or position change of valves, operator initiated changes, setpoint changes, etc. The MMI will also log this data to a historical data file. Up to an Operator adjustable setpoint, a number of current events and alarms shall be displayed on the tabular screen, with the older events and alarms beyond that setpoint number being stored in the historical database log.
- D. Change-of-State Alarms. All PLC discrete output commands shall be compared to their respective process feedback status signal to verify proper execution. If the feedback status does not match the most recent output command (after an Operator adjustable time delay), the PLC will initiate an alarm condition. The alarm condition requires an Operator acknowledgement only after the Operator is logged onto the system.
- E. General Monitoring, Displaying, and Logging of Discrete Input Signals. Discrete input signals which represent equipment status will be displayed on the computer software MMI display screens.
- F. General Monitoring, Displaying, and Recording of Analog Input Signals. Process variable signals shall be displayed on the computer software MMI's display screens. They shall be scaled in engineering units. All alarm limits are assigned to the associated process variable. Values shall be historically logged and trended as required.
- G. Process Status. All process alarms, equipment status, and process variable values shall be available at any of the computer software MMI's display screens. Failures of any PLC on the network shall also be alarmed.
- H. Equipment Run Times. The running time for all motorized equipment located in the plant and at all remote sites shall be totalized and displayed.

- I. Flow Totalizations. All flow rate values shall be integrated and totaled for display on the computer software MMI's display screens.
- J. Automatic Rollover. Provide automatic rollover back to zero for all run times, meter totalizations, etc. Provide reports with automatic calculation to account for the automatic rollover to zero.
- K. Trends. All process variable signals can be selected to be displayed on the computer software MMI's display screens. Provide a historical trend embedded window for each process element that is designated to be trended on a given screen. Provide a trend button to bring up the embedded trend window over a portion of the given screen, with the option to expand the trend window to the full screen view.
- L. All computer MMI display screens that allow an Operator to enter setpoints and to change software switches shall be password protected. An Operator must successfully log in with his password before any changeable setpoints are allowed.
- M. For all PID control loops, provide pop-up window with PID control station graphic. This pop-up window shall display auto/manual status, process variable, set point and control output scaled in engineering units. Operator shall be allowed to change auto/manual toggle, set point manual adjust, and control output manual adjust.
- N. Provide an Operator adjustable time delay setpoint with all setpoints throughout the control system.
- O. Provide de-bounce timers or other programming logic throughout the system to prevent all alarms, setpoints, or controls repeat; and nuisance or otherwise unneeded alarms, starts, stops, etc.
- P. Provide scan rate time delays or other programming logic throughout the system to prevent all alarms, setpoints, or controls repeat; and nuisance or otherwise unneeded alarms, starts, stops, etc.
- Q. Provide testing and logic to positively ensure that no lockout conditions can develop in any way or in any form of operation, be it standard, non-standard, or emergency.
- R. Monitor communications status of all remote facilities and plant panels.
- S. Monitor each PLC's status at all remote facilities and plant panels.
- T. Where alarms are called for provide High and High-High, Low and Low-Low, and others if specifically required.
- U. All VFD-driven pumps when operated in Hand shall be controlled by % Speed directly.
- V. Provide software Hand/Off/Auto switches, Duty/Standby switches, Local/Off/Remote switches, On-line/Off-line switches, Open/Close switches, Open/Stop/Close switches, Open/Stop/Close/Auto switches, Manual/Auto switches, On/Off pushbuttons, etc. for each equipment item.
 - 1. Provide software Hand/Off/Auto switches for all motorized equipment, except for motorized valves. For motorized modulating valves provide open/stop/close/auto switches; for open/close motorized valves provide open/close/auto switches. In many cases, hand switch "Hand/Off/Auto" has also been provided. These situations are considered to be "cascade" control. The hand switch is considered to be the "master". Control from the soft switch can only be accomplished if the hand switch is in the auto position. Do not allow operation of the soft switch if the hand switch is not in the auto position.
 - 2. Provide software open/close/auto switches for all open/close controlled valves, both solenoid and motor operated. Where a valve has a hand open/close/auto selector switch, the hand switch is the "master". Control from the soft switch can only be accomplished if the hand switch is in the auto position. Do not allow operation of the soft switch if the hand switch is not in the auto position.
 - 3. For all motorized modulating valves, the PID control station shall be considered manual control. Control from the soft station can only be accomplished if the hand switch is in the auto position. Do not allow operation of the soft station if the hand switch is not in the auto position.

4. In the software On-line/Off-line selector, provide a software pop-up "tag-out" box with descriptor lines for Operator entry of wording describing the reason for the device being out of service, for each item of equipment, instrumentation, etc. Change the equipment device color to yellow on the applicable screens to visually indicate that it is off-line and tagged out, and cannot be operated through the control system as long as tagged out. The On-line/Off-Line switch and Tag-Out shall be used to isolate control and/or defeat erroneous status indication through the PLC and MMI system for the particular device, but shall not affect the operation of the particular treatment process or plant as a whole.
- W. Change piping/valves/equipment/building color to indicate flowing or not, working or not, operational or not, running or not, opened or closed, etc.
- X. Screens shall be fully dynamic.
- Y. In the list of MMI Screens are described as either "Pictorial" or "Tabular".
 1. "Pictorial" shall balance clarity of process functionality with 3D spatial appearance. For pictorial screens representing large numbers of equipment and multiple processes (overviews) schematic process functionality shall take precedence. Where pictorials represent a single equipment or process area, 3D representation of actual spatial arrangement shall prevail. All pictorial screens will also include data values, process variables, etc. displayed alongside the graphical objects, and various buttons, lines of text, etc. The level of graphics shall be of the highest level of capability of the software.
 2. "Tabular" shall be defined as a screen showing tables or boxes of data values, process variables, data entry boxes, etc. with verbal descriptors and lines of text. Some pictorial representations of objects (eg. an HOA switch) shall be included, and some hybrid schematic/tabular screens will be required. The level of graphics shall be of the highest level of capability of the software.
- Z. The intent of MMI screens development is to provide a complete "Pictorial" screen for each process system or element as defined, with the subsequent "Tabular" screens being "pop-up" screens accessed by a button or double-clicking on a particular equipment item or component of the pictorial screen. Each pop-up tabular screen shall appear as an embedded window over a portion of the given pictorial screen, with the option to expand the window to the full screen view. These tabular screens shall display the particular object's data values of status, alarms, setpoints, etc. and provide for Operator entry of values.

2.02 FUNCTIONAL DESCRIPTION

- A. General Function Descriptions for Commonly Applied Routines
 1. Open/Close Valve Control
 - a. Control Elements
 - 1) HOR (Hand-Off-Remote) hand switch
 - 2) OCA (Open-Close-Auto) soft switch
 - b. Feedback Elements
 - 1) HOR hand switch in the Remote position
 - 2) Opened limit switch
 - 3) Closed limit switch
 - c. Alarms
 - 1) Valve failed to open
 - 2) Valve failed to close
 - d. Process Set Points
 - 1) Valve failed to open/close time delay
 - e. Process Control/Monitor Routines
 - 1) When valve is required open or close (in automatic mode, only) start the time delay to check that valve reaches its required position as verified by its limit switch; annunciate an alarm if the valve does not reach its required position and the time delay has expired.

- 2) See individual process descriptions for appropriate process failure recovery routines when an associated valve fails.
2. Equipment Start/Stop and Elapsed Time Monitoring
 - a. Control Elements
 - 1) Lifetime hours reset soft switch (supervisor security).
 - 2) Lifetime starts reset soft switch (supervisor security).
 - 3) Maintenance hours enable/disable soft switch (maint. supervisor security)
 - 4) Maintenance hours Task 1 reset soft switch (maint. supervisor security)
 - 5) Maintenance hours Task 2 reset soft switch (maint. supervisor security)
 - 6) Maintenance hours Task 3 reset soft switch (maint. supervisor security)
 - 7) Weekly Elapsed Time and Start/Stop enable/disable (operations supervisor security)
 - 8) Daily Elapsed Time and Start/Stop enable/disable (operations supervisor security)
 - 9) Run lifetime hours and start/stop report soft switch.
 - 10) Run maintenance hours report soft switch.
 - b. Feedback Elements
 - 1) Equipment "running" inputs.
 - c. Alarms
 - 1) Maintenance hours Task 1 required (maintenance alarm group)
 - 2) Maintenance hours Task 2 required (maintenance alarm group)
 - 3) Maintenance hours Task 3 required (maintenance alarm group)
 - 4) Daily operating hours high/low
 - 5) Daily start/stops high/low
 - d. Process Set Points
 - 1) Maintenance hours Task 1 target value
 - 2) Maintenance hours Task 2 target value
 - 3) Maintenance hours Task 3 target value
 - 4) Daily operating hours high
 - 5) Daily operating hours low
 - 6) Daily start/stops high
 - 7) Daily start/stops low
 - 8) Weekly Master Reset (Day and time of day)
 - 9) Daily Master Reset (time of day)
 - 10) Auto Alternation ratio
 - 11) Auto Alternation mode standard/reserve (each piece of duplicate equipment) soft switch.
 - e. Process Control/Monitor Routines
 - 1) Equipment Lifetime Operating Hours register -- Provide one register in whole hours. Provide automatic rollover when the maximum number is reached.
 - 2) Equipment Lifetime Starts register -- Provide one register for number of starts. Provide automatic rollover when maximum number is reached.
 - 3) Maintenance Hours Tasks registers -- Provide registers in whole hours. Maintenance personnel may enter a desired time where "maintenance alarms" may be generated for scheduled maintenance tasks dependent on the number of equipment operating hours. Provide a "text box" (for each task) so that each task can be readily identified.
 - 4) Weekly Operating Hours Registers -- Provide two registers each for weekly operating hours. One register shall be reserved for "last week"; the other for "current week" operating hours. According to a "Weekly Master Reset" set point (day and time), all equipment "current" registers data shall be stored in the "last week" register and the current register shall be reset to zero.

- 5) Weekly Start Registers -- Provide two registers each for weekly starts. One register shall be reserved for "last week"; the other for "current week" operating hours. According to the "Weekly Master Reset" set point (day and time), all equipment "current" registers data shall be stored in the "last week" register and the current register shall be reset to zero.
 - 6) Daily Operating Hours Registers -- Provide two registers each for daily operating hours. One register shall be reserved for "yesterday"; the other for "today" operating hours. According to a "Daily Master Reset" set point (time of day), all equipment "today" registers data shall be stored in the "yesterday" register and the today register shall be reset to zero.
 - 7) Provide a reporting routine for print out of: lifetime hours and starts (operator initiated), maintenance hours (operator initiated), weekly hours and starts (auto generated), and daily hours and starts (auto generated). For each equipment item, operators/maintenance personnel shall have the option of enabling/disabling the maintenance, weekly, and daily routines; the lifetime hours are mandatory and cannot be disabled.
 - 8) Automatic Alternation (where duplicate process equipment exists) shall be based on the "current weekly" operating hours registers and their respective HOA hand switches (or soft switches if no hand switch exists). An additional status soft switch (for each duplicate piece of equipment) may be toggled from "standard" to "reserve" status (for only one). This "reserve" equipment is only automatically started according to a ratio of all other duplicate equipment in "standard" mode. Example: Assume the ratio is two (2) and one piece of duplicate equipment is selected as "reserve; the reserve equipment is only operated at one-half the hours of the duplicate equipment in "standard" mode.
3. Process Flow Monitoring
- a. Control Elements
 - 1) Associated equipment on/off status flow totalization interlock on/off soft switch
 - 2) Totalize monthly enable/disable soft switch
 - 3) Totalize weekly enable/disable soft switch
 - 4) Totalize daily enable/disable soft switch
 - 5) Cyclic totalization enable/disable soft switch
 - 6) Scheduled Maintenance Totalization enable/disable soft switch
 - 7) Scheduled Maintenance Flow Total Reset soft switch (maintenance supervisor security)
 - b. Feedback Elements
 - 1) Associated flow transmitter
 - 2) Associated equipment on/off indication (providing the flow)
 - c. Alarms
 - 1) Flow (HH, H, L, LL)
 - 2) Maintenance flow total exceeded (alarm group)
 - d. Process Set Points
 - 1) Minimum flow to enable totalization (in percent of span)
 - 2) Maintenance flow totalization target value
 - e. Monitor/Control Routines
 - 1) Basic flow monitoring
 - (a) Do not totalize flows unless the associated equipment "running" status is indicated. Where multiple pumps/blowers, etc. provide flow to a single flow meter, at least one pump should indicate a "running" status. Also, do not totalize flow unless the minimum flow level has been reached. Disable all flow alarms if no equipment is "required" to run.
 - 2) Flow Totalization

- (a) Provide a minimum of three totalization periods: monthly, weekly, and daily. For each time period, provide two storage registers: one for "last" period, one for "current" period. For all three time periods, provide separate resets based on day-of-month, day-of-week, and time-of-day. Base Engineering Units (of totalization) shall be as required to produce three (3) significant figures.
 - (b) Provide one additional set of registers for "last" and "current" cycle for cyclic based operations such as pump-down of a wet well by float switches. Include time and date stamp for last cycle plus duration. At the time of another equipment start, transfer (from current to last), generate an event log item for the previous "last" record.
 - (c) Provide registers for scheduled maintenance totalization. Once the total has been reached, activate a special maintenance alarm (no audible, just display). This total must be manually reset by an approved maintenance person.
- 4. Remote Alarm Notification
 - a. MMI SCADA Based Remote Alarms
 - 1) Provide an alarm "word" (such as an integer address) for each major piece of equipment and/or process area described in the above sections. For each alarm "word" provide a "mask word" and a resultant "masked" alarm word. A mask word containing all "1's" allows all alarms to generate a remote alarm. Where the mask word contains "zeros" those particular alarms would be prevented from generating a remote alarm. In addition, provide a series of "combination words". These combination words are assigned a value. Whenever, the alarm word value equals the combination word value, a remote alarm is generated i.e. alarm1 "and" alarm2 "and" alarm3 = remote alarm "x".
 - 2) Provide a graphical "matrix" table for each remote alarm word. The horizontal rows are the individual alarms, the columns shall represent the individual bits of the alarm word, the alarm mask, and then a series of combination alarm words. Default values for all alarm mask words and combination words shall be zero.
 - 3) Software program shall be WIN911 and shall be used to generate alarms to the proper people according shifts and weekends. Modem as indicated on drawings.

2.03 FUNCTIONAL DESCRIPTION AND IMPLEMENTATION GUIDELINES

- A. Refer to specification section 25 9110 for PLC I/O point modifications that involve replacement of existing equipment. Provide PLC, OIT, and SCADA programming modifications as indicated.
- B. Refer to specification section 25 9110 for PLC I/O point additions to existing or upgraded PLC's.
- C. EQ Tank for SBR System.
 - 1. Project Background:
 - a. Currently flow from Swift is delivered by a gravity line with flow being diverted to the domestic plant via 3 valves with flow meters in the Swift Shack (Monfort Distribution Structure) and the remainder of the flow pumped to the SBRs by the SBR Raw Water Pumps.
 - b. This flow will now be pumped by Swift to the new EQ Tank. Flow will still be diverted off of this line to the domestic plant through new pinch valves and flow meters in the Swift Shack (Monfort Distribution Structure). Pinch valve and flow meter control shall be re-connected to existing controls.
 - c. While the EQ Tank is in use, flow to the SBR will be pumped from the new EQ Tank by the Raw Water Pumps. Raw Water Pumps currently have a hardwired discharge valve. Discharge valves are being replaced with modulating valves and will still function for opening for pump operation with position set based on EQ Tank Level using a look-up set point table for position.
 - d. Existing SBR Raw Water Pumps control via hardwired VFD control to PLC shall remain. Modify Service Selection wiring as required so that VFD and Discharge valve control are both via PLC control for automatic operation
 - 2. Associated Equipment

- a. Three (3) SBR Raw Water Pumps - Existing
- b. Three (3) SBR Raw Water Pump discharge valves
- c. SBR EQ Tank
- d. Swift Lagoon RTU
3. Control Elements (new)
 - a. Raw Water Pump No. 2 - SBR 1/Off/SBR 2 Mode soft switch
 - b. SBR EQ Tank - On-Line/Pumped Bypass/Gravity Bypass Mode soft switch
 - c. Three (3) raw water pump discharge valve hand/off/remote hand switch
 - d. Three (3) raw water pump discharge valve hand/closed/auto soft switch
4. Feedback elements
 - a. See specification 25 9110 for PLC I/O Listing
5. Process Set Points (new)
 - a. Individual raw water pump discharge valve manual position (initial set point 75%)
 - b. EQ Tank high-high level (initial set point 24.1')
 - c. EQ Tank high level (initial set point 22.1')
 - d. EQ Tank low level (initial set point 5.5')
 - e. EQ Tank low-low level (initial set point 4.5')
 - f. Swift high flow alarm (initial set point 2500 GPM)
 - g. Raw water pump discharge valve position table (EQ Tank On-Line Mode):

EQ Tank Level	Discharge Valve Position Set Point (initial set point value)
X-X'	XX%
X-X'	XX%
X-X'	XX%
X-X'	XX%
X-X'	XX%
 - h. Raw water pump discharge valve position (Pumped Bypass Mode): (initial set point XX%)
 - i. Raw water pump discharge valve position (Gravity Bypass Mode): (initial set point XX%)
6. Interlocks and Safeties (new)
 - a. Raw water pump operation shall be interlocked with EQ Tank low-low level when EQ tank is online.
 - b. Auto operation is not allowed unless all associated equipment is selected to the auto.
7. Alarms (new)
 - a. Individual raw water pump discharge valve failure
 - b. EQ Tank high float
 - c. EQ Tank high-high
 - d. EQ Tank high
 - e. EQ Tank low
 - f. EQ Tank low-low
 - g. Swift high flow
 - h. Analog values out of range
8. Control Routines
 - a. EQ Tank Online Mode
 - 1) Raw water pumps shall function as they currently do with the modification for SBR service selection as described above. Pump 1 or 3 shall be inhibited from operation while Pump 2 is selected to serve in its place.
 - 2) When a raw water pump is called, the associated discharge valve shall open and modulate to position based on EQ Tank level. Should the discharge valve fail, the associated pump shall be taken out of service and alarm sent to SCADA. Manual reset required to return to operation.

- 3) Raw water pumps shall be inhibited from operation when the level in the EQ tank falls to the low-low level set point and restored when the water rises to the low level set point.
- 4) Swift Pump Station permissive shall be supplied via the Lagoon RTU and removed anytime the level in the EQ tank is above the high-high level set point or high float is active.
- 5) EQ Tank mode shall be supplied via the Lagoon RTU.
- 6) Manual Control - discharge shall be capable of local operation at the valve in the event automatic operation fails via the valve local controls.
- b. EQ Tank Pumped Bypass Mode
 - 1) Raw water pumps shall function as they currently do with the modification for SBR service selection as described above. Pump 1 or 3 shall be inhibited from operation while Pump 2 is selected to serve in its place.
 - 2) When a raw water pump is called, the associated discharge valve shall open. Should the discharge valve fail, the associated pump shall be taken out of service and alarm sent to SCADA. Manual reset required to return to operation.
 - 3) Swift Pump Station permissive shall be supplied in advance of a raw water pump starting via the Lagoon RTU and removed when all raw water pumps stop.
 - 4) EQ Tank mode shall be supplied via the Lagoon RTU.
 - 5) Manual Control - discharge shall be capable of local operation at the valve in the event automatic operation fails via the valve local controls.
- c. EQ Tank Gravity Bypass Mode
 - 1) Raw water pumps shall function as they currently do with the modification for SBR service selection as described above. Pump 1 or 3 shall be inhibited from operation while Pump 2 is selected to serve in its place.
 - 2) When a raw water pump is called, the associated discharge valve shall open. Should the discharge valve fail, the associated pump shall be taken out of service and alarm sent to SCADA. Manual reset required to return to operation.
 - 3) EQ Tank mode shall be supplied via the Lagoon RTU.
 - 4) Manual Control - discharge shall be capable of local operation at the valve in the event automatic operation fails via the valve local controls.

D. SCADA

1. General
 - a. This system shall be classified in two sections: One is referred to (in the preceding functional descriptions) as the "MMI"; the other is the PC based SCADA system, which in this project, is used for basic data monitoring, archiving, remote alarm dialing and report generation.
 - b. All SCADA programming is provided by Systems Integrator.
 - c. All PLC and MMI (PanelView) programming is provided by Systems Integrator.
 - d. System Integrator shall coordinate with Owner for equipment removals for data exchange.
2. Proposed MMI Screens
 - a. Remove all screens and programming associate with equipment that is being removed.
 - b. Create pictorial screens (at minimum) including:
 - 1) Update Overview of treatment plant site to SBR EQ Tank.
 - 2) Update SBR area screens for raw water pump discharge valve addition and operation modes.
 - 3) Provide One (1) additional screens of a complexity equal to the average of the above. The Systems Integrator shall budget adequate time and expenses to develop this one additional screen as defined by the Owner.
 - c. Trend Screens
 - 1) Create associated trend screens for all pictorial screens described above.

- 2) Provide One (1) additional screen of a complexity equal to the average of the above. The Systems Integrator shall budget adequate time and expenses to develop this one additional screen as defined by the Owner.
- d. Tabular Screens
 - 1) Create tabular screens for data entry, live data monitoring, and related soft switch control as related to all major equipment items. Tabular screens may be normally be of "pop-up" type by clicking on an associated piece of equipment.
- e. Reports
 - 1) All reports shall be provided with automatically derived data calculations.
 - 2) Alarm Summary Report
 - 3) Equipment Elapsed Time and Starts Report
 - 4) Process Flows Report
 - 5) Provide One (1) additional report of a complexity equal to the average of the above reports. The Systems Integrator shall budget adequate time and expenses to develop this one additional report as defined by the Owner.

2.04 PROGRAMMABLE LOGIC CONTROLLER

A. Medium PLC.

1. Programmable logic controller:
 - a. The PLC shall be capable of performing relay logic, timing, counting, sequencing, proportional-integral-derivative (PID) control and other functions as required by the drawings and specifications. Quantity and location as shown in the instrumentation and controls schedule.
 - b. The unit shall be complete with rack, power supply, modules, cables and connectors.
 - c. The PLC shall be equipped with a 2M word minimum memory for user programming and data storage.
 - d. The PLC shall automatically start-up after a power failure, and retain the program and setpoints so that the system starts automatically when power is restored.
 - e. The PLC rack shall have sufficient empty slots to accommodate additional modules for 30% future expansion.
2. Input/output requirements:
 - a. Digital inputs (120 Vac nominal)
 - 1) On State: 79 - 132 Vac; Off State: 0 - 20 Vac
 - 2) LED indicator.
 - b. Digital outputs (120 Vac nominal):
 - 1) Max. Voltage = 240 Vac; @ 120 Vac, 2.5A continuous.
 - c. Analog inputs:
 - 1) Field selectable 4-20 mADC or 1-5 VDC input on each channel, 8 channel.
 - 2) Input isolation rated 500 volts minimum.
 - 3) 16-bit analog-to-digital conversion having overall accuracy of less than 0.75% of full scale.
 - 4) 250 ohm input impedance (on 1-5 VDC input).
 - d. Analog outputs:
 - 1) 0 to 20 mADC range. Nominal span of 4-20 mADC, 4 channel.
 - 2) 15-bit digital-to-analog conversion having overall accuracy of less than +/- 0.75% of full scale.
 - 3) Capable of driving up to 750 ohm load.
 - e. Provide and minimum of 20% spare I/O wired to terminals for each type used.
3. Functional specifications:
 - a. Program memory: 2M words
 - b. 1 Gb memory card.
 - c. Standard RAM: Lithium battery, 2 years.
 - d. LED indicators: RUN, FAULT, FORCED I/O, BATTERY LOW.

- e. Communication: (2) Ethernet , USB.
- 4. Environmental conditions:
 - a. Ambient temperature: Operating: 0°C to 60°C (32°F to 140°F). Storage: -40°C to 85°C (-40°F to 185°F).
 - b. Humidity: 5 to 95% (non-condensing).
 - c. Noise immunity: Comply with NEMA ICS-2-230.
 - d. Shock (operating): 30 Gs.
 - e. Vibration: Displacement: 0.015", peak-to-peak at 5-57 Hz. Acceleration: 2.5 Gs at 57-2000 Hz.
- 5. Programming techniques:
 - a. The programming format shall incorporate a traditional relay ladder diagram.
 - b. The capability shall exist to change a contact from normally open to normally closed, add instruction, change addresses, etc. without deleting or reprogramming the entire rung.
 - c. It shall be possible to insert relay ladder diagram rungs anywhere in the program, even between existing rungs, insofar as there is sufficient memory to accommodate these additions.
 - d. A single program command or instruction shall suffice to delete an individual ladder diagram rung from memory.
 - e. It shall not be necessary to issue a two-part command in order to delete all relay ladder rungs from memory. This will provide a safeguard wherein the operator must verify their intentions before erasing the entire program.
 - f. Isolate systems to limit domino failure (sub-routine).
- 6. Approved manufacturers:
 - a. Allen-Bradley. Model: Compact Logix 5069-L3XXER with options specified. Sized as required base on I/O modules and Ethernet node connections required.
 - b. Engineer approved equivalent.

2.05 SCADA SOFTWARE

- A. General:
 - 1. Programming modification to Owners existing Rockwell Factory Talk SCADA application is provided by Systems Integrator. System Integrator shall coordinate with Owner as required for removed equipment and information exchange as well as network addressing.

2.06 SUPPLEMENTAL PROGRAMMING HOURS

- A. General:
 - 1. Integrator to include 12 hours of supplemental programming hours in their bid.
 - 2. Supplemental programming hours to be used for PLC and OIT programming changes after start-up during the warranty period that are in addition to or changes from programming scope detailed above.
 - 3. Integrator to provide an estimate of hours for each requested programming change.
 - 4. Use of supplemental programming hours requires approval from the Owner/Engineer prior to performing work.
 - 5. Items **Not Included** in supplemental programming:
 - a. Travel Time
 - b. Travel Expense
 - c. Warranty Work and Corrections

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install in accordance with manufacturer's recommendations and as indicated on Drawing.
- B. Units shall be installed and programmed by well qualified and experienced craftsmen and engineers/technicians. SCADA software system shall be designed and programmed by engineers/technicians.

- C. Units shall be properly interfaced with the input and output devices.
- D. Include all required-related items for a complete installation.

END OF SECTION 25 9100

**SECTION 25 9110
INSTRUMENTATION AND CONTROL SCHEDULES**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Instrumentation Schedule.
- B. Control Panel Schedule.

PART 2 PRODUCTS

2.01 INSTRUMENTATION SCHEDULE

- A. Magnetic Flowtube/Transmitter (wall mounted unless noted otherwise; flow indication in GPM unless noted otherwise):
 - 1. FIT/FE-2032 - 6" diameter; Range 0-1,500 GPM; Swift Flow 1. Class I, Div. 2 rated flow tube and transmitter.
 - 2. FIT/FE-2042 - 6" diameter; Range 0-1,500 GPM; Swift Flow 2. Class I, Div. 2 rated flow tube and transmitter.
 - 3. FIT/FE-2052 - 6" diameter; Range 0-1,500 GPM; Swift Flow 3. Class I, Div. 2 rated flow tube and transmitter.
- B. Non-Mercury Float:
 - 1. LSH-2068 - EQ Tank High Level - Supported from top of tank wall. Float shall activate at 886.0' elev.
- C. Pressure/Level Transducer/Transmitter:
 - 1. PIT-2067 - Range 0-25' ; EQ Tank Level. Class I, Div. 2 rated.

2.02 CONTROL PANEL SCHEDULE

- A. Abbreviations:
 - 1. CP: Control Panel.
 - 2. (W): White.
 - 3. (G): Green.
 - 4. (R): Red.
 - 5. (A): Amber.
- B. Existing SPCP-I Modifications
 - 1. Description/Location: Secondary Control Panel; Secondary Control Building
 - 2. Panel Enclosure: Existing.
 - 3. Element Location: Front.
 - a. None.
 - 4. Element Location: Internal.
 - a. Existing I/O modifications
 - 1) Swift Valve No. 1 position feedback (AI) shall be re-used to connect to new valve.
 - 2) Swift Valve No. 1 position command (AO) shall be re-used to connect to new valve.
 - 3) Swift Valve No. 2 position feedback (AI) shall be re-used to connect to new valve.
 - 4) Swift Valve No. 2 position command (AO) shall be re-used to connect to new valve.
 - 5) Swift Valve No. 3 position feedback (AI) shall be re-used to connect to new valve.
 - 6) Swift Valve No. 3 position command (AO) shall be re-used to connect to new valve.
 - 7) Swift Flow 1 (AI) shall be re-used to connect to new flow meter.
 - 8) Swift Flow 2 (AI) shall be re-used to connect to new flow meter.
 - 9) Swift Flow 3 (AI) shall be re-used to connect to new flow meter.
 - b. Provide PLC programming as required for loop tuning of new equipment. Update Operator Interface and SCADA graphics as required.
 - c. Breakers, Fuses, Relays, Timers, Terminals, and Misc. as required.
- C. Existing SPCP-J Modifications

1. Description/Location: SBR Control Panel; SBR Control Building
2. Panel Enclosure: Existing.
3. Element Location: Front.
 - a. None.
4. Element Location: Internal.
 - a. Existing I/O modifications
 - 1) RWP No. 1 Discharge Valve position feedback (AI) shall be connected using existing spare.
 - 2) RWP No. 1 Discharge Valve In Remote (DI) shall be connected using existing spare.
 - 3) RWP No. 1 Discharge Valve Closed (DI) shall be connected using existing spare.
 - 4) RWP No. 2 Discharge Valve position feedback (AI) shall be connected using existing spare.
 - 5) RWP No. 2 Discharge Valve In Remote (DI) shall be connected using existing spare.
 - 6) RWP No. 2 Discharge Valve Closed (DI) shall be connected using existing spare.
 - 7) RWP No. 3 Discharge Valve position feedback (AI) shall be connected using existing spare.
 - 8) RWP No. 3 Discharge Valve In Remote (DI) shall be connected using existing spare.
 - 9) RWP No.3 Discharge Valve Closed (DI) shall be connected using existing spare.
 - b. I/O additions (Provide one Analog Output Card)
 - 1) RWP No. 1 Discharge Valve position command (AO) shall be connected using new analog output card.
 - 2) RWP No. 2 Discharge Valve position command (AO) shall be connected using new analog output card.
 - 3) RWP No. 3 Discharge Valve position command (AO) shall be connected using new analog output card.
 - c. Provide PLC programming as required for loop tuning of new equipment. Update Operator Interface and SCADA graphics as required.
 - d. Breakers, Fuses, Relays, Timers, Terminals, and Misc. as required.
- D. Existing Swift Lagoon RTU Modifications
 1. Description/Location: Swift Lagoon Monitoring Control Panel; Swift WWTP
 2. Panel Enclosure: Existing.
 3. Element Location: Front.
 - a. None.
 4. Element Location: Internal.
 - a. Remove existing Allen Bradley MicroLogix 1100 PLC and salvage to Owner.
 - b. Provide and Install Allen Bradley CompactLogix 5069-L306ER PLC with I/O (Minimum I/O: 4 AI, 4 AO, 10 DI, 10 DO)
 - c. Existing I/O modifications
 - 1) Lagoon Level (AI) shall be re-connected to new PLC.
 - 2) Power Fail (DI) shall be re-connected to new PLC.
 - 3) Telemetry Fail (DO) shall be re-connected to new PLC.
 - d. I/O additions
 - 1) Swift Pump Station Flow (AI) shall be connected to new PLC.
 - 2) EQ Tank Level (AO) shall be connected to new PLC.
 - 3) Pumping Permissive (DO) shall be connected to new PLC.
 - 4) EQ Online/Bypass Mode (DO) shall be connected to new PLC.
 - 5) Swift Pump Station Operation (DI) shall be connected to new PLC.
 - e. Provide PLC programming as required, see specification section 25 9100 for sequence of operation. Update Operator Interface and SCADA graphics as required.

- f. Breakers, Fuses, Relays, Timers, Terminals, and Misc. as required.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Include all required-related items for a complete installation.

END OF SECTION 25 9110

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**SECTION 25 9120
MEASUREMENT AND CONTROL COMMISSIONING**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Start up, shake down, and training for instrumentation and control system.

1.02 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Submittal shall contain:
 - 1. Identification of the respective responsibilities of each party to the project, including what is provided by the system manufacturer, what is to be subcontracted.
 - 2. Description of the major user related features and operating characteristics of the proposed system.
 - 3. Description of all master site hardware and software, including examples of digital displays, control loops, reports, and how the operator will interface with the system to achieve each specified function.
 - 4. Description and operation of all master configuration features of the I/O and local control loop characteristics.
 - 5. Describe the training program. An outline shall be provided that covers the basic software and hardware training, operator training, system maintenance training, and programming training. Identify the course content and the time spent on each subject area.
 - 6. Describe the startup implementation plan, participants' responsibilities and a schedule of events.
 - 7. All significant equipment to be supplied shall be listed, followed by descriptive data sheets. The equipment list shall include each component name, manufacturer, model number, a description of the operation, quantity supplied, and any special setup and operation and maintenance characteristics.
 - 8. Drawings of equipment to be supplied shall include as a minimum, overall dimensions and details for each unit, including installation arrangements, door mounted operator devices, and instruments. Wiring diagrams of all system components, including field device connections, shall be included and specific installation wiring responsibilities identified.
- C. Operations and maintenance manuals.

1.03 START-UP SERVICE REPRESENTATIVE

- A. Provide qualified service representative to perform functions described in Section 01 4000 and the following.
- B. Provide for equipment installation check, calibrations, control adjustments, startups, and other services in the field by qualified service representative to produce complete working installation in compliance with drawings and specifications, satisfactory to Owner and Engineer.
- C. This field service is to cover both the separate mounted instrumentation involved in the system and the various control panels and components.
- D. Coordinate with General Contractor, Sub-Contractors and Equipment Suppliers to provide start-up services in concert with other equipment in the project.
- E. In addition to the field services, arrange for Owner training to be performed by the Manufacturer in the use and maintenance of all instrumentation and control system equipment supplied. Refer to scheduled training requirements.
- F. Provide complete start-up services until all systems are fully functional.
- G. Provide training program in sufficient depth that Owner can maintain and extend hardware/software functionality. Minimal courses shall include:
 - 1. Detailed system operating procedures:
 - a. Location: On-site.

- b. Timing: During commissioning.
 - c. Length: 2 hours per session (1 session).
- H. On-site training:
 - 1. Classroom setting
 - 2. Oriented toward installed equipment and software.
 - 3. Taught by person with significant training experience.
 - 4. Instructor and course materials shall be approved in advance of training.
 - 5. Class size not to exceed 5 persons per PLC/SCADA systems sessions, 5 persons per SCADA report sessions.

1.04 ACCEPTANCE FOR OPERATION

- A. Owner will accept equipment and systems for operation when construction has been substantially completed by Contractor. "Acceptance for Operation" shall mean Owner will assume operational and routine maintenance duties. "Acceptance for Operation" does not relieve Contractor from responsibilities related to defective materials and workmanship; neither does it constitute final acceptance of materials and equipment.
- B. After Owner has accepted system for operation, Contractor shall continue to perform the following as requested and scheduled by Owner at no additional cost to Owner:
 - 1. Troubleshooting, adjustments, and repairs until system operation and performance is acceptable.
 - 2. Craft labor as required.
- C. After Owner has accepted system for operation, Contractor shall continue to supply technical services when needed until final acceptance. "Final Acceptance" shall mean Contractor compliance with specifications.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 START-UP

- A. No form of energy shall be turned on to any part of the instrumentation and control system prior to the receipt, by the Engineer, of written approval of the installation of equipment by the manufacturer.

3.02 TRAINING SCHEDULE

- A. Remote Device (eg: pressure transmitter, flow meter): Two hours on-site for each type of instrument.
- B. Control Panel: Two hours on-site for control panels.
- C. See paragraph 1.03 G through H of this Section for additional PLC/SCADA Training requirements.

END OF SECTION 25 9120

SECTION 26 0500
BASIC ELECTRICAL MATERIALS AND METHODS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Basic Electrical Requirements specifically applicable to Division 26.
- B. The general provisions of this Section apply to the other Division 26 sections.
- C. The work shall include the furnishing of systems, equipment and materials specified in this Division and as called for on the Drawings, to include: supervision, operation, methods and labor for the fabrication, installation, startup and tests for the complete electrical installation.
- D. Drawings for the Work are diagrammatic, intended to convey the scope of the Work and to indicate the general arrangement and locations of the Work. Because of the scale of the Drawings, certain basic items such as connectors, fittings, access panels, pullboxes, etc. are not necessarily shown. Where such items are required for proper installation of the Work, such items shall be included.
- E. Equipment specifications may not deal individually with minute items required such as components, parts, controls and devices which may be required to produce the equipment performance specified or as required to meet the equipment warranties. Where such items are required, they shall be included by the supplier of the equipment, whether or not specifically called for.
- F. Where noted on the Drawings or where called for in other sections of the Specifications the Contractor shall install equipment under this Contract and shall make required electrical connections. Contractor shall verify with the supplier of the equipment the requirements for the installation.

1.02 WORK BY OTHERS

- A. The Owner may award contracts which will run concurrent to the Work.
 - 1. See notes on plans for extent of Division 26 participation.

1.03 OWNER FURNISHED PRODUCTS

- A. Products furnished to the site and paid for by Owner shall be as noted on Drawings.

1.04 CONTINUITY OF SERVICE

- A. Coordinate Work to accommodate Owner's occupancy requirements during the construction period. Refer to Section 01 1000 - Summary for additional requirements.

1.05 ACTIVE SERVICES

- A. Existing active services: water, gas, sewer, electric, when encountered, shall be protected against damage. Do not prevent or disturb operation of active services which are to remain. If active services are encountered which require relocation, make request to authorities having jurisdiction for determination of procedures. Where existing services are to be abandoned, they shall be terminated in conformance with requirements of the Utility or Municipality having jurisdiction.

1.06 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Submittal data for electrical equipment shall consist of shop drawings and/or catalog cuts showing technical data necessary to evaluate the material or equipment, to include power requirements (wattage, voltage, amperage, power factor, etc.) dimensions, wiring diagrams, performance curves, ratings, (electrical, environmental, etc.), control sequences and other descriptive data necessary to describe fully the item proposed and its operating characteristics. Shop drawings shall be submitted for equipment and materials as directed in individual sections.
- C. Proposed Products List: Include Products specified in all Sections. Include individual components and equipment as their own line items. For each line item, include at a minimum:
 - 1. Unique line identifier.

2. Equipment tag, where applicable, as defined on the drawings.
 3. Equipment description
 4. Manufacturer.
 5. Complete model or part number.
 6. Quantity.
- D. Operation and Maintenance Manuals: Prepare and submit Operation and Maintenance manuals as described in Division 1 and related sections in Division 26.
- E. Submittal PDFs shall include bookmarks to the title page, table of contents, proposed products list (bill of materials), and all equipment and components within the submittal. Where multiple documents are present for a line item in the proposed products list, each shall be a subordinate bookmark to the main bookmark for the item.
- F. Submit shop drawings and product data grouped to include complete submittals of related systems, products, and accessories in a single submittal.
- G. Mark dimensions and values in units to match those specified.
- H. The Engineer will review shop drawings to aid in interpreting the Contract Documents, and will in so doing assume that the shop drawings conform to all specified requirements set forth in the Contract Documents. The review of the shop drawing by the Engineer does not relieve the Contractor of the responsibility of complying with all elements of the Contract Documents.

1.07 REGULATORY REQUIREMENTS

- A. Imposed Standards/Regulations:
1. General: Applicable provisions of the following codes and standards are hereby imposed on a general basis for the electrical work in addition to specific applications specified by individual work sections of the Specifications.
 - a. Underwriters Laboratories (UL).
 - b. NFPA 70: National Electrical Code (NEC).
 - c. NFPA Standards and Pamphlets.
 - d. Local and State Electrical, Mechanical and Building Codes as they apply.
 - e. American Gas Association (AGA).
 - f. AWS Standards for Welding.
 2. Every installation shall also comply with applicable Divisions and Sections of this Specification. If changes are required to attain compliance, the Contractor shall submit the proposed changes to the Engineer for review and approval. If approval for the change is obtained, revised submittal data shall be provided for review.
 3. Installations must be safe in every respect, and must not create any condition which will be harmful to building occupants, operating personnel, installation personnel, testing personnel, construction workers, and general public. If Contractor believes that the installation will not be safe for all parties, the Contractor shall so report in writing to the Engineer, stating the issues and conditions and possible remedies, before any equipment is purchased or installed.
 4. The manufacturer of each type of equipment, used by itself or as a part of any system, shall carefully check capacities, arrangements, and methods shown or specified (including space requirements, servicing requirements, ambient air temperatures, etc.) for installation of the equipment, and all connections to other system or to parts of same system to assure that when used, connected, interconnected, piped, wired, or controlled as specified, the equipment can be properly serviced. If the manufacturer has any reservations in this regard, the manufacturer shall state such reservations and any suggested changes to the Engineer as a part of the shop drawing submission.

5. Engineer will work out required changes and adjustments in Contract Prices where such adjustments are warranted. No adjustments in Contract Price will be allowed for additions required by applicable code, ordinance, statute, utility regulation, or labor regulation. It is the obligation of the Contractor to include such items in the original Bid. Changes in equipment shall be incorporated in shop drawings. If Contractor fails to call such reservations or suggestions to Engineer's attention, in writing, before any work is done or equipment is purchased, it will be assumed that the Contractor accepts responsibility for providing a completely safe and completely coordinated installation. If at a later date changes become necessary to assure a completely safe and coordinated installation, they shall be made, as approved by Engineer, without increase in Contract Price.
- B. Permits and Tests, Electrical Work: Unless otherwise noted in the detailed contractual description preceding these technical specifications, the Contractor shall secure all permits and pay all fees required in connection with this installation and shall be responsible for securing such inspections as are required by the authorities with jurisdiction over the site. Submit a record copy to the Owner and the Engineer of electrical work notices, permits, licenses, inspection or test reports, and similar items obtained in response to governing and imposed regulations and standards.

1.08 PROJECT CONDITIONS

- A. Inspect site prior to bidding to be thoroughly familiar with existing conditions.
- B. Install Work in locations shown on Drawings, unless prevented by Project conditions.
- C. Prepare drawings showing proposed rearrangement of Work to meet Project conditions, including changes to Work specified in other Sections. Obtain permission of Engineer before proceeding.
- D. All Contractors shall familiarize themselves with the site and with any conditions of the site and/or existing buildings which might present unusual aspects to the work involved. Contractor shall verify all aspects of electrical work, insofar as is possible, check routes of conduit indicated, verifying clearances and other obstacles which might influence the construction proposed. No extras can be allowed on work occasioned by the Contractor's failure to make this inspection.

1.09 SEQUENCING AND SCHEDULING

- A. Install work to accommodate Owner's occupancy requirements during construction period and coordinate electrical schedule and operations with Owner.
- B. Construct Work in sequence under provisions of Division 1 - General Requirements and other Sections as applicable.
- C. Completion of Electrical Work shall be coordinated with other trades and contractors to expedite completion of the Project.
- D. The Contractor shall coordinate the placing of openings in the structures as required for the installation of the Electrical Work.
- E. It will be the Contractor's responsibility to examine the Drawings and Specifications, to take measurements where required, to verify dimensions for correct placement of equipment and to progress the Contract as expeditiously as possible, so that the progress of the work is orderly and does not cause unnecessary cutting and patching of the structure. The Contractor shall be pecuniarily responsible for the cutting and patching of the structure occasioned by failure to install sleeves, grilles or other items required by the Electrical Work at the proper time for the normal installation of such items.
- F. The Contractor shall provide cutting and patching and patch painting of the structure, as required for the installation of the Work, and shall furnish lintels and supports as required for openings. Cutting of structural support members will not be permitted without prior approval of the Engineer. Extent of cutting shall be minimized; use core drills, power saws or other machines which will provide neat, minimum openings. Patching shall match adjacent materials and surfaces and shall be performed by craftsmen skilled in the respective craft required.

- G. The determination of quantities of material and equipment required shall be made by the Contractor from the Contract Documents. Schedules on the Drawings and in the Specifications are completed as an aid to the Contractor but where discrepancies arise, the greater number shall govern.

1.10 OPENINGS, CUTTING, AND PATCHING

- A. The Contractor shall coordinate the placing of openings in structures, as required, for the installation of the Electrical Work.
- B. The Contractor shall coordinate the accurate locations and sizes for required openings, and shall have the responsibility of checking to assure that proper size openings are provided. When additional patching is required due to the Contractor's failure to inspect the work, then the Contractor shall make arrangements for the patching required to properly close the openings, to include patch painting, and the Contractor shall pay any additional cost incurred in this respect.
- C. When cutting and patching of the structure is made necessary due to the Contractor's failure to install conduit wiring or equipment on schedule, or due to the Contractor's failure to furnish, on schedule, the information required for the leaving of openings, then it shall be the Contractor's responsibility to make arrangements for the cutting and patching and the Contractor shall pay any additional cost incurred in the correction.
- D. The Contractor shall provide cutting, patching and patch painting as required for the installation of Work in existing structures, and shall furnish lintels and supports as required for openings.
- E. Cutting of structural support members will not be permitted without prior approval of the Engineer. Extent of cutting shall be minimized; use core drills, power saws or other machines which will provide neat, minimum openings. Patching shall match adjacent materials and surfaces and shall be performed by craftsmen skilled in the respective craft required.

1.11 CONCRETE WORK

- A. The Contractor shall coordinate size and location of concrete bases and pads for electrical equipment with the required trades and with the Utility.
- B. The Contractor shall furnish equipment anchor bolts and shall be responsible for their proper installation and accurate location.

1.12 WIRING FOR ELECTRICAL EQUIPMENT

- A. The Contractor will provide power services for motors and equipment furnished by the Mechanical Contractor to include safety disconnect switches and final connections.
- B. The Contractor will be responsible for power wiring, internal wiring, alarm wiring, control wiring or interlock wiring of all equipment installed or modified under this Contract.
- C. This Contractor will furnish motor starters for motors furnished by the Mechanical Contractor, except where other Sections call for starters to be furnished by the Mechanical Contractor.
- D. The Contractor shall review the Drawings and shall call to the attention of the Engineer, prior to bidding, omissions of electrical services required for this equipment.

1.13 PROTECTION

- A. Special care shall be taken for the protection of equipment furnished by the Contractor. Equipment and material shall be completely protected from weather elements, painting, plaster, etc. until the Project is completed. Damage from rust, paint, scratches, etc. shall be repaired as required to restore equipment to original condition.
- B. Protection of equipment during the plastering and painting of the building shall be the responsibility of the Contractor performing that work, but this shall not relieve the Contractor of the responsibility of checking to assure that adequate protection is being provided.

- C. Where the installation or connection of equipment requires the Contractor to work in areas previously finished, the Contractor shall be responsible that such areas are protected and are not marred, soiled or otherwise damaged during the course of such work. The Contractor shall repair and refinish such areas which were damaged due to work performed by the Contractor.
- D. When heavy materials must be placed upon or transported over the roof deck, sheeting shall be placed to distribute weight and support such materials.

1.14 FINISHING

- A. Prior to acceptance of the installation and final payment of the Contract, the Contractor shall perform the work outlined herein.
- B. Perform cleaning required by Division 1 applicable to this Division of the Work. Cleaning shall include removing debris and dirt from panels, pull boxes, junction boxes, and other enclosures.
- C. Operation and Maintenance Manuals: Prepare and submit Operation and Maintenance manuals as described in Division 1 and related sections in Division 26.

1.15 TEST AND DEMONSTRATIONS

- A. Systems shall be tested and placed in proper working order prior to demonstrating systems to Owner.
- B. Prior to acceptance of the electrical installation, the Contractor shall demonstrate to the Owner or designated representatives all essential features and functions of all systems installed, and shall instruct the Owner in the proper operation and maintenance of such systems.
- C. Contractor shall furnish the necessary trained personnel to perform the demonstrations and instructions and shall arrange to have the manufacturer's representatives for the system present to assist with the demonstrations. The Owner and Contractor shall each sign a certification stating that the training has been performed and the Owner accepts same.

1.16 PAINTING AND IDENTIFICATION

- A. Painting of electrical enclosures (switch/outlet boxes, starters, disconnects, control cabinets and panelboards) shall be touch-up only of factory finish or finish specified elsewhere.
- B. Conduit and raceway systems shall be unpainted unless specifically noted. If painting of conduit and raceway systems is required, coat with paint type and color to match background mounting surface.
- C. Identify panels, switchgear, starters, switches, valves and dampers with engraved nameplates.
- D. Provide typed panel and switchboard schedules.
- E. Provide plastic "Buried Electrical" warning tape in trench above all underground circuit runs. Place approximately 18 inches below finished grade.

1.17 PRODUCT QUALITY, PERFORMANCE, AND SUBSTITUTIONS

- A. All materials shall be the standard product of a reputable manufacturer regularly engaged in the manufacture of the specific product, and where more than one unit is required of the item, all shall be of the same manufacturer.
- B. Proposals as submitted shall be based on the products specifically named in the specifications.
- C. If specific products of more than one manufacturer are specified, the choice of these shall be made optional with the Contractor.
- D. All materials are subject to approval by the Engineer both before and after incorporation in the building.
- E. Should suppliers of materials not specified wish to bid their material as a base bid equal, they shall secure the written approval of the Engineer that their product is acceptable as an equal to that specified at least ten (10) days in advance of the bid date to have their products covered in an Addendum prior to opening of bids.

- F. The Engineer reserves the right to refuse approval on equipment which does not meet the specification. Any materials not conforming to the specification may be ordered removed any time during the course of construction, and the Contractor shall replace such items, when notified, at the Contractor's expense. The Engineer further reserves the right to reject equipment for which the availability of maintenance service and replacement parts is questionable.
- G. All materials and equipment shall be new. Second-hand, used, or salvaged equipment will not be allowed unless specifically noted.
- H. All elements of the construction shall be performed by workmen skilled in the particular craft involved, and regularly employed in that particular craft. All work shall be performed in a neat, workmanlike manner in keeping with the highest standards of the craft.
- I. The Engineer reserves the right to determine space priority of the equipment in the event of interference between the piping and equipment of the various installations. Conflicts between the Drawings and Specifications, or between requirements set forth for the various trades shall be called to the attention of the Engineer. If clarification is not asked for prior to the taking of bids, it will be assumed that none is required and that the Contractor has submitted the bid in conformance with Contract Documents as issued.

1.18 EXCAVATING, TRENCHING AND BACKFILLING

- A. The Contractor shall do excavating necessary for underground electrical ducts, wiring, manholes, conduit, etc., and shall backfill such trenches and excavations after equipment has been installed and tested. Care shall be taken in excavating, that walls and footings and adjacent load bearing soils are not disturbed, except where lines must cross under a wall footing. Where a line must pass under footing, the crossing shall be made by the smallest possible trench to accommodate the pipe.
- B. Excavation shall be kept free from water by pumping if necessary. No greater length of trench shall be left open, in advance of pipe and utility laying, than necessary.
- C. Immediately after testing and/or inspection, the trench shall be carefully backfilled. Place backfill into trench so the impact on installed pipe is minimized. Backfill and compact to specifications described in Division 2 for utility trenching.

1.19 COORDINATION

- A. Where the Contract Documents state that equipment shall be "furnished", "installed", or "provided", it shall be understood to mean the Contractor shall furnish and install completely unless otherwise noted.

1.20 EXISTING SERVICE

- A. If existing services are encountered in the Work, protect, brace, and support existing active sewers, gas, electric, or other services where required for the proper execution of the Work. If existing active services are encountered that require relocation, make request to proper authorities for determination of procedure. Do not prevent or disturb operation of active services that are to remain.

1.21 TEMPORARY SHUTDOWNS OR ABANDONED SERVICES

- A. Where the Work makes temporary shutdowns or need to abandon unavoidable, Contractor shall consult with the Owner as to times and procedures for such shutdowns. Where existing services are to be abandoned, wiring shall be removed and conduit shall be properly capped in conformance with requirements of the Utility.

1.22 SITE

- A. The site shall be kept orderly and clean at all times during the construction and the storing of materials shall be in accordance with the requirements of the Owner in areas designated for that purpose. At the conclusion of the construction, the site shall be cleaned thoroughly of all rubble, debris and unused materials and shall be left in good order. All tunnels, chases or closed off spaces shall be cleaned of all waste materials, wood frame members, etc. used in construction.

1.23 NOISE AND VIBRATION

- A. Electrical equipment shall operate without objectionable noise or vibration as determined by the Engineer. If such objectionable noise or vibration should be produced and transmitted to occupied portions of the building by apparatus, conduit, ducts or other parts of the electrical work, the Contractor shall make necessary changes and additions, as approved by the Engineer.

1.24 EQUIPMENT INSTALLATION

- A. Erect equipment in neat and workmanlike manner, align, level and adjust for satisfactory operation, install so that connecting and disconnecting parts can be made readily and so that all parts are easily accessible for inspection, operation and maintenance.

1.25 APPLICATIONS

- A. Where applications are required for the procuring of utility service to the building, the Contractor shall see that such application is properly filed with the Utility and that all information required for such an application is presented to the extent and in the form required by the Utility Company.

1.26 RECORD UTILITIES DRAWINGS

- A. Contractor shall prepare and submit to Engineer drawings showing the exact location of all installed underground electrical and conduit runs and any existing underground utilities encountered during installation. The drawings shall give accurate locations (referenced to visible above-grade objects) and dimensions of all such equipment for future use by the Owner. These drawings shall be submitted to the Engineer as soon as practicable after such runs have been installed.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION 26 0500

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SECTION 26 0519
LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Single conductor building wire.
- B. Wire and cable for 600 volts and less.
- C. Wiring connectors.
- D. Electrical tape.
- E. Heat shrink tubing.
- F. Wire pulling lubricant.

1.02 REFERENCE STANDARDS

- A. ASTM B3 - Standard Specification for Soft or Annealed Copper Wire.
- B. ASTM B8 - Standard Specification for Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard, or Soft.
- C. ASTM B33 - Standard Specification for Tin-Coated Soft or Annealed Copper Wire for Electrical Purposes.
- D. ASTM B787/B787M - Standard Specification for 19 Wire Combination Unilay-Stranded Copper Conductors for Subsequent Insulation.
- E. ASTM D3005 - Standard Specification for Low-Temperature Resistant Vinyl Chloride Plastic Pressure-Sensitive Electrical Insulating Tape.
- F. ASTM D4388 - Standard Specification for Nonmetallic Semi-Conducting and Electrically Insulating Rubber Tapes.
- G. NECA 1 - Standard for Good Workmanship in Electrical Construction.
- H. NEMA WC 70 - Power Cables Rated 2000 Volts or Less for the Distribution of Electrical Energy.
- I. NFPA 70 - National Electrical Code.
- J. UL 44 - Thermoset-Insulated Wires and Cables.
- K. UL 83 - Thermoplastic-Insulated Wires and Cables.
- L. UL 486A-486B - Wire Connectors.
- M. UL 486C - Splicing Wire Connectors.
- N. UL 486D - Sealed Wire Connector Systems.
- O. UL 510 - Polyvinyl Chloride, Polyethylene, and Rubber Insulating Tape.

1.03 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Coordinate sizes of raceways, boxes, and equipment enclosures installed under other sections with the actual conductors to be installed, including adjustments for conductor sizes increased for voltage drop.
 - 2. Coordinate with electrical equipment installed under other sections to provide terminations suitable for use with the conductors to be installed.
 - 3. Notify Engineer of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

1.04 SUBMITTALS

- A. See Section 01 3000 - ADMINISTRATIVE REQUIREMENTS, for submittal procedures.
- B. Product Data: Provide for each cable assembly type.

- C. Manufacturer's Installation Instructions: Indicate application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, and installation of Product.
- D. Project Record Documents: Record actual installed circuiting arrangements. Record actual routing for underground circuits.

1.05 QUALITY ASSURANCE

- A. Conform to requirements of NFPA 70.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Receive, inspect, handle, and store conductors and cables in accordance with manufacturer's instructions.

1.07 FIELD CONDITIONS

- A. Do not install or otherwise handle thermoplastic-insulated conductors at temperatures lower than 14 degrees F, unless otherwise permitted by manufacturer's instructions. When installation below this temperature is unavoidable, notify Engineer and obtain direction before proceeding with work.
- B. Perform Work in accordance with NECA Standard of Installation.
- C. Products: Furnish products listed and classified by Underwriters Laboratories Inc. as suitable for the purpose specified and indicated.

1.08 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, protect, and handle Products to site.
- B. Accept wires and cables on site. Inspect for damage.
- C. Protect wires and cables from corrosion and entrance of debris by storing above grade. Provide appropriate covering.

1.09 WARRANTY

- A. Full warranty against defects in materials and workmanship for two (2) years after substantial completion, including all parts, labor, and expenses.

PART 2 PRODUCTS

2.01 MANUFACTURER

- A. Alan Wire Company.
- B. Belden, Inc.
- C. Cablec.
- D. Carroll.
- E. Southwire Company.
- F. Triangle.
- G. Engineer approved equivalent.
- H. All conductors/circuits shall be copper conductor. Use of aluminum conductors shall not be allowed unless specifically noted.
- I. All circuits shall be installed as building wire, control wire, or signal cable in raceway unless specifically noted or indicated on the Drawings.
- J. Use conductor not smaller than #12 AWG for power and lighting circuits.
- K. Use conductor not smaller than #14 AWG for control circuits.

2.02 CONDUCTOR AND CABLE GENERAL REQUIREMENTS

- A. Provide products that comply with requirements of NFPA 70.
- B. Provide products listed, classified, and labeled as suitable for the purpose intended.

- C. Unless specifically indicated to be excluded, provide all required conduit, boxes, wiring, connectors, etc. as required for a complete operating system.
- D. Comply with NEMA WC 70.
- E. Thermoplastic-Insulated Conductors and Cables: Listed and labeled as complying with UL 83.
- F. Thermoset-Insulated Conductors and Cables: Listed and labeled as complying with UL 44.
- G. Conductors for Grounding and Bonding: Also comply with Section 26 0526.
- H. Conductor Material:
 - 1. Provide copper conductors only. Aluminum conductors are not acceptable for this project. Conductor sizes indicated are based on copper.
 - 2. Copper Conductors: Soft drawn annealed, 98 percent conductivity, uncoated copper conductors complying with ASTM B3, ASTM B8, or ASTM B787/B787M unless otherwise indicated.
 - 3. Tinned Copper Conductors: Comply with ASTM B33.
- I. Minimum Conductor Size:
 - 1. Branch Circuits: 12 AWG.
 - a. Exceptions:
 - 1) 20 A, 120 V circuits longer than 75 feet: 10 AWG, for voltage drop.
 - 2) 20 A, 120 V circuits longer than 150 feet: 8 AWG, for voltage drop.
 - 3) 20 A, 277 V circuits longer than 150 feet: 10 AWG, for voltage drop.
 - 2. Control Circuits: 14 AWG.
- J. Conductor Color Coding:
 - 1. Color code conductors as indicated unless otherwise required by the authority having jurisdiction. Maintain consistent color coding throughout project.
 - 2. Color Coding Method: Integrally colored insulation.
 - 3. Color Code:
 - a. 480Y/277 V, 3 Phase, 4 Wire System:
 - 1) Phase A: Brown.
 - 2) Phase B: Orange.
 - 3) Phase C: Yellow.
 - 4) Neutral/Grounded: Gray.
 - b. 240/120 V High-Leg Delta, 3 Phase, 4 Wire System:
 - 1) Phase A: Black.
 - 2) Phase B (High-Leg): Orange.
 - 3) Phase C: Blue.
 - 4) Neutral/Grounded: White.
 - c. Equipment Ground, All Systems: Green.
 - d. Travelers for 3-Way and 4-Way Switching: Pink.
 - e. For control circuits, comply with manufacturer's recommended color code.

2.03 SINGLE CONDUCTOR BUILDING WIRE

- A. Description: Single conductor insulated wire.
- B. Conductor Stranding:
 - 1. Feeders and Branch Circuits: Stranded.
- C. Insulation Voltage Rating: 600 V.
- D. Insulation:
 - 1. Copper Building Wire: Type THHN/THWN or THHN/THWN-2, except as indicated below.
 - a. Installed Underground: Type XHHW-2.
 - b. Between VFD outputs and motors: Type XHHW-2, unless specifically indicated otherwise.
- E. All wire routed through underground raceway shall be listed for wet location.

2.04 WIRING CONNECTORS

- A. Description: Wiring connectors appropriate for the application, suitable for use with the conductors to be connected, and listed as complying with UL 486A-486B or UL 486C as applicable.
- B. Wiring Connectors for Splices and Taps:
 - 1. Copper Conductors Size 10 AWG and smaller: Use twist-on insulated spring connectors.
 - 2. Copper Conductors Size 8 AWG and larger: Use mechanical connectors or compression connectors.
- C. Wiring Connectors for Terminations:
 - 1. Provide terminal lugs for connecting conductors to equipment furnished with terminations designed for terminal lugs.
 - 2. Provide compression adapters for connecting conductors to equipment furnished with mechanical lugs when only compression connectors are specified.
 - 3. Where over-sized conductors are larger than the equipment terminations can accommodate, provide connectors suitable for reducing to appropriate size, but not less than required for the rating of the overcurrent protective device.
 - 4. Copper Conductors Size 8 AWG and Larger: Use mechanical connectors or compression connectors where connectors are required.
 - 5. Stranded Conductors Size 10 AWG and Smaller: Use crimped terminals for connections to terminal screws.
 - 6. Conductors for Control Circuits: Use crimped terminals for all connections.
- D. Do not use insulation-piercing or insulation-displacement connectors designed for use with conductors without stripping insulation.
- E. Do not use push-in wire connectors as a substitute for twist-on insulated spring connectors.
- F. Twist-on Insulated Spring Connectors: Rated 600 V, 221 degrees F for standard applications and 302 degrees F for high temperature applications; pre-filled with sealant and listed as complying with UL 486D for damp and wet locations.
- G. Mechanical Connectors: Provide bolted type or set-screw type.
- H. Compression Connectors: Provide circumferential type or hex type crimp configuration.
- I. Crimped Terminals: Nylon-insulated, with insulation grip and terminal configuration suitable for connection to be made.

2.05 WIRING ACCESSORIES

- A. Electrical Tape:
 - 1. Vinyl Color Coding Electrical Tape: Integrally colored to match color code indicated; listed as complying with UL 510; minimum thickness of 7 mil; resistant to abrasion, corrosion, and sunlight; suitable for continuous temperature environment up to 221 degrees F.
 - 2. Vinyl Insulating Electrical Tape: Complying with ASTM D3005 and listed as complying with UL 510; minimum thickness of 7 mil; resistant to abrasion, corrosion, and sunlight; conformable for application down to 0 degrees F and suitable for continuous temperature environment up to 221 degrees F.
 - 3. Rubber Splicing Electrical Tape: Ethylene Propylene Rubber (EPR) tape, complying with ASTM D4388; minimum thickness of 30 mil; suitable for continuous temperature environment up to 194 degrees F and short-term 266 degrees F overload service.
 - 4. Electrical Filler Tape: Rubber-based insulating moldable putty, minimum thickness of 125 mil; suitable for continuous temperature environment up to 176 degrees F.
 - 5. Moisture Sealing Electrical Tape: Insulating mastic compound laminated to flexible, all-weather vinyl backing; minimum thickness of 90 mil.
- B. Heat Shrink Tubing: Heavy-wall, split-resistant, with factory-applied adhesive; rated 600 V; suitable for direct burial applications; listed as complying with UL 486D.
- C. Wire Pulling Lubricant: Listed; suitable for use with the conductors or cables to be installed and suitable for use at the installation temperature.

2.06 CONTROL AND SIGNAL CABLE

- A. Cable for Discrete Control Signals:
 - 1. Single conductor, #14 AWG stranded copper, type THHN/THWN insulation.
- B. Signal Cable for Analog Control Signals:
 - 1. One twisted shielded pair #18 AWG, 300V - Belden 8760 or equal.
 - 2. One twisted shielded triad (3-conductors), #18 AWG, 300V - Belden 8770 or equal.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that interior of building has been protected from weather.
- B. Verify that work likely to damage wire and cable has been completed.
- C. Verify that raceways, boxes, and equipment enclosures are installed and are properly sized to accommodate conductors and cables in accordance with NFPA 70.
- D. Verify that raceway installation is complete and supported.
- E. Verify that field measurements are as indicated.
- F. Verify that conditions are satisfactory for installation prior to starting work.

3.02 PREPARATION

- A. Verify conduit systems are ready to accept cables.
- B. Clean raceways thoroughly to remove foreign materials before installing conductors and cables.

3.03 INSTALLATION

- A. Circuiting Requirements:
 - 1. Unless dimensioned, circuit routing indicated is diagrammatic.
 - 2. When circuit destination is indicated without specific routing, determine exact routing required.
 - 3. Arrange circuiting to minimize splices.
 - 4. Include circuit lengths required to install connected devices within 10 ft of location indicated.
 - 5. Maintain separation of Class 1, Class 2, and Class 3 remote-control, signaling, and power-limited circuits in accordance with NFPA 70.
 - 6. Maintain separation of wiring for emergency systems in accordance with NFPA 70.
 - 7. Circuiting Adjustments: Unless otherwise indicated, when branch circuits are indicated as separate, combining them together in a single raceway is not permitted.
 - 8. Common Neutrals: Unless otherwise indicated, sharing of neutral/grounded conductors among single phase branch circuits of different phases installed in the same raceway is not permitted. Provide dedicated neutral/grounded conductor for each individual branch circuit.
- B. Install products in accordance with manufacturer's instructions.
- C. Perform work in accordance with NECA 1 (general workmanship).
- D. Installation in Raceway:
 - 1. Tape ends of conductors and cables to prevent infiltration of moisture and other contaminants.
 - 2. Pull all conductors and cables together into raceway at same time.
 - 3. Do not damage conductors and cables or exceed manufacturer's recommended maximum pulling tension and sidewall pressure.
 - 4. Use suitable wire pulling lubricant where necessary, except when lubricant is not recommended by the manufacturer.
- E. Paralleled Conductors: Install conductors of the same length and terminate in the same manner.
- F. Secure and support conductors and cables in accordance with NFPA 70 using suitable supports and methods approved by the authority having jurisdiction. Provide independent support from building structure. Do not provide support from raceways, piping, ductwork, or other systems.

- G. Install conductors with a minimum of 6 inches of slack at each outlet.
- H. Neatly train and bundle conductors inside boxes, wireways, panelboards and other equipment enclosures.
- I. Group or otherwise identify neutral/grounded conductors with associated ungrounded conductors inside enclosures in accordance with NFPA 70.
- J. Make wiring connections using specified wiring connectors.
 - 1. Make splices and taps only in accessible boxes. Do not pull splices into raceways or make splices in conduit bodies or wiring gutters.
 - 2. Remove appropriate amount of conductor insulation for making connections without cutting, nicking or damaging conductors.
 - 3. Do not remove conductor strands to facilitate insertion into connector.
 - 4. Clean contact surfaces on conductors and connectors to suitable remove corrosion, oxides, and other contaminants. Do not use wire brush on plated connector surfaces.
- K. Insulate splices and taps that are made with uninsulated connectors using methods suitable for the application, with insulation and mechanical strength at least equivalent to unspliced conductors.
 - 1. Dry Locations: Use insulating covers specifically designed for the connectors or heat shrink tubing.
 - 2. Damp Locations: Use insulating covers specifically designed for the connectors or heat shrink tubing.
 - a. For connections with insulating covers, apply outer covering of moisture sealing electrical tape.
 - b. For taped connections, follow same procedure as for dry locations but apply outer covering of moisture sealing electrical tape.
 - 3. Wet Locations: Use heat shrink tubing.
- L. Insulate ends of spare conductors using vinyl insulating electrical tape.
- M. Field-Applied Color Coding: Where vinyl color coding electrical tape is used in lieu of integrally colored insulation as permitted in Part 2 under "Color Coding", apply half overlapping turns of tape at each termination and at each location conductors are accessible.
- N. Identify conductors and cables in accordance with Section 26 0553.
- O. Install firestopping to preserve fire resistance rating of partitions and other elements, using materials and methods specified in Section 07 8400.
- P. Unless specifically indicated to be excluded, provide final connections to all equipment and devices, including those furnished by others, as required for a complete operating system.
- Q. Install wire and cable securely, in a neat and workmanlike manner, as specified in NECA 1.
- R. All interconnecting circuit wires or cables (power and control) shall be tagged with an appropriate numbering system that assigns a unique identification to the wire or cable that is compatible with the tagging system of the connected equipment. Tags shall be applied at all junctions and terminations of each wire or cable.
- S. Install a waterproof sealant (such as silicone rubber) in conduits connected to control valves, instrumentation, and other electrical power and control devices mounted directly to water piping. Inject sealant near end of flexible conduit connected to device. Install sealant after all power and control conductors have been installed and operation of equipment has been verified.
- T. Conductors shall be terminated on screw or compression lug terminals. Conductor runs shall not be spliced between points of termination unless specified or approved by the Engineer.
- U. Route wire and cable as required to meet project conditions.
- V. Pull all conductors into raceway at same time.
- W. Use suitable wire pulling lubricant for building wire 4 AWG and larger.

- X. Support cables above accessible ceiling, using spring metal clips or metal cable ties to support cables from structure or ceiling suspension system. Do not rest cable on ceiling panels.
- Y. Neatly train and lace wiring inside boxes, equipment, and panelboards.
- Z. Clean conductor surfaces before installing lugs and connectors.
- AA. Make splices, taps, and terminations to carry full ampacity of conductors with no perceptible temperature rise.
- BB. Terminate spare conductors with electrical tape and label as such.

3.04 FIELD QUALITY CONTROL

- A. See Section 01 4000 - Quality Requirements, for additional requirements.
- B. Perform inspection, testing, and adjusting in accordance with Section 01 4000.
- C. Perform field inspection in accordance with Section 01 4000.
- D. Perform inspections and tests listed in NETA ATS, Section 7.3.2. The insulation resistance test is required for all conductors. The resistance test for parallel conductors listed as optional is not required.
- E. Correct deficiencies and replace damaged or defective conductors and cables.

END OF SECTION 26 0519

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SECTION 26 0526
GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Grounding and bonding requirements.
- B. Conductors for grounding and bonding.
- C. Ground bars.
- D. Ground rod electrodes.
- E. Ground access wells.
- F. Wire, components, and miscellaneous equipment in supplying and installing electrical grounding systems.
- G. Provide all components necessary to complete the grounding system(s) consisting of:
 - 1. Metal underground water pipe.
 - 2. Ground rings.
 - 3. Rod electrodes.

1.02 RELATED REQUIREMENTS

- A. Section 26 0519 - LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES:
Additional requirements for conductors for grounding and bonding, including conductor color coding.
- B. Section 26 0553 - Identification for Electrical Systems: Identification products and requirements.

1.03 REFERENCE STANDARDS

- A. NECA 1 - Standard for Good Workmanship in Electrical Construction.
- B. NEMA GR 1 - Grounding Rod Electrodes and Grounding Rod Electrode Couplings.
- C. NETA ATS - Standard for Acceptance Testing Specifications for Electrical Power Equipment And Systems.
- D. NFPA 70 - National Electrical Code.
- E. NFPA 780 - Standard for the Installation of Lightning Protection Systems.
- F. UL 467 - Grounding and Bonding Equipment.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Verify exact locations of underground metal water service pipe entrances to building.
 - 2. Notify Engineer of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.
- B. Sequencing:
 - 1. Do not install ground rod electrodes until final backfill and compaction are complete.

1.05 PERFORMANCE REQUIREMENTS

- A. Grounding System Resistance: 5 ohms maximum.

1.06 SUBMITTALS

- A. See Section 01 3000 - ADMINISTRATIVE REQUIREMENTS for submittals procedures.
- B. Product Data: Provide manufacturer's standard catalog pages and data sheets for grounding and bonding system components.
- C. Project Record Documents: Record actual locations of components and grounding electrodes.

1.07 QUALITY ASSURANCE

- A. Conform to requirements of NFPA 70.

- B. Comply with TIA/EIA-607 for telecommunications grounding.

1.08 DELIVERY, STORAGE, AND HANDLING

- A. Receive, inspect, handle, and store products in accordance with manufacturer's instructions.

1.09 WARRANTY

- A. Full warranty against defects in materials and workmanship for two years after substantial completion, including all parts, labor, and expenses.

PART 2 PRODUCTS

2.01 GROUNDING AND BONDING REQUIREMENTS

- A. Existing Work: Where existing grounding and bonding system components are indicated to be reused, they may be reused only where they are free from corrosion, integrity and continuity are verified, and where acceptable to the authority having jurisdiction.
- B. Do not use products for applications other than as permitted by NFPA 70 and product listing.
- C. Unless specifically indicated to be excluded, provide all required components, conductors, connectors, conduit, boxes, fittings, supports, accessories, etc. as necessary for a complete grounding and bonding system.
- D. Where conductor size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.
- E. Grounding Electrode System:
 - 1. Provide connection to required and supplemental grounding electrodes indicated to form grounding electrode system.
 - a. Provide continuous grounding electrode conductors without splice or joint.
 - b. Install grounding electrode conductors in raceway where exposed to physical damage. Bond grounding electrode conductor to metallic raceways at each end with bonding jumper.
 - 2. Metal Underground Water Pipe(s):
 - a. Provide connection to underground metal domestic and fire protection (where present) water service pipe(s) that are in direct contact with earth for at least 10 feet at an accessible location not more than 5 feet from the point of entrance to the building.
 - b. Provide bonding jumper(s) around insulating joints/pipes as required to make pipe electrically continuous.
 - c. Provide bonding jumper around water meter of sufficient length to permit removal of meter without disconnecting jumper.
 - 3. Metal In-Ground Support Structure:
 - a. Provide connection to metal in-ground support structure that is in direct contact with earth in accordance with NFPA 70.
 - 4. Ground Ring:
 - a. Provide a ground ring encircling the transformer consisting of bare copper conductor not less than #4/0 in direct contact with earth, installed at a depth of not less than 30 inches.
 - b. Provide connection from ground ring conductor to:
 - 1) Ground rod electrodes located as indicated.
 - 5. Ground Rod Electrode(s):
 - a. Provide ground rods where indicated on the Drawings.
 - b. Space electrodes not less than 20 feet from each other and any other ground electrode.
 - c. Where location is not indicated, locate electrode(s) at least 5 feet outside building perimeter foundation as near as possible to electrical service entrance; where possible, locate in softscape (uncovered) area.
 - d. Provide ground access well where indicated.
- F. Bonding and Equipment Grounding:

1. Provide bonding for equipment grounding conductors, equipment ground busses, metallic equipment enclosures, metallic raceways and boxes, device grounding terminals, and other normally non-current-carrying conductive materials enclosing electrical conductors/equipment or likely to become energized as indicated and in accordance with NFPA 70.
 2. Provide insulated equipment grounding conductor in each feeder and branch circuit raceway. Do not use raceways as sole equipment grounding conductor.
 3. Where circuit conductor sizes are increased for voltage drop, increase size of equipment grounding conductor proportionally in accordance with NFPA 70.
 4. Unless otherwise indicated, connect wiring device grounding terminal to branch circuit equipment grounding conductor and to outlet box with bonding jumper.
 5. Terminate branch circuit equipment grounding conductors on solidly bonded equipment ground bus only. Do not terminate on neutral (grounded) or isolated/insulated ground bus.
 6. Provide bonding jumper across expansion or expansion/deflection fittings provided to accommodate conduit movement.
- G. Lightning Protection Systems, in Addition to Requirements of Section 26 4113:
1. Do not use grounding electrode dedicated for lightning protection system for component of building grounding electrode system provided under this section.
 2. Provide bonding of building grounding electrode system provided under this section and lightning protection grounding electrode system in accordance with NFPA 70 and NFPA 780.

2.02 GROUNDING AND BONDING COMPONENTS

- A. General Requirements:
1. Provide products listed, classified, and labeled as suitable for the purpose intended.
 2. Provide products listed and labeled as complying with UL 467 where applicable.
- B. Conductors for Grounding and Bonding, in Addition to Requirements of Section 26 0526:
1. Use insulated copper conductors unless otherwise indicated.
 - a. Exceptions:
 - 1) Use bare copper conductors where installed underground in direct contact with earth.
 - 2) Use bare copper conductors where directly encased in concrete (not in raceway).
- C. Connectors for Grounding and Bonding:
1. Description: Connectors appropriate for the application and suitable for the conductors and items to be connected; listed and labeled as complying with UL 467.
 2. Unless otherwise indicated, use exothermic welded connections for underground, concealed and other inaccessible connections.
 3. Unless otherwise indicated, use mechanical connectors or compression connectors for accessible connections.
 - a. Exceptions:
 - 1) Use exothermic welded connections for connections to metal building frame.
- D. Ground Rod Electrodes:
1. Comply with NEMA GR 1.
 2. Material: Copper-bonded (copper-clad) steel.
 3. Size: 3/4 inch diameter by 10 feet length, unless otherwise indicated.
- E. Ground Access Wells:
1. Description: Open bottom round or rectangular well with access cover for testing and inspection; suitable for the expected load at the installed location.
 2. Size: As required to provide adequate access for testing and inspection, but not less than minimum size requirements specified.
 - a. Round Wells: Not less than 8 inches in diameter.
 - b. Rectangular Wells: Not less than 12 by 12 inches.
 3. Depth: As required to extend below frost line to prevent frost upheaval, but not less than 10 inches.

4. Cover: Factory-identified by permanent means with word "GROUND".
5. Manufacturers:
 - a. Advanced Lightning Technology (ALT): www.altfab.com/#sle.
 - b. Erico International Corporation: www.erico.com/#sle.
 - c. Harger Lightning & Grounding: www.harger.com/#sle.
 - d. Substitutions: See Section 01 6000 - Product Requirements.

2.03 MANUFACTURERS

- A. Thomas & Betts.
- B. Erico.
- C. Cooper Power Systems, a division of Cooper Industries: www.cooperindustries.com.
- D. Framatome Connectors International: www.fciconnect.com.
- E. Engineer approved equivalent.

2.04 CONDUCTORS/WIRE

- A. Material: Copper.
- B. Grounding electrode conductors and bonding jumpers:
 1. Sizes #8 AWG and smaller: Bare solid conductor.
 2. Sizes #6 AWG and larger: Bare stranded conductor.
- C. Equipment grounding conductors:
 1. Stranded, insulated.
- D. Size conductors as indicated on the Drawings. If no size is indicated, size conductors to meet NFPA 70 requirements.

2.05 CONNECTORS AND ACCESSORIES

- A. Compression Crimp Connectors: Copper.
- B. Mechanical Connectors: Bronze.
- C. Exothermic Connectors: Exothermic pre-measured charges and molds without pits or cracks as required for various configurations using electrical ignition system.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that work likely to damage grounding and bonding system components has been completed.
- B. Verify that field measurements are as indicated.
- C. Verify that conditions are satisfactory for installation prior to starting work.
- D. Verify existing conditions prior to beginning work.
- E. Verify final length and location of ground conductors.
- F. Verify that final backfill and compaction has been completed before driving rod electrodes.

3.02 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Perform work in accordance with NECA 1 (general workmanship).
- C. Ground Rod Electrodes: Unless otherwise indicated, install ground rod electrodes vertically. Where encountered rock prohibits vertical installation, install at 45 degree angle or bury horizontally in trench at least 30 inches (750 mm) deep in accordance with NFPA 70 or install at 45 degree angle or bury horizontally in trench at least 30 inches (750 mm) deep in accordance with NFPA 70.
 1. Outdoor Installations: Unless otherwise indicated, install with top of rod 6 inches below finished grade.

2. Indoor Installations: Unless otherwise indicated, install with 4 inches of top of rod exposed.
- D. Make grounding and bonding connections using specified connectors.
 1. Remove appropriate amount of conductor insulation for making connections without cutting, nicking or damaging conductors. Do not remove conductor strands to facilitate insertion into connector.
 2. Remove nonconductive paint, enamel, or similar coating at threads, contact points, and contact surfaces.
 3. Exothermic Welds: Make connections using molds and weld material suitable for the items to be connected in accordance with manufacturer's recommendations.
 4. Mechanical Connectors: Secure connections according to manufacturer's recommended torque settings.
 5. Compression Connectors: Secure connections using manufacturer's recommended tools and dies.
- E. Identify grounding and bonding system components in accordance with Section 26 0553.
- F. Install Products in accordance with manufacturer's instructions.
- G. Refer to grounding details on Drawings.
- H. Install ground electrodes at locations indicated. Install additional rod electrodes as required to achieve specified resistance to ground.
- I. For each site lighting pole or foundation, provide a ground rod installed and bonded to the pole as detailed on the Drawings.
- J. Install a #10 grounding conductor from the grounding electrode system to each telephone board.
- K. Provide bonding to meet requirements described in Quality Assurance.
- L. Equipment Grounding Conductor: Provide an equipment grounding conductor with each feeder and branch circuit regardless of raceway type. Terminate each end on suitable lug, bus, or bushing.
- M. Concealed connections such as those underground or buried inside inaccessible wall or ceiling spaces shall be compression crimp or exothermic type. Mechanical connections shall be for exposed or readily accessible connections only.

3.03 FIELD QUALITY CONTROL

- A. See Section 01 4000 - Quality Requirements, for additional requirements.
- B. Inspect grounding and bonding system conductors and connections for tightness and proper installation.
- C. Perform inspection, testing, and adjusting in accordance with Section 01 4000.
- D. Perform inspections and tests listed in NETA ATS, Section 7.13.
- E. Perform ground electrode resistance tests under normally dry conditions. Precipitation within the previous 48 hours does not constitute normally dry conditions.
- F. Investigate and correct deficiencies where measured ground resistances do not comply with specified requirements.

END OF SECTION 26 0526

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**SECTION 26 0529
HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Support and attachment components for equipment, conduit, cable, boxes, and other electrical work.
- B. Conduit and equipment supports.
- C. Anchors and fasteners.

1.02 RELATED REQUIREMENTS

- A. Section 26 0533.13 - Conduit for Electrical Systems: Additional support and attachment requirements for conduits.
- B. Section 26 0533.16 - Boxes for Electrical Systems: Additional support and attachment requirements for boxes.

1.03 REFERENCE STANDARDS

- A. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
- B. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
- C. ASTM B633 - Standard Specification for Electrodeposited Coatings of Zinc on Iron and Steel.
- D. MFMA-4 - Metal Framing Standards Publication.
- E. NECA 1 - Standard for Good Workmanship in Electrical Construction.
- F. NFPA 70 - National Electrical Code.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Coordinate sizes and arrangement of supports and bases with the actual equipment and components to be installed.
 - 2. Coordinate the work with other trades to provide additional framing and materials required for installation.
 - 3. Coordinate compatibility of support and attachment components with mounting surfaces at the installed locations.
 - 4. Coordinate the arrangement of supports with ductwork, piping, equipment and other potential conflicts installed under other sections or by others.
 - 5. Notify Engineer of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.
- B. Sequencing:
 - 1. Do not install products on or provide attachment to concrete surfaces until concrete has fully cured in accordance with Section 03 3000.

1.05 SUBMITTALS

- A. See Section 01 3000 - ADMINISTRATIVE REQUIREMENTS, for submittal procedures.
- B. Product Data: Provide manufacturer's catalog data for fastening systems.
- C. Manufacturer's Instructions: Indicate application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, and installation of product.

1.06 DESCRIPTION

- A. Description: Steel channel, fittings, and anchors used to support various electrical devices and equipment racks.

1.07 QUALITY ASSURANCE

- A. Comply with NFPA 70.
- B. Comply with applicable building code.
- C. Products: Listed and classified by Underwriters Laboratories Inc. as suitable for the purpose specified and indicated.

1.08 DELIVERY, STORAGE, AND HANDLING

- A. Materials and components shall be inspected for damage and physical defects.
- B. Materials and components shall be stored in accordance with manufacturer's recommendations.

1.09 WARRANTY

- A. Full warranty against defects in materials and workmanship for two years after substantial completion, including all parts, labor, and expenses.

PART 2 PRODUCTS

2.01 SUPPORT AND ATTACHMENT COMPONENTS

- A. General Requirements:
 - 1. Provide all required hangers, supports, anchors, fasteners, fittings, accessories, and hardware as necessary for the complete installation of electrical work.
 - 2. Provide products listed, classified, and labeled as suitable for the purpose intended, where applicable.
 - 3. Where support and attachment component types and sizes are not indicated, select in accordance with manufacturer's application criteria as required for the load to be supported. Include consideration for vibration, equipment operation, and shock loads where applicable.
 - 4. Do not use products for applications other than as permitted by NFPA 70 and product listing.
 - 5. Do not use wire, chain, perforated pipe strap, or wood for permanent supports unless specifically indicated or permitted.
 - 6. Steel Components: Use corrosion resistant materials suitable for the environment where installed.
 - a. Indoor Dry Locations: Use zinc-plated steel or approved equivalent unless otherwise indicated.
 - b. Outdoor and Damp or Wet Indoor Locations: Use stainless steel, approved equivalent, or 304 stainless steel unless otherwise indicated.
 - c. Zinc-Plated Steel: Electroplated in accordance with ASTM B633.
 - d. Galvanized Steel: Hot-dip galvanized after fabrication in accordance with ASTM A123/A123M or ASTM A153/A153M.
- B. Conduit and Cable Supports: Straps, clamps, etc. suitable for the conduit or cable to be supported.
 - 1. Conduit Straps: One-hole or two-hole type; steel or malleable iron depending on conduit type.
 - 2. Conduit Clamps: Bolted type unless otherwise indicated.
- C. Outlet Box Supports: Hangers, brackets, etc. suitable for the boxes to be supported.
- D. Metal Channel (Strut) Framing Systems: Factory-fabricated continuous-slot metal channel (strut) and associated fittings, accessories, and hardware required for field-assembly of supports.
 - 1. Comply with MFMA-4.
 - 2. Channel Material:
 - a. Indoor Dry Locations: Use zinc-plated steel or galvanized steel.
 - b. Outdoor, Corrosive, and Damp or Wet Indoor Locations: Use 304 stainless steel.
- E. Hanger Rods: Threaded, zinc-plated steel unless otherwise indicated.
- F. Anchors and Fasteners:
 - 1. Unless otherwise indicated and where not otherwise restricted, use the anchor and fastener types indicated for the specified applications.

2. Concrete: Use preset concrete inserts, expansion anchors, or screw anchors.
3. Solid or Grout-Filled Masonry: Use expansion anchors or screw anchors.
4. Hollow Masonry: Use toggle bolts.
5. Hollow Stud Walls: Use toggle bolts.
6. Steel: Use beam clamps, machine bolts, or welded threaded studs.
7. Sheet Metal: Use sheet metal screws.

2.02 MANUFACTURERS

- A. Superstrut.
- B. Thomas & Betts Corporation: www.tnb.com.
- C. Threaded Rod Company: www.threadedrod.com.
- D. Unistrut.
- E. B-Line.
- F. Engineer approved equivalent.

2.03 MATERIALS

- A. Hangers, Supports, Anchors, and Fasteners - General: Corrosion-resistant materials of size and type as indicated on the Drawings, adequate to carry the loads of equipment and conduit, including weight of wire in conduit. Provide stainless steel materials in wet, damp, and corrosive areas.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements are as indicated.
- B. Verify that mounting surfaces are ready to receive support and attachment components.
- C. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Perform work in accordance with NECA 1 (general workmanship).
- C. Provide independent support from building structure. Do not provide support from piping, ductwork, or other systems.
- D. Unless specifically indicated or approved by Engineer, do not provide support from suspended ceiling support system or ceiling grid.
- E. Unless specifically indicated or approved by Engineer, do not provide support from roof deck.
- F. Do not penetrate or otherwise notch or cut structural members without approval of Structural Engineer.
- G. Equipment Support and Attachment:
 1. Use metal fabricated supports or supports assembled from metal channel (strut) to support equipment as required.
 2. Use metal channel (strut) secured to studs to support equipment surface-mounted on hollow stud walls when wall strength is not sufficient to resist pull-out.
 3. Use metal channel (strut) to support surface-mounted equipment in wet or damp locations to provide space between equipment and mounting surface.
 4. In wet and damp locations use stainless steel channel supports to stand cabinets, conduits, and panelboards 1/4" off wall.
 5. Unless otherwise indicated, mount floor-mounted equipment on properly sized 3-1/2 high concrete pad constructed in accordance with Section 03 3000.
 6. Securely fasten floor-mounted equipment. Do not install equipment such that it relies on its own weight for support.
- H. Secure fasteners according to manufacturer's recommended torque settings.

- I. Remove temporary supports.
- J. Install products in accordance with manufacturer's instructions.
- K. Install hangers and supports as required to adequately and securely support electrical system components, in a neat and workmanlike manner, as specified in NECA 1.
- L. Do not fasten supports to pipes, ducts, mechanical equipment, or conduit.
- M. Fabricate supports from structural steel or steel channel. Rigidly weld support members or use hexagon head bolts to present neat appearance with adequate strength and rigidity. Use spring lock washers under all nuts.
- N. Install surface-mounted cabinets and panelboards with minimum of four anchors.

3.03 FIELD QUALITY ASSURANCE

- A. Verify all supports are securely anchored and fastened.
- B. Verify all supports are level and square.

END OF SECTION 26 0529

SECTION 26 0533.13
CONDUIT FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Galvanized steel rigid metal conduit (RMC).
- B. PVC-coated galvanized steel rigid metal conduit (RMC).
- C. Flexible metal conduit (FMC).
- D. Liquidtight flexible metal conduit (LFMC).
- E. Rigid polyvinyl chloride (PVC) conduit.
- F. Conduit fittings.
- G. Accessories.

1.02 RELATED REQUIREMENTS

- A. Section 26 0526 - Grounding and Bonding for Electrical Systems.
 - 1. Includes additional requirements for fittings for grounding and bonding.
- B. Section 26 0529 - Hangers and Supports for Electrical Systems.
- C. Section 26 0533.16 - Boxes for Electrical Systems.
- D. Section 26 0553 - Identification for Electrical Systems: Identification products and requirements.
- E. Section 31 2316.13 - Trenching: Excavating, bedding, and backfilling.

1.03 REFERENCE STANDARDS

- A. ANSI C80.5 - American National Standard for Electrical Rigid Metal Conduit - Aluminum (ERMC-A).
- B. NECA 1 - Standard for Good Workmanship in Electrical Construction.
- C. NECA 101 - Standard for Installing Steel Conduits (Rigid, IMC, EMT).
- D. NECA 111 - Standard for Installing Nonmetallic Raceways (RNC, ENT, LFNC).
- E. NFPA 70 - National Electrical Code.
- F. UL 1 - Flexible Metal Conduit.
- G. UL 360 - Liquid-Tight Flexible Metal Conduit.
- H. UL 514B - Conduit, Tubing, and Cable Fittings.
- I. UL 651 - Schedule 40, 80, Type EB and A Rigid PVC Conduit and Fittings.
- J. UL 1203 - Explosion-Proof and Dust-Ignition-Proof Electrical Equipment for Use in Hazardous (Classified) Locations.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Coordinate minimum sizes of conduits with the actual conductors to be installed, including adjustments for conductor sizes increased for voltage drop.
 - 2. Coordinate the arrangement of conduits with structural members, ductwork, piping, equipment and other potential conflicts installed under other sections or by others.
 - 3. Verify exact conduit termination locations required for boxes, enclosures, and equipment installed under other sections or by others.
 - 4. Coordinate the work with other trades to provide roof penetrations that preserve the integrity of the roofing system and do not void the roof warranty.
 - 5. Notify Engineer of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.
- B. Sequencing:

1. Do not begin installation of conductors and cables until installation of conduit is complete between outlet, junction and splicing points.

1.05 SUBMITTALS

- A. See Section 01 3000 - ADMINISTRATIVE REQUIREMENTS for submittals procedures.
- B. Product Data: Provide for fittings and conduit.

1.06 QUALITY ASSURANCE

- A. Conform to requirements of NFPA 70.
- B. Products: Listed and classified by Underwriters Laboratories Inc. as suitable for purpose specified and shown.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Receive, inspect, handle, and store conduit and fittings in accordance with manufacturer's instructions.
- B. Accept conduit on site. Inspect for damage.
- C. Protect conduit from corrosion and entrance of debris by storing above grade. Provide appropriate covering.

1.08 WARRANTY

- A. Full warranty against defects in materials and workmanship for two years after substantial completion, including all parts, labor, and expenses.

PART 2 PRODUCTS

2.01 CONDUIT APPLICATIONS

- A. Do not use conduit and associated fittings for applications other than as permitted by NFPA 70 and product listing.
- B. Unless otherwise indicated and where not otherwise restricted, use the conduit types indicated for the specified applications. Where more than one listed application applies, comply with the most restrictive requirements. Where conduit type for a particular application is not specified, use aluminum rigid metal conduit.
- C. Underground:
 1. Under Slab on Grade: Use rigid PVC conduit.
 2. Exterior, Direct-Buried: Use rigid PVC conduit.
 3. Exterior, Embedded Within Concrete: Use rigid PVC conduit.
 4. Where rigid polyvinyl (PVC) conduit is provided, transition to galvanized steel rigid metal conduit or PVC-coated galvanized steel rigid metal conduit where emerging from underground.
- D. Interior, Damp or Wet Locations: Use galvanized steel rigid metal conduit.
- E. Exposed, Interior, Not Subject to Physical Damage: Use galvanized steel rigid metal conduit.
- F. Exposed, Interior, Subject to Physical Damage: Use galvanized steel rigid metal conduit.
 1. Locations subject to physical damage include, but are not limited to:
 - a. Where exposed below 8 feet, except within electrical and communication rooms or closets.
- G. Exposed, Exterior: Use galvanized steel rigid metal conduit.
- H. Corrosive Locations Above Ground: Use PVC-coated galvanized steel rigid metal conduit.
- I. Hazardous (Classified) Locations: Use galvanized steel rigid metal conduit or PVC-coated galvanized steel rigid metal conduit.
- J. Connections to Vibrating Equipment:
 1. Dry Locations: Use liquidtight flexible metal conduit.
 2. Damp, Wet, or Corrosive Locations: Use liquidtight flexible metal conduit.

3. Maximum Length: 3 feet unless otherwise indicated.
4. Vibrating equipment includes, but is not limited to:
 - a. Motors.

2.02 CONDUIT REQUIREMENTS

- A. Fittings for Grounding and Bonding: Also comply with Section 26 0526.
- B. Provide all conduit, fittings, supports, and accessories required for a complete raceway system.
- C. Provide products listed, classified, and labeled as suitable for the purpose intended.
- D. Minimum Conduit Size, Unless Otherwise Indicated:
 1. Branch Circuits: 3/4 inch (21 mm) trade size.
 2. Underground, Exterior: 1 inch (27 mm) trade size.
- E. Where conduit size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.

2.03 GALVANIZED STEEL RIGID METAL CONDUIT (RMC)

- A. Manufacturers:
 1. Allied Tube & Conduit, a division of Atkore International: www.alliedeg.com/#sle.
 2. Wheatland Tube, a division of Zekelman Industries: www.wheatland.com/#sle.
 3. Substitutions: See Section 01 6000 - Product Requirements.
- B. Description: NFPA 70, Type RMC galvanized steel rigid metal conduit complying with ANSI C80.1 and listed and labeled as complying with UL 6.
- C. Fittings:
 1. Non-Hazardous Locations: Use fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B.
 2. Hazardous (Classified) Locations: Use fittings listed and labeled as complying with UL 1203 for the classification of the installed location.
 3. Material: Use steel.
 4. Connectors and Couplings: Use threaded type fittings only. Threadless set screw and compression (gland) type fittings are not permitted.

2.04 PVC-COATED GALVANIZED STEEL RIGID METAL CONDUIT (RMC)

- A. Manufacturers:
 1. Allied Tube & Conduit: www.alliedtube.com.
 2. Anamet Inc.
 3. Engineer approved equivalent.
- B. Description: NFPA 70, Type RMC galvanized steel rigid metal conduit with external polyvinyl chloride (PVC) coating complying with NEMA RN 1 and listed and labeled as complying with UL 6.
- C. Exterior Coating: Polyvinyl chloride (PVC), nominal thickness of 40 mil.
- D. PVC-Coated Fittings:
 1. Manufacturer: Same as manufacturer of PVC-coated conduit to be installed.
 2. Non-Hazardous Locations: Use fittings listed and labeled as complying with UL 514B.
 3. Hazardous (Classified) Locations: Use fittings listed and labeled as complying with UL 1203 for the classification of the installed location.
 4. Material: Use steel or malleable iron.
 5. Exterior Coating: Polyvinyl chloride (PVC), minimum thickness of 40 mil.
- E. PVC-Coated Supports: Furnish with exterior coating of polyvinyl chloride (PVC), minimum thickness of 15 mil.
- F. Description: NEMA RN 1; rigid steel conduit with external PVC coating, 20 mil thick.
- G. Fittings and Conduit Bodies: NEMA FB 1; steel fittings with external PVC coating to match conduit.

2.05 FLEXIBLE METAL CONDUIT (FMC)

- A. Manufacturers:
 - 1. Anamet Inc.
 - 2. Carol Cable Co.
 - 3. Electri-Flex Company: www.electriflex.com/#sle.
 - 4. Engineer approved equivalent.
- B. Description: NFPA 70, Type FMC standard wall aluminum or reduced wall aluminum flexible metal conduit listed and labeled as complying with UL 1, and listed for use in classified firestop systems to be used.
- C. Fittings:
 - 1. Description: Fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B.
 - 2. Material: Use steel.
- D. Description: Interlocked aluminum construction.
- E. Fittings: NEMA FB 1.

2.06 LIQUIDTIGHT FLEXIBLE METALLIC AND NONMETALLIC CONDUIT

- A. Manufacturers:
 - 1. AFC Cable Systems, Inc: www.afcweb.com/#sle.
 - 2. Electri-Flex Company: www.electriflex.com/#sle.
 - 3. International Metal Hose: www.metalhose.com/#sle.
 - 4. Raco Inc.
 - 5. Engineer approved equivalent.
- B. Description: NFPA 70, Type LFMC polyvinyl chloride (PVC) jacketed aluminum flexible metal conduit listed and labeled as complying with UL 360.
- C. Fittings:
 - 1. Description: Fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B.
 - 2. Material: Use steel.
- D. Description: Interlocked aluminum construction with PVC jacket.
- E. Fittings: NEMA FB 1.

2.07 RIGID POLYVINYL CHLORIDE (PVC) CONDUIT

- A. Manufacturers:
 - 1. Carlon, a brand of Thomas & Betts Corporation: www.carlon.com/#sle.
 - 2. AFC Cable Systems, Inc: www.afcweb.com.
 - 3. Carlon.
 - 4. Electri-Flex Company: www.electriflex.com.
 - 5. Endot Ind.
 - 6. International Metal Hose: www.metalhose.com.
 - 7. Engineer approved equivalent.
- B. Description: NFPA 70, Type PVC rigid polyvinyl chloride conduit complying with NEMA TC 2 and listed and labeled as complying with UL 651; Schedule 40 unless otherwise indicated, Schedule 80 where subject to physical damage; rated for use with conductors rated 90 degrees C.
- C. Fittings:
 - 1. Manufacturer: Same as manufacturer of conduit to be connected.
 - 2. Description: Fittings complying with NEMA TC 3 and listed and labeled as complying with UL 651; material to match conduit.
- D. Rigid Plastic Conduit:
 - 1. Description: NEMA TC 2; Schedule 80 PVC.

2. Fittings and Conduit Bodies: NEMA TC 3.

2.08 ACCESSORIES

- A. Conduit Joint Compound: Corrosion-resistant, electrically conductive; suitable for use with the conduit to be installed.
- B. Solvent Cement for PVC Conduit and Fittings: As recommended by manufacturer of conduit and fittings to be installed.
- C. Pull Strings: Use nylon cord with average breaking strength of not less than 200 pound-force.
- D. Foam Conduit Sealant:
- E. Conduit Mechanical Seals:
- F. Sealing Compound for Hazardous/Classified Location Sealing Fittings: Listed for use with particular fittings to be installed.
- G. Sealing Compound for Sealing Fittings: Listed for use with the particular fittings to be installed.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine conduit to verify that it is free from damage.
- B. Examine conduit to verify it is free of foreign objects.
- C. Verify that field measurements are as indicated.
- D. Verify that mounting surfaces are ready to receive conduits.
- E. Verify that conditions are satisfactory for installation prior to starting work.
- F. Verify routing and termination locations of conduit prior to rough-in.
- G. Conduit routing is shown on drawings in approximate locations unless dimensioned. Route as required to complete wiring system.

3.02 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Perform work in accordance with NECA 1 (general workmanship).
- C. Install galvanized steel rigid metal conduit (RMC) in accordance with NECA 101.
- D. Install PVC-coated galvanized steel rigid metal conduit (RMC) using only tools approved by the manufacturer.
- E. Install rigid polyvinyl chloride (PVC) conduit in accordance with NECA 111.
- F. Conduit Routing:
 - 1. Unless dimensioned, conduit routing indicated is diagrammatic.
 - 2. When conduit destination is indicated without specific routing, determine exact routing required.
 - 3. Conduits in the following areas may be exposed, unless otherwise indicated:
 - a. Process areas.
 - b. Electrical rooms.
 - c. Mechanical equipment rooms.
 - d. Within joists in areas with no ceiling.
 - 4. Unless otherwise approved, do not route conduits exposed:
 - a. Across floors.
 - b. Across roofs.
 - c. Across top of parapet walls.
 - 5. Conduits installed underground or embedded in concrete may be routed in the shortest possible manner unless otherwise indicated. Route all other conduits parallel or perpendicular to building structure and surfaces, following surface contours where practical.

6. Arrange conduit to maintain adequate headroom, clearances, and access.
 7. Arrange conduit to provide no more than the equivalent of four 90 degree bends between pull points.
 8. Arrange conduit to prevent moisture traps. Provide drain fittings at low points and at sealing fittings where moisture may collect.
 9. Maintain minimum clearance of 12 inches between conduits and hot surfaces.
 10. Group parallel conduits in the same area together on a common rack.
- G. Conduit Support:
1. Secure and support conduits in accordance with NFPA 70 and Section 26 0529 using suitable supports and methods approved by the authority having jurisdiction.
 2. Provide independent support from building structure. Do not provide support from piping, ductwork, or other systems.
- H. Connections and Terminations:
1. Use approved zinc-rich paint or conduit joint compound on field-cut threads of galvanized steel conduits prior to making connections.
 2. Where two threaded conduits must be joined and neither can be rotated, use three-piece couplings or split couplings. Do not use running threads.
 3. Use suitable adapters where required to transition from one type of conduit to another.
 4. Provide drip loops for liquidtight flexible conduit connections to prevent drainage of liquid into connectors.
 5. Terminate threaded conduits in boxes and enclosures using threaded hubs or double lock nuts for dry locations and raintight hubs for wet locations.
 6. Where spare conduits stub up through concrete floors and are not terminated in a box or enclosure, provide threaded couplings equipped with threaded plugs set flush with finished floor.
 7. Provide insulating bushings or insulated throats at all conduit terminations to protect conductors.
 8. Secure joints and connections to provide maximum mechanical strength and electrical continuity.
- I. Penetrations:
1. Do not penetrate or otherwise notch or cut structural members, including footings and grade beams, without approval of Structural Engineer.
 2. Make penetrations perpendicular to surfaces unless otherwise indicated.
 3. Provide sleeves for penetrations as indicated or as required to facilitate installation. Set sleeves flush with exposed surfaces unless otherwise indicated or required.
 4. Conceal bends for conduit risers emerging above ground.
 5. Seal interior of conduits entering the building from underground at first accessible point to prevent entry of moisture and gases.
 6. Where conduits penetrate waterproof membrane, seal as required to maintain integrity of membrane.
 7. Make penetrations for roof-mounted equipment within associated equipment openings and curbs where possible to minimize roofing system penetrations. Where penetrations are necessary, seal as indicated or as required to preserve integrity of roofing system and maintain roof warranty. Include proposed locations of penetrations and methods for sealing with submittals.
- J. Underground Installation:
1. Provide trenching and backfilling in accordance with Section 31 2316.13.
 2. Minimum Cover, Unless Otherwise Indicated or Required:
 - a. Underground, Exterior: 24 inches.
 - b. Under Slab on Grade: 12 inches to bottom of slab.
- K. Hazardous (Classified) Locations: Where conduits cross boundaries of hazardous (classified) locations, provide sealing fittings located as indicated or in accordance with NFPA 70.

- L. Conduit Movement Provisions: Where conduits are subject to movement, provide expansion and expansion/deflection fittings with internal bonding jumpers to prevent damage to enclosed conductors or connected equipment. This includes, but is not limited to:
 - 1. Where conduits cross structural joints intended for expansion, contraction, or deflection.
 - 2. Where calculated in accordance with NFPA 70 for rigid polyvinyl chloride (PVC) conduit installed above ground to compensate for thermal expansion and contraction.
 - 3. Where conduits are subject to earth movement by settlement or frost.
- M. Condensation Prevention: Where conduits cross barriers between areas of potential substantial temperature differential, provide sealing fitting or approved sealing compound at an accessible point near the penetration to prevent condensation. This includes, but is not limited to:
 - 1. Where conduits pass from outdoors into conditioned interior spaces.
 - 2. Where conduits pass from unconditioned interior spaces into conditioned interior spaces.
- N. Provide pull string in all empty conduits and in conduits where conductors and cables are to be installed by others. Leave minimum slack of 12 inches at each end.
- O. Provide grounding and bonding in accordance with Section 26 0526.
- P. Identify conduits in accordance with Section 26 0553.

3.03 FIELD QUALITY CONTROL

- A. Repair cuts and abrasions in galvanized finishes using zinc-rich paint recommended by manufacturer. Replace components that exhibit signs of corrosion.
- B. Where coating of PVC-coated galvanized steel rigid metal conduit (RMC) contains cuts or abrasions, repair in accordance with manufacturer's instructions.
- C. Correct deficiencies and replace damaged or defective conduits.

3.04 CLEANING

- A. Clean interior of conduits to remove moisture and foreign matter.

3.05 PROTECTION

- A. Immediately after installation of conduit, use suitable manufactured plugs to provide protection from entry of moisture and foreign material and do not remove until ready for installation of conductors.

END OF SECTION 26 0533.13

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SECTION 26 0533.16
BOXES FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Outlet and device boxes up to 100 cubic inches, including those used as junction and pull boxes.
- B. Cabinets and enclosures, including junction and pull boxes larger than 100 cubic inches.
- C. Boxes for hazardous (classified) locations.
- D. Underground boxes/enclosures.
- E. Pull and junction boxes.

1.02 RELATED REQUIREMENTS

- A. Section 26 0526 - Grounding and Bonding for Electrical Systems.
- B. Section 26 0529 - Hangers and Supports for Electrical Systems.
- C. Section 26 0533.13 - Conduit for Electrical Systems:
- D. Section 26 0553 - Identification for Electrical Systems: Identification products and requirements.

1.03 REFERENCE STANDARDS

- A. NECA 1 - Standard for Good Workmanship in Electrical Construction.
- B. NECA 130 - Standard for Installing and Maintaining Wiring Devices.
- C. NEMA EN 10250 - Enclosures for Electrical Equipment (1000 Volts Maximum).
- D. NEMA FB 1 - Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit, Electrical Metallic Tubing, and Cable.
- E. NEMA OS 1 - Sheet-Steel Outlet Boxes, Device Boxes, Covers, and Box Supports.
- F. NEMA OS 2 - Nonmetallic Outlet Boxes, Device Boxes, Covers and Box Supports.
- G. NFPA 70 - National Electrical Code.
- H. SCTE 77 - Specifications for Underground Enclosure Integrity.
- I. UL 50 - Enclosures for Electrical Equipment, Non-Environmental Considerations.
- J. UL 50E - Enclosures for Electrical Equipment, Environmental Considerations.
- K. UL 508A - Industrial Control Panels.
- L. UL 514A - Metallic Outlet Boxes.
- M. UL 1203 - Explosion-Proof and Dust-Ignition-Proof Electrical Equipment for Use in Hazardous (Classified) Locations.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Coordinate the work with other trades to avoid placement of ductwork, piping, equipment, or other potential obstructions within the dedicated equipment spaces and working clearances for electrical equipment required by NFPA 70.
 - 2. Coordinate arrangement of electrical equipment with the dimensions and clearance requirements of the actual equipment to be installed.
 - 3. Coordinate minimum sizes of boxes with the actual installed arrangement of conductors, clamps, support fittings, and devices, calculated according to NFPA 70.
 - 4. Coordinate minimum sizes of pull boxes with the actual installed arrangement of connected conduits, calculated according to NFPA 70.
 - 5. Coordinate the placement of boxes with millwork, furniture, devices, equipment, etc. installed under other sections or by others.
 - 6. Coordinate the work with other trades to preserve insulation integrity.

7. Coordinate the work with other trades to provide walls suitable for installation of flush-mounted boxes where indicated.
8. Notify Engineer of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

1.05 SUBMITTALS

- A. See Section 01 3000 - ADMINISTRATIVE REQUIREMENTS, for submittal procedures.
- B. Product Data: Provide manufacturer's standard catalog pages and data sheets for outlet and device boxes, junction and pull boxes, cabinets and enclosures, boxes for hazardous (classified) locations, and underground boxes/enclosures.
- C. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 1. See Section 01 6000 - Product Requirements, for additional provisions.
 2. Keys for Lockable Enclosures: Two of each different key.

1.06 QUALITY ASSURANCE

- A. Manufacturer: Company specializing in manufacturing Products specified in this Section with minimum three years documented experience.
- B. Conform to requirements of NFPA 70.
- C. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.
- D. Products: Provide products listed and classified by Underwriters Laboratories Inc., as suitable for the purpose specified and indicated.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Receive, inspect, handle, and store products in accordance with manufacturer's instructions.

1.08 WARRANTY

- A. Full warranty against defects in materials and workmanship for two (2) years after substantial completion, including all parts, labor, and expenses.

PART 2 PRODUCTS

2.01 BOXES

- A. General Requirements:
 1. Do not use boxes and associated accessories for applications other than as permitted by NFPA 70 and product listing.
 2. Provide all boxes, fittings, supports, and accessories required for a complete raceway system and to accommodate devices and equipment to be installed.
 3. Provide products listed, classified, and labeled as suitable for the purpose intended.
 4. Where box size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.
 5. Provide grounding terminals within boxes where equipment grounding conductors terminate.
- B. Outlet and Device Boxes Up to 100 cubic inches, Including Those Used as Junction and Pull Boxes:
 1. Use sheet-steel boxes for dry locations unless otherwise indicated or required.
 2. Use cast iron boxes for damp or wet locations unless otherwise indicated or required; furnish with compatible weatherproof gasketed covers.
 3. Use cast iron boxes where exposed galvanized steel rigid metal conduit is used.
 4. Use suitable concrete type boxes where flush-mounted in concrete.
 5. Use suitable masonry type boxes where flush-mounted in masonry walls.
 6. Use raised covers suitable for the type of wall construction and device configuration where required.
 7. Use shallow boxes where required by the type of wall construction.
 8. Do not use "through-wall" boxes designed for access from both sides of wall.

9. Sheet-Steel Boxes: Comply with NEMA OS 1, and list and label as complying with UL 514A.
 10. Cast Metal Boxes: Comply with NEMA FB 1, and list and label as complying with UL 514A; furnish with threaded hubs.
 11. Boxes for Supporting Luminaires and Ceiling Fans: Listed as suitable for the type and weight of load to be supported; furnished with fixture stud to accommodate mounting of luminaire where required.
 12. Boxes for Ganged Devices: Use multigang boxes of single-piece construction. Do not use field-connected gangable boxes unless specifically indicated or permitted.
 13. Minimum Box Size, Unless Otherwise Indicated:
 - a. Wiring Devices (Other Than Communications Systems Outlets): 4 inch square by 1-1/2 inch deep (100 by 38 mm) trade size.
- C. Cabinets and Enclosures, Including Junction and Pull Boxes Larger Than 100 cubic inches:
1. Comply with NEMA EN 10250, and list and label as complying with UL 50 and UL 50E, or UL 508A.
 2. NEMA EN 10250 Environment Type, Unless Otherwise Indicated:
 - a. Indoor Clean, Dry Locations: Type 12, painted steel.
 - b. Outdoor and Wet/Damp Locations: Type 4X, stainless steel.
 3. Junction and Pull Boxes Larger Than 100 cubic inches:
 - a. Provide screw-cover or hinged-cover enclosures unless otherwise indicated.
 - b. Include cable supports if any dimension of the box is greater than 48 inches.
 - c. Boxes 6 square feet and Larger: Provide sectionalized screw-cover or hinged-cover enclosures.
 4. Cabinets and Hinged-Cover Enclosures, Other Than Junction and Pull Boxes:
 - a. Provide lockable hinged covers, all locks keyed alike unless otherwise indicated.
 - b. Back Panels: Painted steel, removable.
 5. Finish for Painted Steel Enclosures: Manufacturer's standard grey unless otherwise indicated.
- D. Boxes for Hazardous (Classified) Locations: Listed and labeled as complying with UL 1203 for the classification of the installed location.
1. Manufacturers:
 - a. Cooper Crouse-Hinds, a division of Eaton Corporation: www.cooperindustries.com/#sle.
 - b. Hubbell Incorporated; Killark Products: www.hubbell-killark.com/#sle.
- E. Underground Boxes/Enclosures:
1. Description: In-ground, open bottom boxes furnished with flush, non-skid covers with legend indicating type of service and stainless steel tamper resistant cover bolts.
 2. Depth: As required to extend below frost line to prevent frost upheaval, but not less than 12 inches.
 3. Provide logo on cover to indicate type of service.
 4. Applications:
 - a. Do not use polymer concrete enclosures in areas subject to deliberate vehicular traffic.
 5. Polymer Concrete Underground Boxes/Enclosures: Comply with SCTE 77.
 - a. Manufacturers:
 - 1) Hubbell Incorporated; Quazite Products: www.hubbellpowersystems.com/#sle.
 - 2) Oldcastle Precast, Inc: www.oldcastleprecast.com/#sle.
 - 3) Substitutions: See Section 01 6000 - Product Requirements.
 - b. Combination fiberglass/polymer concrete boxes/enclosures are not acceptable. Use all-polymer concrete boxes/enclosures.

2.02 PULL AND JUNCTION BOXES

- A. Surface Mounted Cast Metal Box: NEMA 250, Type 6; flat-flanged, surface mounted junction box:
1. Material: Galvanized cast iron.
 2. Cover: Furnish with ground flange, neoprene gasket, and stainless steel cover screws.

3. Cover Legend: "ELECTRIC".

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements are as indicated.
- B. Verify that mounting surfaces are ready to receive boxes.
- C. Verify that conditions are satisfactory for installation prior to starting work.
- D. Examine prints for locations of all outlets.
- E. Verify rooms and walls are ready to accept boxes.
- F. Verify field measurements are as shown on Drawings.
- G. Verify locations of floor boxes and outlets in offices and work areas prior to rough-in.

3.02 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Install boxes in accordance with NECA 1 (general workmanship) and, where applicable, NECA 130, including mounting heights specified in those standards where mounting heights are not indicated.
- C. Arrange equipment to provide minimum clearances in accordance with manufacturer's instructions and NFPA 70.
- D. Unless otherwise indicated, provide separate boxes for line voltage and low voltage systems.
- E. Flush-mount boxes in finished areas unless specifically indicated to be surface-mounted.
- F. Unless otherwise indicated, boxes may be surface-mounted where exposed conduits are indicated or permitted.
- G. Box Locations:
 - 1. Unless dimensioned, box locations indicated are approximate.
 - 2. Locate boxes as required for devices installed under other sections or by others.
 - 3. Locate boxes so that wall plates do not span different building finishes.
 - 4. Locate boxes so that wall plates do not cross masonry joints.
 - 5. Unless otherwise indicated, where multiple outlet boxes are installed at the same location at different mounting heights, install along a common vertical center line.
 - 6. Do not install flush-mounted boxes on opposite sides of walls back-to-back. Provide minimum 6 inches horizontal separation unless otherwise indicated.
 - 7. Fire Resistance Rated Walls: Install flush-mounted boxes such that the required fire resistance will not be reduced.
 - a. Do not install flush-mounted boxes on opposite sides of walls back-to-back; provide minimum 24 inches separation where wall is constructed with individual noncommunicating stud cavities or protect both boxes with listed putty pads.
 - 8. Locate junction and pull boxes as indicated, as required to facilitate installation of conductors, and to limit conduit length and/or number of bends between pulling points in accordance with Section 26 0533.13.
 - 9. Locate junction and pull boxes in the following areas, unless otherwise indicated:
 - a. Concealed above accessible suspended ceilings.
 - b. Within joists in areas with no ceiling.
 - c. Electrical rooms.
 - d. Mechanical equipment rooms.
- H. Box Supports:
 - 1. Secure and support boxes in accordance with NFPA 70 and Section 26 0529 using suitable supports and methods approved by the authority having jurisdiction.

2. Provide independent support from building structure except for cast metal boxes (other than boxes used for fixture support) supported by threaded conduit connections in accordance with NFPA 70. Do not provide support from piping, ductwork, or other systems.
- I. Install boxes plumb and level.
- J. Install boxes as required to preserve insulation integrity.
- K. Underground Boxes/Enclosures:
 1. Install enclosure on gravel base, minimum 6 inches deep.
 2. Flush-mount enclosures located in concrete or paved areas.
 3. Mount enclosures located in landscaped areas with top at 1 inch above finished grade.
 4. Install additional bracing inside enclosures in accordance with manufacturer's instructions to minimize box sidewall deflections during backfilling. Backfill with cover bolted in place.
- L. Install permanent barrier between ganged wiring devices when voltage between adjacent devices exceeds 300 V.
- M. Install firestopping to preserve fire resistance rating of partitions and other elements, using materials and methods specified in Section 07 8400.
- N. Close unused box openings.
- O. Install blank wall plates on junction boxes and on outlet boxes with no devices or equipment installed or designated for future use.
- P. Provide grounding and bonding in accordance with Section 26 0526.
- Q. Identify boxes in accordance with Section 26 0553.
- R. Install in locations as shown on Drawings, and as required for splices, taps, wire pulling, equipment connections, and as required by NFPA 70.
- S. Electrical boxes are shown on Drawings in approximate locations unless dimensioned.
 1. Adjust box locations up to 10 feet if required to accommodate intended purpose.
- T. Maintain headroom and present neat mechanical appearance.
- U. Install pull boxes and junction boxes above accessible ceilings and in unfinished areas only.
- V. Align adjacent wall mounted outlet boxes for switches, thermostats, and similar devices.
- W. Secure flush mounting box to interior wall and partition studs. Accurately position to allow for surface finish thickness.
- X. Use stamped steel bridges to fasten flush mounting outlet box between studs.
- Y. Install flush mounting box without damaging wall insulation or reducing its effectiveness.
- Z. Use adjustable steel channel fasteners for hung ceiling outlet box.
- AA. Support boxes independently of conduit, except cast box that is connected to two rigid metal conduits both supported within 12 inches of box.

3.03 ADJUSTING

- A. Adjust flush-mounting outlets to make front flush with finished wall material.
- B. Install knockout closures in unused box openings.

3.04 CLEANING

- A. Clean interior of boxes to remove dirt, debris, plaster and other foreign material.

3.05 PROTECTION

- A. Immediately after installation, protect boxes from entry of moisture and foreign material until ready for installation of conductors.

3.06 INTERFACE WITH OTHER PRODUCTS

- A. Coordinate installation of outlet box.

- B. Coordinate locations and sizes of required access doors.
- C. Locate flush mounting box in masonry wall to require cutting of masonry unit corner only.
Coordinate masonry cutting to achieve neat opening.
- D. Coordinate mounting heights and locations of outlets mounted above counters, benches and backsplashes.
- E. Position outlet boxes to locate luminaires as shown on reflected ceiling plan.

END OF SECTION 26 0533.16

**SECTION 26 0553
IDENTIFICATION FOR ELECTRICAL SYSTEMS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Electrical identification requirements.
- B. Identification nameplates and labels.
- C. Wire and cable markers.
- D. Underground warning tape.
- E. Warning signs and labels.

1.02 RELATED REQUIREMENTS

- A. Section 26 0519 - LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES: Color coding for power conductors and cables 600 V and less; vinyl color coding electrical tape.
- B. Section 26 0573 - Power System Studies: Arc flash hazard warning labels.

1.03 REFERENCE STANDARDS

- A. ANSI Z535.2 - American National Standard for Environmental and Facility Safety Signs.
- B. ANSI Z535.4 - American National Standard for Product Safety Signs and Labels.
- C. NFPA 70 - National Electrical Code.
- D. NFPA 70E - Standard for Electrical Safety in the Workplace.
- E. UL 969 - Marking and Labeling Systems.

1.04 SUBMITTALS

- A. See Section 01 3000 - ADMINISTRATIVE REQUIREMENTS for submittals procedures.
- B. Product Data: Provide catalog data for nameplates, labels, and markers.
- C. Manufacturer's Instructions: Indicate application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation and installation of product.

1.05 QUALITY ASSURANCE

- A. Conform to requirements of NFPA 70.

PART 2 PRODUCTS

2.01 IDENTIFICATION REQUIREMENTS

- A. Existing Work: Unless specifically excluded, identify existing elements to remain that are not already identified in accordance with specified requirements.
- B. Identification for Equipment:
 - 1. Use identification nameplate to identify each piece of electrical distribution and control equipment and associated sections, compartments, and components.
 - a. Panelboards:
 - 1) Identify ampere rating.
 - 2) Identify voltage and phase.
 - 3) Identify panelboard name.
 - 4) Identify power source and circuit number. Include location when not within sight of equipment.
 - 5) Use typewritten circuit directory to identify load(s) served for panelboards with a door. Do not identify spares and spaces.
 - 6) For power panelboards without a door, use identification nameplate to identify load(s) served for each branch device. Do not identify spares and spaces.
 - b. Enclosed switches, circuit breakers, and motor controllers:

- 1) Identify load(s) served. Include location when not within sight of equipment.
 2. Available Fault Current Documentation: Use identification label to identify the available fault current and date calculations were performed at locations requiring documentation by NFPA 70 including but not limited to the following.
 - a. Service equipment.
 - b. Industrial control panels.
 - c. Motor control centers.
 - d. Industrial machinery.
 3. Arc Flash Hazard Warning Labels: Use warning labels to identify arc flash hazards for electrical equipment, such as switchboards, panelboards, industrial control panels, meter socket enclosures, and motor control centers that are likely to require examination, adjustment, servicing, or maintenance while energized.
 - a. Legend: Include orange header that reads "WARNING", followed by the word message "Arc Flash and Shock Hazard; Appropriate PPE Required; Do not operate controls or open covers without appropriate personal protection equipment; Failure to comply may result in injury or death; Refer to NFPA 70E for minimum PPE requirements" or approved equivalent.
- C. Identification for Conductors and Cables:
1. Color Coding for Power Conductors 600 V and Less: Comply with Section 26 0519.
 2. Use identification nameplate or identification label to identify color code for ungrounded and grounded power conductors inside door or enclosure at each piece of feeder or branch-circuit distribution equipment when premises has feeders or branch circuits served by more than one nominal voltage system.
- D. Identification for Raceways:
1. Use underground warning tape to identify underground raceways.
- E. Identification for Boxes:
1. Use handwritten text using indelible marker to identify circuits enclosed.
 - a. For exposed boxes, provide identification on inside face of cover.
- F. Identification for Devices:
1. Wiring Device and Wallplate Finishes: Comply with Section 26 2726.

2.02 IDENTIFICATION NAMEPLATES AND LABELS

- A. Identification Nameplates:
1. Manufacturers:
 - a. Brimar Industries, Inc: www.brimar.com/#sle.
 - b. Kolbi Pipe Marker Co: www.kolbipipemarkers.com/#sle.
 - c. Seton Identification Products: www.seton.com/#sle.
 2. Materials:
 - a. Indoor Clean, Dry Locations: Use plastic nameplates.
 3. Plastic Nameplates: Two-layer or three-layer laminated acrylic or electrically non-conductive phenolic with beveled edges; minimum thickness of 1/16 inch; engraved text.
 - a. Color: White text on black background.
 4. Mounting Holes for Mechanical Fasteners: Two, centered on sides for sizes up to 1 inch high; Four, located at corners for larger sizes.
- B. Identification Labels:
1. Manufacturers:
 - a. Brady Corporation: www.bradyid.com/#sle.
 - b. Brother International Corporation: www.brother-usa.com/#sle.
 - c. Panduit Corp: www.panduit.com/#sle.
 2. Materials: Use self-adhesive laminated plastic labels; UV, chemical, water, heat, and abrasion resistant.
 - a. Use only for indoor locations.

3. Text: Use factory pre-printed or machine-printed text. Do not use handwritten text unless otherwise indicated.
- C. Format for Equipment Identification:
 1. Plastic Nameplates: Minimum Size: 1 inch by 2.5 inches.
 2. Identification Labels: 0.5 inch by 2.5 inches.
 3. Legend:
 - a. Equipment designation or other approved description.
 4. Text: All capitalized unless otherwise indicated.
 5. Minimum Text Height:
 - a. Equipment Designation: 3/8 inch.
 6. Color:
 - a. Normal Power System: White text on black background.

2.03 WIRE AND CABLE MARKERS

- A. Markers for Conductors and Cables: Use wrap-around self-adhesive vinyl cloth, wrap-around self-adhesive vinyl self-laminating, heat-shrink sleeve, plastic sleeve, plastic clip-on, or vinyl split sleeve type markers suitable for the conductor or cable to be identified.
- B. Markers for Conductor and Cable Bundles: Use plastic marker tags secured by nylon cable ties.
- C. Legend: Power source and circuit number or other designation indicated.
- D. Text: Use factory pre-printed or machine-printed text, all capitalized unless otherwise indicated.
- E. Minimum Text Height: 1/8 inch.
- F. Color: Black text on white background unless otherwise indicated.
- G. Description: split sleeve type wire markers.
- H. Locations: Each conductor at motor control centers, control panels, panelboard gutters, pull boxes, and junction boxes at each load connection.
- I. Legend:
 1. Power and Lighting Circuits: Branch circuit or feeder number indicated on drawings.
 2. Control Circuits: Control wire number indicated on shop drawings.

2.04 UNDERGROUND WARNING TAPE

- A. Materials: Use foil-backed detectable type polyethylene tape suitable for direct burial, unless otherwise indicated.
- B. Foil-backed Detectable Type Tape: 3 inches wide, with minimum thickness of 5 mil, unless otherwise required for proper detection.
- C. Legend: Type of service, continuously repeated over full length of tape.
- D. Color:
 1. Tape for Buried Power Lines: Black text on red background.
 2. Tape for Buried Communication, Alarm, and Signal Lines: Black text on orange background.

2.05 WARNING SIGNS AND LABELS

- A. Comply with ANSI Z535.2 or ANSI Z535.4 as applicable.
- B. Warning Signs:
 1. Materials:
 - a. Indoor Dry, Clean Locations: Use factory pre-printed rigid plastic or self-adhesive vinyl signs.
 - b. Outdoor Locations: Use factory pre-printed rigid aluminum signs.
 2. Rigid Signs: Provide four mounting holes at corners for mechanical fasteners.
 3. Minimum Size: 7 by 10 inches unless otherwise indicated.
- C. Warning Labels:

1. Materials: Use factory pre-printed or machine-printed self-adhesive polyester or self-adhesive vinyl labels; UV, chemical, water, heat, and abrasion resistant; produced using materials recognized to UL 969.
 2. Machine-Printed Labels: Use thermal transfer process printing machines and accessories recommended by label manufacturer.
 3. Minimum Size: 2 by 4 inches unless otherwise indicated.
- D. Description: 4 inch wide polyethylene tape, detectable type colored red with suitable warning legend describing buried electrical lines.

PART 3 EXECUTION

3.01 PREPARATION

- A. Clean surfaces to receive adhesive products according to manufacturer's instructions.
- B. Degrease and clean surfaces to receive nameplates and labels.

3.02 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Install identification products to be plainly visible for examination, adjustment, servicing, and maintenance. Unless otherwise indicated, locate products as follows:
 1. Surface-Mounted Equipment: Enclosure front.
 2. Flush-Mounted Equipment: Inside of equipment door.
 3. Free-Standing Equipment: Enclosure front; also enclosure rear for equipment with rear access.
 4. Elevated Equipment: Legible from the floor or working platform.
 5. Branch Devices: Adjacent to device.
 6. Interior Components: Legible from the point of access.
 7. Conduits: Legible from the floor.
 8. Boxes: Outside face of cover.
 9. Conductors and Cables: Legible from the point of access.
 10. Devices: Outside face of cover.
- C. Install identification products centered, level, and parallel with lines of item being identified.
- D. Secure nameplates to exterior surfaces of enclosures using stainless steel screws and to interior surfaces using self-adhesive backing or epoxy cement.
- E. Install self-adhesive labels and markers to achieve maximum adhesion, with no bubbles or wrinkles and edges properly sealed.
- F. Install underground warning tape above buried lines with one tape per trench at 6 inch(es) below finished grade.
- G. Secure rigid signs using stainless steel screws.
- H. Mark all handwritten text, where permitted, to be neat and legible.

3.03 FIELD QUALITY CONTROL

- A. See Section 01 4000 - Quality Requirements, for additional requirements.
- B. Replace self-adhesive labels and markers that exhibit bubbles, wrinkles, curling or other signs of improper adhesion.
- C. Install nameplates and labels parallel to equipment lines.

END OF SECTION 26 0553

**SECTION 26 0573
POWER SYSTEM STUDIES**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Short-circuit study.
- B. Protective device coordination study.
- C. Arc flash and shock risk assessment.
 - 1. Includes arc flash hazard warning labels.
- D. Criteria for the selection and adjustment of equipment and associated protective devices not specified in this section, as determined by studies to be performed.

1.02 RELATED REQUIREMENTS

- A. Section 26 0553 - Identification for Electrical Systems: Additional requirements for arc flash hazard warning labels.

1.03 REFERENCE STANDARDS

- A. ANSI Z535.4 - American National Standard for Product Safety Signs and Labels.
- B. IEEE 141 - IEEE Recommended Practice for Electric Power Distribution for Industrial Plants.
- C. IEEE 242 - IEEE Recommended Practice for Protection and Coordination of Industrial and Commercial Power Systems.
- D. IEEE 399 - IEEE Recommended Practice for Industrial and Commercial Power Systems Analysis.
- E. IEEE 551 - IEEE Recommended Practice for Calculating Short-Circuit Currents in Industrial and Commercial Power Systems.
- F. IEEE 1584 - IEEE Guide for Performing Arc-Flash Hazard Calculations.
- G. NEMA MG 00001 - Motors and Generators.
- H. NETA ATS - Standard for Acceptance Testing Specifications for Electrical Power Equipment And Systems.
- I. NFPA 70 - National Electrical Code.
- J. NFPA 70E - Standard for Electrical Safety in the Workplace.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Existing Installations: Coordinate with equipment manufacturer(s) to obtain data necessary for completion of studies.
 - 2. Coordinate the work to provide equipment and associated protective devices complying with criteria for selection and adjustment, as determined by studies to be performed.
 - 3. Notify Engineer of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.
- B. Sequencing:
 - 1. Submit study reports prior to or concurrent with product submittals.
 - 2. Do not order equipment until matching study reports and product submittals have both been evaluated by Engineer.

1.05 SUBMITTALS

- A. See Section 01 3000 - ADMINISTRATIVE REQUIREMENTS, for submittal procedures.
- B. Study preparer's qualifications.
- C. Field testing agency's qualifications.
- D. Study reports, stamped or sealed and signed by study preparer.

- E. Field quality control reports.
- F. Certification that field adjustable protective devices have been set in accordance with requirements of studies.
- G. Project Record Documents: Revise studies as required to reflect as-built conditions.
 - 1. Include hard copies with operation and maintenance data submittals.
 - 2. Include computer software files used to prepare studies with file name(s) cross-referenced to specific pieces of equipment and systems.

1.06 POWER SYSTEM STUDIES

- A. Scope of Studies:
 - 1. Perform analysis of both new and directly affected existing portions of electrical distribution system.
 - 2. Except where study descriptions below indicate exclusions, analyze system at each bus from primary protective devices of utility source down to each piece of equipment involved, including parts of system affecting calculations being performed (e.g. fault current contribution from motors).
- B. General Study Requirements:
 - 1. Comply with NFPA 70.
 - 2. Perform studies utilizing computer software complying with specified requirements; manual calculations are not permitted.
- C. Data Collection:
 - 1. Compile information on project-specific characteristics of actual installed equipment, protective devices, feeders, etc. as necessary to develop single-line diagram of electrical distribution system and associated input data for use in system modeling.
 - a. Motors: Include manufacturer/model, type (e.g. induction, synchronous), horsepower rating, voltage rating, full load amps, and locked rotor current or NEMA MG 00001 code letter designation.
 - b. Transformers: Include primary and secondary voltage ratings, kVA rating, winding configuration, percent impedance, and X/R ratio.
 - c. Protective Devices:
 - 1) Circuit Breakers: Include manufacturer/model, type (e.g. thermal magnetic, electronic trip), frame size, trip rating, voltage rating, interrupting rating, available field-adjustable trip response settings, and features (e.g. zone selective interlocking).
 - 2) Fuses: Include manufacturer/model, type/class (e.g. Class J), size/rating, and speed (e.g. time delay, fast acting).
 - d. Protective Relays: Include manufacturer/model, type, settings, current/potential transformer ratio, and associated protective device.
 - e. Conductors: Include feeder size, material (e.g. copper, aluminum), insulation type, voltage rating, number per phase, raceway type, and actual length.
 - 2. Existing Installations:
 - a. Provide the services of field testing agency or equipment manufacturer's representative to perform field data collection.
 - b. Collect data on existing electrical distribution system necessary for completion of studies, including field verification of available existing data (e.g. construction documents, previous studies). Include actual settings for field-adjustable devices.
- D. Short-Circuit Study:
 - 1. Comply with IEEE 551 and applicable portions of IEEE 141, IEEE 242, and IEEE 399.
 - 2. For purposes of determining equipment short circuit current ratings, consider conditions that may result in maximum available fault current, including but not limited to:
 - a. Maximum utility fault currents.
 - b. Maximum motor contribution.

- c. Known operating modes (e.g. utility as source, generator as source, utility/generator in parallel, bus tie breaker open/close positions).
 3. For each bus location, calculate the maximum available three-phase bolted symmetrical and asymmetrical fault currents. For grounded systems, also calculate the maximum available line-to-ground bolted fault currents.
- E. Protective Device Coordination Study:
 1. Comply with applicable portions of IEEE 242 and IEEE 399.
 2. Analyze alternate scenarios considering known operating modes (e.g. utility as source, generator as source, utility/generator in parallel, bus tie breaker open/close positions).
 3. Analyze protective devices and associated settings for suitable margins between time-current curves to achieve full selective coordination while providing adequate protection for equipment and conductors.
- F. Arc Flash and Shock Risk Assessment:
 1. Comply with NFPA 70E.
 2. Perform incident energy and arc flash boundary calculations in accordance with IEEE 1584 (as referenced in NFPA 70E Annex D), where applicable.
 - a. To clarify IEEE 1584 statement that "equipment below 240 V need not be considered unless it involves at least one 125 kVA or larger low-impedance transformer in its immediate power supply" for purposes of studies, study preparer to include equipment rated less than 240 V fed by transformers less than 125 kVA in calculations.
 - b. Where reasonable, study preparer may assume a maximum clearing time of two seconds in accordance with IEEE 1584, provided that the conditions are such that a worker's egress from an arc flash event would not be inhibited.
 - c. For single-phase systems, study preparer to perform calculations assuming three-phase system in accordance with IEEE 1584 yielding conservative results.
 3. Analyze alternate scenarios considering conditions that may result in maximum incident energy, including but not limited to:
 - a. Maximum and minimum utility fault currents.
 - b. Maximum and minimum motor contribution.
 - c. Known operating modes (e.g. utility as source, generator as source, utility/generator in parallel, bus tie breaker open/close positions).
- G. Study Reports:
 1. General Requirements:
 - a. Identify date of study and study preparer.
 - b. Identify study methodology and software product(s) used.
 - c. Identify scope of studies, assumptions made, implications of possible alternate scenarios, and any exclusions from studies.
 - d. Identify base used for per unit values.
 - e. Include single-line diagram and associated input data used for studies; identify buses on single-line diagram as referenced in reports, and indicate bus voltage.
 - f. Include conclusions and recommendations.
 2. Short-Circuit Study:
 - a. For each scenario, identify at each bus location:
 - 1) Calculated maximum available symmetrical and asymmetrical fault currents (both three-phase and line-to-ground where applicable).
 - 2) Fault point X/R ratio.
 - 3) Associated equipment short circuit current ratings.
 - b. Identify locations where the available fault current exceeds the equipment short circuit current rating, along with recommendations.
 3. Protective Device Coordination Study:
 - a. For each scenario, include time-current coordination curves plotted on log-log scale graphs.

- b. For each graph include (where applicable):
 - 1) Partial single-line diagram identifying the portion of the system illustrated.
 - 2) Protective Devices: Time-current curves with applicable tolerance bands for each protective device in series back to the source, plotted up to the maximum available fault current at the associated bus.
 - 3) Conductors: Damage curves.
 - 4) Transformers: Inrush points and damage curves.
 - 5) Generators: Full load current, overload curves, decrement curves, and short circuit withstand points.
 - 6) Motors: Full load current, starting curves, and damage curves.
 - 7) Capacitors: Full load current and damage curves.
 - c. For each protective device, identify fixed and adjustable characteristics with available ranges and recommended settings.
 - 1) Circuit Breakers: Include long time pickup and delay, short time pickup and delay, and instantaneous pickup.
 - 2) Include ground fault pickup and delay.
 - 3) Include fuse ratings.
 - 4) Protective Relays: Include current/potential transformer ratios, tap, time dial, and instantaneous pickup.
 - d. Identify cases where either full selective coordination or adequate protection is not achieved, along with recommendations.
4. Arc Flash and Shock Risk Assessment:
- a. For each scenario, identify at each bus location:
 - b. For purposes of producing arc flash hazard warning labels, summarize the maximum incident energy and associated data reflecting the worst case condition of all scenarios at each bus location.
 - c. Identify locations where the calculated maximum incident energy exceeds 40 calories per sq cm.

1.07 QUALITY ASSURANCE

- A. Study Preparer Qualifications: Professional electrical engineer licensed in State where project is located and with minimum five years experience in the preparation of studies of similar type and complexity using specified computer software.
 - 1. Study preparer may be employed by the manufacturer of the electrical distribution equipment.
 - 2. Study preparer may be employed by field testing agency.
- B. Field Testing Agency Qualifications: Independent testing organization specializing in testing, analysis, and maintenance of electrical systems with minimum five years experience; NETA Accredited Company.
- C. Computer Software for Study Preparation: Use the latest edition of commercially available software utilizing specified methodologies.
 - 1. Acceptable Software Products:
 - a. EasyPower LLC: www.easypower.com/#sle.
 - b. ETAP/Operation Technology, Inc: www.etap.com/#sle.
 - c. Power Analytics Corporation: www.poweranalytics.com/#sle.
 - d. SKM Systems Analysis, Inc: www.skm.com/#sle.

PART 2 PRODUCTS

2.01 ARC FLASH HAZARD WARNING LABELS

- A. Provide warning labels complying with ANSI Z535.4 to identify arc flash hazards for each work location analyzed by the arc flash and shock risk assessment.
 - 1. Materials: Comply with Section 26 0553.
 - 2. Minimum Size: 4 by 6 inches.

3. Legend: Provide custom legend in accordance with NFPA 70E based on equipment-specific data as determined by arc flash and shock risk assessment.
 - a. Include orange header that reads "WARNING" where calculated incident energy is less than 40 calories per square cm.
 - b. Include red header that reads "DANGER" where calculated incident energy is 40 calories per square cm or greater.
 - c. Include the text "Arc Flash and Shock Hazard; Appropriate PPE Required" or approved equivalent.
 - d. Include the following information:
 - 1) Arc flash boundary.
 - 2) Available incident energy and corresponding working distance.
 - 3) Site-specific PPE (personnel protective equipment) requirements.
 - 4) Nominal system voltage.
 - 5) Limited approach boundary.
 - 6) Restricted approach boundary.
 - 7) Equipment identification.
 - 8) Date calculations were performed.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install arc flash warning labels in accordance with Section 26 0553.

3.02 FIELD QUALITY CONTROL

- A. See Section 01 4000 - Quality Requirements, for additional requirements.
- B. Provide the services of field testing agency or equipment manufacturer's representative to perform inspection, testing, and adjusting. All on-site work shall be performed by or directly supervised by a Level 3 or Level 4 NETA certified technician.
- C. Inspect and test in accordance with NETA ATS, except Section 4.
- D. Adjust equipment and protective devices for compliance with studies and recommended settings.
- E. Notify Engineer of any conflicts with or deviations from studies. Obtain direction before proceeding.
- F. Submit detailed reports indicating inspection and testing results, and final adjusted settings.

3.03 CLOSEOUT ACTIVITIES

- A. See Section 01 7800 - Closeout Submittals, for closeout submittals.

END OF SECTION 26 0573

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**SECTION 26 2726
WIRING DEVICES**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Wall switches.
- B. Wall plates and covers.

1.02 RELATED REQUIREMENTS

- A. Section 26 0526 - Grounding and Bonding for Electrical Systems.
- B. Section 26 0533.16 - Boxes for Electrical Systems.
- C. Section 26 0553 - Identification for Electrical Systems: Identification products and requirements.

1.03 REFERENCE STANDARDS

- A. FS W-S-896 - Switches, Toggle (Toggle and Lock), Flush Mounted (General Specification).
- B. NECA 1 - Standard for Good Workmanship in Electrical Construction.
- C. NECA 130 - Standard for Installing and Maintaining Wiring Devices.
- D. NEMA WD 1 - General Color Requirements for Wiring Devices.
- E. NEMA WD 6 - Wiring Devices - Dimensional Specifications.
- F. NFPA 70 - National Electrical Code.
- G. UL 20 - General-Use Snap Switches.
- H. UL 514D - Cover Plates for Flush-Mounted Wiring Devices.
- I. UL 943 - Ground-Fault Circuit-Interrupters.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Coordinate the placement of outlet boxes with millwork, furniture, equipment, etc. installed under other sections or by others.
 - 2. Coordinate wiring device ratings and configurations with the electrical requirements of actual equipment to be installed.
 - 3. Coordinate the installation and preparation of uneven surfaces, such as split face block, to provide suitable surface for installation of wiring devices.
 - 4. Notify Engineer of any conflicts or deviations from Contract Documents to obtain direction prior to proceeding with work.
- B. Sequencing:

1.05 SUBMITTALS

- A. See Section 01 3000 - ADMINISTRATIVE REQUIREMENTS, for submittal procedures.
- B. Product Data: Provide manufacturer's catalog information showing dimensions, colors, and configurations.
- C. Project Record Documents: Record actual installed locations of wiring devices.

1.06 QUALITY ASSURANCE

- A. Comply with requirements of NFPA 70.
- B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
- C. Products: Listed, classified, and labeled as suitable for the purpose intended.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Store wiring devices in a dry location.

- B. Store in such a manner that the wiring devices will not be damaged.

1.08 WARRANTY

- A. Full warranty against defects in materials and workmanship for two years after substantial completion, including all parts, labor, and expenses.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. GE Wiring Devices.
- B. Hubbell.
- C. Leviton Manufacturing, Inc.
- D. Pass & Seymour.
- E. Engineer approved equivalent.

2.02 WIRING DEVICE FINISHES

- A. Provide wiring device finishes as described below unless otherwise indicated.
- B. Wiring Devices Installed in Finished Spaces: Ivory with stainless steel wall plate.
- C. Wiring Devices Installed in Unfinished Spaces: Ivory with galvanized steel wall plate.
- D. Wiring Devices Installed in Wet or Damp Locations: Ivory with specified weatherproof cover.

2.03 ALL WIRING DEVICES

- A. Provide products listed and classified by Underwriters Laboratories Inc. as suitable for the purpose specified and indicated.

2.04 WALL SWITCHES

- A. Wall Switches - General Requirements: AC only, quiet operating, general-use snap switches with silver alloy contacts, complying with NEMA WD 1 and NEMA WD 6, and listed as complying with UL 20 and where applicable FS W-S-896; types as indicated on the drawings.
 - 1. Wiring Provisions: Terminal screws for side wiring and screw actuated binding clamp for back wiring with separate ground terminal screw.
- B. Standard Wall Switches: Industrial specification grade, 20 A, 120/277 V with standard toggle type switch actuator and maintained contacts; single pole single throw, double pole single throw, three way, or four way as indicated on the drawings.
- C. Pilot Light Wall Switches: Industrial specification grade, 20 A, 120/277 V with red illuminated standard toggle type switch actuator and maintained contacts; illuminated with load on; single pole single throw, double pole single throw, three way, or four way as indicated on the drawings.

2.05 WALL PLATES AND COVERS

- A. Wall Plates: Comply with UL 514D.
 - 1. Configuration: One piece cover as required for quantity and types of corresponding wiring devices.
 - 2. Size: Standard.
 - 3. Screws: Metal with slotted heads finished to match wall plate finish.
- B. Stainless Steel Wall Plates: Brushed satin finish, Type 302 stainless steel.
- C. Galvanized Steel Wall Plates: Rounded corners and edges, with corrosion resistant screws.
- D. Weatherproof Receptacle Covers for Wet or Damp Locations: Gasketed, cast aluminum, with hinged lockable cover and corrosion-resistant screws; listed as suitable for use in wet locations while in use with attachment plugs connected and identified as extra-duty type.
- E. Exterior Locations: Weatherproof coverplate gasket with gasketed device cover which maintain weatherproof integrity when in use.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements are as indicated.
- B. Verify that outlet boxes are installed in proper locations and at proper mounting heights and are properly sized to accommodate devices and conductors in accordance with NFPA 70.
- C. Verify that wall openings are neatly cut and will be completely covered by wall plates.
- D. Verify that final surface finishes are complete, including painting.
- E. Verify that branch circuit wiring installation is completed, tested, and ready for connection to wiring devices.
- F. Verify that conditions are satisfactory for installation prior to starting work.

3.02 PREPARATION

- A. Provide extension rings to bring outlet boxes flush with finished surface.
- B. Clean dirt, debris, plaster, and other foreign materials from outlet boxes.

3.03 INSTALLATION

- A. Perform work in accordance with NECA 1 (general workmanship) and, where applicable, NECA 130, including mounting heights specified in those standards unless otherwise indicated.
- B. Coordinate locations of outlet boxes provided under Section 26 0533.16 as required for installation of wiring devices provided under this section.
 - 1. Mounting Heights: Unless otherwise indicated, as follows:
 - a. Wall Switches: 48 inches above finished floor.
 - 2. Orient outlet boxes for vertical installation of wiring devices unless otherwise indicated.
- C. Install wiring devices in accordance with manufacturer's instructions.
- D. Install permanent barrier between ganged wiring devices when voltage between adjacent devices exceeds 300 V.
- E. Where required, connect wiring devices using pigtails not less than 6 inches long. Do not connect more than one conductor to wiring device terminals.
- F. Connect wiring devices by wrapping conductor clockwise 3/4 turn around screw terminal and tightening to proper torque specified by the manufacturer. Where present, do not use push-in pressure terminals that do not rely on screw-actuated binding.
- G. Unless otherwise indicated, connect wiring device grounding terminal to branch circuit equipment grounding conductor and to outlet box with bonding jumper.
- H. Provide GFCI receptacles with integral GFCI protection at each location indicated. Do not use feed-through wiring to protect downstream devices.
- I. Install in accordance with manufacturer's instructions.
- J. Install wiring devices plumb and level with mounting yoke held rigidly in place.
- K. Install wall plates to fit completely flush to wall with no gaps and rough opening completely covered without strain on wall plate. Repair or reinstall improperly installed outlet boxes or improperly sized rough openings. Do not use oversized wall plates in lieu of meeting this requirement.
- L. Install blank wall plates on junction boxes and on outlet boxes with no wiring devices installed or designated for future use.
- M. Identify wiring devices in accordance with Section 26 0553.
- N. Connect wiring device grounding terminal to outlet box with bonding jumper.

3.04 FIELD QUALITY CONTROL

- A. See Section 01 4000 - Quality Requirements, for additional requirements.
- B. Inspect each wiring device for damage and defects.

- C. Verify that each receptacle device is energized.
- D. Test each receptacle to verify operation and proper polarity.
- E. Test each GFCI receptacle for proper tripping operation according to manufacturer's instructions.
- F. Correct wiring deficiencies and replace damaged or defective wiring devices.

3.05 ADJUSTING

- A. Adjust devices and wall plates to be flush and level.

3.06 CLEANING

- A. Clean exposed surfaces to remove dirt, paint, or other foreign material and restore to match original factory finish.

END OF SECTION 26 2726

**SECTION 26 4113
LIGHTNING PROTECTION FOR STRUCTURES**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Strike (air) terminals and interconnecting conductors.
- B. Grounding and bonding for lightning protection.

1.02 RELATED REQUIREMENTS

- A. Section 26 0526 - Grounding and Bonding for Electrical Systems: Electrical system grounds.

1.03 REFERENCE STANDARDS

- A. LPI-175 - Lightning Protection Installation Standard; Lightning Protection Institute; 2004.
- B. LPI-176 - Lightning Protection System Material and Components Standard
- C. LPI-177 - Inspection Guide for LPI Certified Systems; 1983.
- D. NFPA 780 - Standard for the Installation of Lightning Protection Systems.
- E. UL 96 - Lightning Protection Components.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination with Concrete Work: Coordinate the embedding of lightning protection components in concrete.
- B. Coordination with Roofing Work: Ensure adequate attachment of strike terminals and conductors without damage to roofing.
- C. Preinstallation Meeting: Convene a meeting at least at least two weeks prior to commencement of any work affected by lightning protection system requirements to discuss prerequisites and coordination required by other installers; require attendance by representatives of installers whose work will be affected.
- D. UL 96A - Installation Requirements for Lightning Protection Systems; Underwriters Laboratories Inc.; 2001.

1.05 SYSTEM DESCRIPTION

- A. Lightning Protection System: Conductor system protecting the tank structures indicated on the drawings consisting of air terminals on water storage tanks; bonding of structure and other metal objects; grounding electrodes; and interconnecting conductors.

1.06 SUBMITTALS

- A. See Section 01 3000 - ADMINISTRATIVE REQUIREMENTS, for submittal procedures.
- B. Shop Drawings: Indicate location and layout of air terminals, grounding electrodes, and bonding connections to structure and other metal objects. Include terminal, electrode, and conductor sizes, and connection and termination details.
 - 1. Where conductors or grounds are to be embedded or concealed in other construction, submit shop drawings at least 30 days prior to start of construction.
 - 2. If concrete-encased grounds are to be used and are not shown in Contract Documents, provide sufficient data to determine concrete encasement dimensions and location.
 - 3. Include access panels, test holes, and disconnecting means for maintenance.
- C. Product Data: Provide dimensions and materials of each component, indication of testing agency listing, and installation instructions.
- D. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- E. Installation Certification: Submit copy of certification agency's approval.

- F. Operation and Maintenance Data: Provide recommended inspection and testing plan, including recommended intervals, to achieve periodic maintenance as recommended in NFPA 780; provide customized plan reflecting actual installation configuration with specific installed components identified.
- G. Manufacturer's Certificate: Certificate of compliance from authority having jurisdiction indicating approval of lightning protection systems.
- H. Project Record Documents: Record actual locations of air terminals, grounding electrodes, bonding connections, and routing of system conductors in project record documents.

1.07 QUALITY ASSURANCE

- A. Perform Work in accordance with NFPA 780 and UL 96A and provide UL Master Label or LPI-IP Master Certificate.
- B. Maintain one copy of each referenced system design standard on site.
- C. Products: Furnish products listed and classified by testing agency acceptable to authority having jurisdiction as complying with UL 96.
- D. Manufacturer Qualifications: Company specializing in lightning protection equipment with minimum three years documented experience.
- E. Designer Qualifications: Person or entity, employed by installer, who specializes in lightning protection system design with minimum three years documented experience.
- F. Installer Qualifications: Company specializing in lightning protection system design with minimum three years documented experience.
- G. Field Quality Control Testing Agency Qualifications: Firm capable of and experienced in grounding and bonding testing with documented experience and minimum of three project references.
- H. Products: Listed, classified, and labeled as suitable for the purpose intended.

1.08 SEQUENCING/SCHEDULING

- A. Coordinate work with roofing and exterior and interior finish installation.

1.09 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to site under provisions of Section 01 6000.
- B. Store and protect products under provisions of Section 01 6000.

1.10 WARRANTY

- A. Manufacturer shall warrant specified equipment to be free from defects in materials and workmanship for two years after substantial completion.

PART 2 PRODUCTS

2.01 LIGHTNING PROTECTION SYSTEM

- A. Lightning Protection System: Provide complete system complying with NFPA 780, including air terminals, bonding, interconnecting conductors and grounding electrodes.
 - 1. Provide system that protects:
 - a. Equalization Tank.
 - 2. Coordinate with other grounding and bonding systems specified.
 - 3. Treat isolated non-grounded protruding metal items as specified by NFPA 780 for heavy-duty stacks.
 - 4. Provide disconnecting means and access panels or similar devices to allow complete periodic inspection and testing as described by NFPA 780 Annex D.
- B. Strike Terminals: Provide strike (air) terminals on the following, at minimum:
 - 1. Equalization Tank.

2.02 COMPONENTS

- A. All Components: Complying with applicable requirements of UL 96.

- B. Strike (Air) Terminals: Aluminum, solid, with adhesive bases for single-ply roof installations.
- C. Strike Terminal for Chimney: Lead-coated copper.
- D. Decorations: None.
- E. Grounding Rods: Solid copper.
- F. Ground Plate: Copper.
- G. Conductors: Aluminum cable for roof circuits. Copper cable for downleads.
- H. Connectors and Splicers:
 - 1. Below Grade: Bronze or copper.
 - 2. Above Grade: Aluminum.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements are as indicated on shop drawings.
- B. Verify surface is ready to accept lightning protection equipment.
- C. Review manufacturer's installation instructions.
- D. Coordinate work with installation of roofing and exterior and interior finishes.

3.02 INSTALLATION

- A. Install in accordance with referenced system standards and as required for specified certification.
- B. Install in accordance with NFPA 780, UL 96A, and LPI-175.
- C. Connect conductors using mechanical connectors. Protect adjacent construction elements and finishes from damage.
- D. Bond exterior metal bodies on building to lightning protection system and provide intermediate level interconnection loops 60 feet on center.

3.03 FIELD QUALITY CONTROL

- A. See Section 01 4000 - Quality Requirements, for additional requirements.
- B. Perform field inspection in accordance with Section 01 4000.
- C. Perform visual inspection as specified in NFPA 780 as if this were a periodic follow-up inspection.
- D. Perform continuity testing as specified in NFPA 780 as if this were testing for periodic maintenance.
- E. Obtain the services of Underwriters Laboratories, Inc. or LPI-IP to provide inspection and labeling of the lightning protection system.
- F. Perform inspection and testing in accordance with LPI-175.

END OF SECTION 26 4113

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SECTION 31 2316 EXCAVATION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Classification of Materials.
- B. Examination and Preparation.
- C. Excavating for slabs-on-grade and site structures.
- D. Filling and Backfilling.
- E. Embankment Construction.
- F. Cleaning.
- G. Protection.

1.02 RELATED REQUIREMENTS

- A. Section 31 2316.13 - Trenching
- B. Section 31 2319 - Dewatering.
- C. Section 31 2323 - Fill: Fill materials, backfilling, and compacting.

1.03 CLASSIFICATION OF MATERIALS

- A. Earth: All material not classified as rock or rubble, includes: clay, silt, sand, gravel, hardpan, disintegrated shale and rock debris, junk, brick, loose stones, and boulders less than 1/3 cubic yards in volume.
- B. Rock: Buried boulders larger than 1/3 cubic yards in volume or materials so hard and dense that continuous loosening by pneumatic tools or blasting is required for removal.
- C. Rubble: Buried concrete foundations, beams, walls, and other materials which require continuous use of pneumatic tools or blasting.
- D. Topsoil: Upper portion of soil profile containing a good supply of humus and a high degree of fertility. Topsoil is free of rocks, clods and other debris larger than 2" in diameter.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify survey bench mark elevations are as indicated on drawings.
- B. Survey existing adjacent structures and exterior improvements to establish exact elevations at fixed points for bench marking.
 - 1. Resurvey benchmarks during installation of excavation support and protection systems and notify Owner if any changes in elevations or positions occur or if cracks, sags, or other damage is evident in adjacent construction.

3.02 PREPARATION

- A. Identify required lines, levels, contours, and datum locations.
- B. Locate and identify known utilities to remain and protect from damage.
- C. Notify utility company to remove and relocate utilities.
- D. Protect bench marks, survey control points, existing structures, fences, sidewalks, paving, and curbs from excavating equipment and vehicular traffic.
- E. Use special care when excavating under and around existing facilities. Support existing facilities and earth under facilities to prevent settlement resulting from construction operations.

3.03 EXCAVATING - GENERAL

- A. If unsuitable, soft, disturbed, or unexpected material is encountered at required excavation elevations, stop excavation in the affected area and notify Engineer and Geotechnical Engineer. Additional undercutting, stabilization, or replacement shall be performed as directed based on evaluation of exposed conditions. Material disturbed or rendered unsuitable by Contractor's operations shall be corrected at no additional cost to Owner.
- B. Strip grass and vegetation from entire construction area and dispose of at location obtained by the Contractor.
- C. Strip topsoil, vegetation, root mats, and organic material from areas of construction to the depth necessary to remove unsuitable organic material. Stockpile suitable topsoil for reuse where indicated.
- D. Provide temporary drainage facilities to prevent damage when necessary to interrupt natural drainage or flow of artificial drains.
- E. Use special care when excavating under and around existing facilities and structures. Prevent settlement of existing structures which may result from construction operation.
- F. Excavate to accommodate new structures and construction operations.
 - 1. Excavate to specified elevations.
 - 2. Excavate to the length and width required to safely install, adjust, and remove any forms, bracing, or supports necessary for the installation of the work.
 - 3. Cut utility trenches wide enough to allow inspection of installed utilities.
 - 4. Hand trim excavations. Remove loose matter.
 - 5. For the flow equalization basin foundation, excavate to the limits and minimum bottom elevation indicated on the Drawings. Do not place structural fill until the exposed subgrade has been evaluated by the Geotechnical Engineer. Additional overexcavation beyond the indicated minimum limits may be required where unsuitable conditions are encountered.
- G. Notify Engineer of unexpected subsurface conditions and discontinue affected work in area until notified to resume work.
- H. Remove lumped subsoil, boulders, and rock up to 1/3 cubic yard measured by volume.
- I. Provide temporary means and methods, as required, to remove all water from excavations until directed by Engineer. Remove and replace soils deemed unsuitable by classification and which are excessively moist due to lack of dewatering or surface water control.
- J. Do not interfere with 45-degree bearing splay of foundations.

3.04 FILLING AND BACKFILLING

- A. Do not fill or backfill until all debris, water, unsatisfactory soil materials, obstructions, and deleterious materials have been removed from excavation.
- B. See Section 31 2323 for fill, backfill, and compaction requirements.

3.05 EXCAVATION - TOPSOIL

- A. Excavate topsoil from areas to be further excavated or re-graded.
- B. Stockpile in area designated on site. Remove excess topsoil not being reused from site.
- C. Do not excavate wet topsoil.
- D. Stockpile to topsoil depth not exceeding 8 feet.

3.06 EXCAVATION - SUBSOIL

- A. Excavate subsoil from areas to be further excavated or re-graded.
- B. Stockpile in area designated on site. Remove excess subsoil not being reused from site.
- C. Do not excavate wet subsoil.
- D. Stockpile subsoil to depth not exceeding 8 feet.

- E. When excavation through roots is necessary, perform work by hand and cut roots with sharp axe.

3.07 EXCAVATION FOR APPURTENANCES

- A. Excavate as required for appurtenances.
- B. Carry excavation to firm, undisturbed soil.
- C. Unauthorized overexcavation shall be corrected at Contractor's expense using material and methods directed by Engineer or Geotechnical Engineer appropriate to the affected construction.

3.08 SHEETING, SHORING, AND BRACING

- A. Considered incidental to project. Contractor shall evaluate effects of excavation support installation and removal on adjacent structures, utilities, and pavements and provide engineered excavation support where required by conditions or Laws and Regulations.
- B. Contractor is solely responsible for complying with OSHA and all other governmental regulations.
- C. Construct sheeting, shoring, and bracing required to hold walls of excavation and to provide safety for workers, to protect existing utilities and structures, and to permit dry conditions for construction.
 - 1. Sheeting: wood or steel.
 - 2. Construct and maintain sheeting and shoring in accordance with OSHA and all other governmental regulations. Contractor solely responsible for complying with the regulations.
- D. Leave in place wood sheeting driven below level of pipe. Remove upper part of wood sheeting to a level 5'-0" (2 m) below finish grade.
- E. Pull steel sheeting except where indicated on Drawings.
- F. When movable trench shield is used below spring line of pipe, lift shield prior to any forward movement to avoid pipe displacement. Fill void left by removal of shield, between consolidated fill and stable trench wall, with consolidated fill of the same type placed adjacent to the pipe.

3.09 CLEANING

- A. See Section 01 7000 - Execution and Closeout Requirements for additional requirements.
- B. Remove excavated material unsuitable for re-use from site.

3.10 PROTECTION

- A. Divert surface water away from excavations.
- B. Prevent displacement of banks and keep loose soil from falling into excavation; maintain soil stability.
- C. Protect open excavations from rainfall, runoff, freezing groundwater, or excessive drying so as to maintain foundation subgrade in satisfactory, undisturbed condition.
- D. Protect bottom of excavations and soil adjacent to and beneath foundation from freezing.
- E. Keep excavations free of standing water and completely free of water during concrete placement.

END OF SECTION 31 2316

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**SECTION 31 2316.13
TRENCHING**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Excavation classification of materials, backfill and bedding materials, excavation for trenches, structures, and appurtenances, rock and rubble excavating, sheeting, shoring, and bracing, dewatering, backfill for structures and trenches, utility crossings and standard trench section requirements.

1.02 REFERENCE STANDARDS

- A. ASTM D698 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³ (600 kN-m/m³)).
- B. ASTM D2922 - Standard Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth); 2005.
- C. Iowa Department of Transportation "Standard Specifications for Highway and Bridge Construction," latest edition and current supplements thereto.

1.03 STANDARD DETAILS

- A. Typical detail drawings for trenching, backfilling, and compacting are provided herein or in the Contract Drawings.

1.04 SUBMITTALS

- A. See Section 01 3000 - ADMINISTRATIVE REQUIREMENTS for submittal procedures.
- B. Field Quality Control Submittals:
 - 1. Results of compaction density tests.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Schedule work to avoid property owner inconvenience insofar as practicable during construction.
- B. Existing Utilities:
 - 1. Before starting operations in any area in the vicinity of utility facilities, notify each utility of any operation which may affect their facilities. Provide notice to each utility sufficiently in advance of such operations to allow the utility time to mark the location of, relocate, adjust, or otherwise protect their facilities. Reach an agreement with each utility on appropriate action necessary to protect or relocate the utility facilities. The cost of such action to protect the facilities, except for locates, be borne by the Contractor. Utilize One-Call System (Iowa: 1-800-292-8989), for locates for those utilities which subscribe to this service. Contact all other utilities that do not subscribe to the One-Call System.
 - 2. At all times conduct operation so that necessary clearances are maintained and said utility facilities are protected. Comply with all Local, State, and Federal, or other regulations in performing work near utility facilities.
 - 3. Should the Contractor damage any of the utility facilities during Contractor's operations or determine the work cannot be performed safely. Immediately notify the utility involved and cease work until arrangements are made to prevent further damage or a serious accident.
 - 4. Failure of the Contractor to provide timely notice to the utility or to conduct operations in such a manner that proper clearances are maintained and the utility facilities are protected at all times will be grounds for the issuance of a Stop Work Order.
 - 5. Notify Engineer of unexpected subsurface conditions and discontinue Work in area until Engineer provides notification to resume work.
- C. When necessary, store materials on site in advance of need.
- D. Verify that survey bench marks and intended elevations for the Work are as indicated.
- E. Protect bench marks, survey control points, existing structures, and paving from excavating equipment and vehicular traffic.

- F. Remove, replace and repair fences, signs and other obstructions as necessary for construction; return all items to equal or better than original condition.
- G. Restore obstructions removed to accommodate construction equipment or to facilitate excavation.
- H. Contractor responsible for providing adequate barricades and protection around excavation and work areas.

PART 2 PRODUCTS

2.01 FILL MATERIALS

- A. See Section 31 2323 - Fill.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify survey benchmarks and intended elevations for work are as indicated on drawings.

3.02 PREPARATION

- A. Identify required lines, levels, contours, and datum locations.
- B. Locate and identify existing utilities to remain as indicated on drawings and protect from damage.
- C. Notify utility company to remove and relocate utilities as indicated on drawings.
- D. Protect plants, lawns, rock outcroppings, signs, and other features to remain.
- E. Grade top perimeter of trenching area to prevent surface water from draining into trench. Provide temporary means and methods, as required, to maintain surface water diversion until no longer needed, or as directed by the Engineer.

3.03 TRENCH EXCAVATION

- A. Notify Engineer of unexpected subsurface conditions and discontinue affected work in area until notified to resume.
- B. Trench Bottom:
 - 1. Provide firm, stable and uniform support for full length of pipe.
 - 2. With acceptable soils, lay pipe on layer of loose material after leveling trench bottom. If no loose material remains, shave soft material from trench walls and compact or use granular bedding.
 - 3. If trench bottom is rocky or hard, over-excavate trench and place select or granular backfill below pipe as shown on the Typical "Pipe Cushion" Detail. Cushion material shall be the same as the specified bedding material.
 - 4. When unstable material is encountered which may not provide a suitable foundation for pipe, remove unsuitable material and replace with stabilizing material.
- C. Keep sides of trench as nearly vertical as practicable within the limits of excavation codes and safety requirements; maintain vertical walls of excavation below top of pipe. Provide trench wall support as needed.
- D. Do not interfere with 45 degree bearing splay foundations.
- E. Excavate to full depth by machine; level trench bottom to provide uniform bearing and support for full length of pipe.
- F. Provide bell holes at each pipe joint; allow access completely around circumference of pipe for proper jointing operations.
- G. Conform to best trench bottom construction practices as recommended by pipe manufacturer.
- H. Trench bottoms carried below required grade; backfill to proper elevation with granular bedding at no expense to the Owner.
- I. When unstable material is encountered which may not provide a suitable foundation for pipe
 - 1. Notify Engineer immediately.
 - 2. Engineer will investigate questionable material to determine its suitability for pipe foundation.

3. If material is considered unsuitable for pipe foundations, Engineer will specify and authorize remedial measures in writing.
4. If removal of unsuitable material is authorized:
 - a. Replace with trench stabilizing material.
 - b. Provide minimum of 4 inch of bedding material on top of stabilizing material to prevent point load. Bedding material graded sufficiently coarse to prevent movement and loss of bedding into trench stabilizing material.
- J. Cut trenches wide enough to allow inspection of installed utilities. Maximum trench width shall be pipe O.D. plus 24". Provide cradling or strengthening at Contractor's expense if maximum trench width is exceeded.
- K. When the material being excavated is such that it is physically impossible to stabilize the trench bottom or secure a uniform bearing using dewatering and stabilizing material and in the judgement of the Engineer concrete encasement, concrete cradling or pilings are necessary to support the pipe, provide such support when directed in writing by the Engineer. If not shown on Drawings, cradling, encasing, and pilings, if necessitated by native trench conditions and not the Contractor's operations, shall be paid for as extra work.
- L. Hand trim excavations:
 1. Under and around utilities.
 2. Where overhead clearance prevents use of machine.
- M. Remove large stones and other hard matter that could damage piping or impede consistent backfilling or compaction.
- N. Remove excavated material that is unsuitable for backfill from site. Waste at disposal area obtained by the Contractor at no cost to the Owner.
- O. Stockpile excavated material suitable for backfill in an orderly manner a sufficient distance from edge of excavation to avoid rollbacks, slides, or cave-ins. Stockpile topsoil.
- P. Remove excess excavated material from site.
- Q. Provide temporary means and methods, as required, to remove all water from trenching until directed by the Engineer. Remove and replace soils deemed unsuitable by classification and which are excessively moist due to lack of dewatering or surface water control.
- R. Determine the prevailing groundwater level prior to trenching. If the proposed trench extends less than 1 foot into the prevailing groundwater, control groundwater intrusion with perimeter drains routed to sump pumps, or as directed by the Engineer.
- S. Remove brush, rubbish, spoil and material not suitable for backfill; waste at off-site disposal area obtained by the Contractor at no cost to the Owner.
 1. Remove waste material promptly as it is generated by construction operations; do not permit it to accumulate.
 2. Grade disposal areas periodically to reasonable neat surface to provide for drainage and access by others.

3.04 PREPARATION FOR UTILITY PLACEMENT

- A. Cut out soft areas of subgrade not capable of compaction in place. Backfill with general fill.
- B. Compact subgrade to density equal to or greater than requirements for subsequent fill material.
- C. Until ready to backfill, maintain excavations and prevent loose soil from falling into excavation.

3.05 BACKFILL AND COMPACTION

- A. Employ placement method that does not disturb or damage other work.
- B. Systematically fill to allow maximum time for natural settlement. Do not fill over porous, wet, frozen, or spongy subgrade surfaces.
- C. Maintain optimum moisture content of fill materials to attain required compaction density.

- D. General Fill: Place and compact materials in equal continuous layers not exceeding 8 inches compacted depth.
- E. Granular Fill: Place and compact material in equal continuous layers not exceeding 6 inches compacted depth.
- F. Correct areas that are over-excavated.
 - 1. Thrust-Bearing Surfaces: Fill with concrete.
 - 2. Other Areas: Backfill, flush to required elevation, compacted to minimum 97 percent of maximum dry density at minus 2 percent to 4 percent of optimum moisture.
- G. Compaction Density Unless Otherwise Specified or Indicated:
 - 1. Under paving, slabs-on-grade, and similar construction: 97 percent of maximum dry density.
 - 2. At Other Locations: 95 percent of maximum dry density at minus 2 percent to 4 percent of optimum moisture.
 - 3. See Section 31 2323 - Fill for additional requirements.
- H. Reshape and re-compact fills subjected to vehicular traffic.

3.06 EXISTING UTILITY CROSSINGS

- A. Notify utility companies before excavating; utilize Iowa Utility One-Call (800-292-8989); conform to current utility notification requirements.
- B. Where new construction crosses or closely parallels existing utilities or utility services, excavate in advance of pipe laying to determine location and crossing arrangement, including exact construction line and grade.
- C. Utility mains shown on Drawings in conflict with new facilities: Perform relocation or make arrangements with utility to perform Work at no additional cost to Owner
- D. Utility mains not shown on Drawings in conflict with new facility: Notify Engineer immediately.
- E. Provide compacted sand or granular material under all existing utilities or service lines that are located above the new pipeline. Compact material to a minimum of 95% Standard Proctor Density.
- F. Repair any drainage tile interrupted during the course of construction according to details on Drawings and/or Typical Detail Drawings.

3.07 FIELD QUALITY CONTROL

- A. See Section 01 4000 - Quality Requirements for general requirements for field inspection and testing.
- B. Perform compaction density testing on compacted fill in accordance with ASTM D1556, ASTM D2167, or ASTM D6938.
- C. Perform compaction density testing uniformly throughout the placing of the compacted fill in accordance with ASTM D2922 and ASTM D698 to maintain quality control at all times.
- D. If tests indicate work does not meet specified requirements, remove work, replace and retest at no cost to Owner.
- E. Frequency of Tests: One field density and moisture test per lift per 400 SY of trench under paved and/or unpaved areas. Minimum one test per lift.

3.08 CLEANING

- A. Clean up each portion of construction as it is completed.
 - 1. Restore obstructions removed to accommodate construction equipment or to facilitate excavation.
 - 2. Clean up and remove rubbish, debris, and surplus materials.
- B. Reopen to traffic as soon as practicable.

END OF SECTION 31 2316.13

**SECTION 31 2319
DEWATERING**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Submittals.
- B. Quality Assurance.
- C. All labor, materials, and equipment necessary to dewater all excavations and trenches in accordance with the requirements of the Contract Documents.

1.02 REGULATORY REQUIREMENTS

- A. Conform with all city, county, state, and federal requirements and obtain permits for the control and discharge of water from dewatering operations.
- B. Coordinate with Owner, other Contractors, Sub-contractors and governmental bodies.
- C. Secure all necessary permits to complete the requirements of this Section.

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Prior to excavation, submit a detailed plan, operation and removal schedule for dewatering. Contractor may be required to demonstrate the system and to verify that adequate equipment, personnel, and materials are provided to dewater the excavations and trenches at all locations.
 - 1. Submit the dewatering plan for Owner and Engineer's record. Engineer's review not required.
 - 2. Dewatering plan shall identify proposed method, anticipated pumping capacity, discharge location, provisions for standby equipment, means of controlling sediment discharge, and measures to prevent settlement or loss of fines from surrounding soils.

1.04 QUALITY ASSURANCE

- A. Contractor is responsible for controlling discharge rate and effect of the dewatering system.
- B. Establish, observe, and record reference points at frequent intervals to detect any settlement of structures adjacent to areas of proposed dewatering. The Contractor is responsible for protecting adjacent structures. Any costs associated with the repair, restoration, or replacement of damaged structures shall be the responsibility of the Contractor.

PART 2 PRODUCTS

2.01 EQUIPMENT

- A. Dewatering may include, but not limited to, wells, well points, sumps, temporary pipelines for water disposal, rock or gravel placement, or any combination. Maintain standby pumping equipment on the job site.

PART 3 EXECUTION

3.01 GENERAL

- A. Provide and remove all equipment necessary for dewatering. Provide dewatering systems with sufficient pumping equipment and machinery in good working condition and provide at all times, competent workmen for the operation of the systems. Keep adequate standby equipment available at all times to insure continuous and efficient dewatering and maintenance of dewatering operation.
- B. Maintain groundwater at least two (2) feet below the bottom of any excavation or trench until entire structure is completed, backfilled, and building drainage system is operational. This includes any sump pumps or storm drains used as an outlet.
- C. Commence dewatering for structures and pipelines when groundwater is first encountered, and dewater continuously until such times as water can be allowed to rise in accordance with the provisions of this Section or other requirements.

- D. Provide drainage for the site grading at all times. Divert surface runoff from excavations and trenches. Collect surface runoff in shallow ditches around the perimeter, drain to sumps, and pump or drain by gravity to maintain a bottom free from standing water.
- E. Preserve the undisturbed bearing capacity of the subgrade soils at proposed bottom of excavation by dewatering.
- F. Excavate affected areas and replace with crushed rock, at no additional cost to the Owner, if foundation soils are disturbed or loosened by the upward seepage of water or an uncontrolled flow of water.
- G. Provide clean granular working mat where required to maintain stable construction access or protect approved subgrade. Working mat does not replace required granular structural fill unless specifically accepted by Geotechnical Engineer.
- H. Prevent flotation by maintaining a positive and continuous removal of water. Contractor is responsible and liable for all damages which may result from failure to adequately keep excavations and trenches dewatered.
- I. Adequately space well points or wells (if used) to provide the necessary dewatering. Sand-pack or by other means to prevent pumping of fine sands or silts from the subsurface. Continuously check to ensure that the subsurface soil is not being removed by the dewatering operation.
- J. Dispose of water in a suitable manner without damage to adjacent property. Do not drain water into Work built or under construction. Filter water using an approved method to remove sand and fine-sized soil particles before disposal into any drainage system.
- K. Release groundwater to its static level in such a manner as to maintain the undisturbed state of the natural foundation soils, prevent disturbance of compacted backfill and prevent flotation or movement of structures or pipelines.
- L. Provide groundwater monitoring wells where required by Contractor's dewatering design or where necessary to demonstrate satisfactory groundwater control.

END OF SECTION 31 2319

**SECTION 31 2323
FILL**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Submittals.
- B. Quality Assurance.
- C. Delivery, Storage, and Handling.
- D. Fill Materials.
- E. Accessories.
- F. Source Quality Control.
- G. Filling, backfilling, and compacting for slabs-on-grade and paving.
- H. Backfilling and compacting for utilities outside the building to utility main connections.
- I. Field Quality Control.
- J. Cleaning.

1.02 RELATED REQUIREMENTS

- A. Section 31 2316 - Excavation: Removal and handling of soil to be re-used.

1.03 REFERENCE STANDARDS

- A. ASTM C136/C136M - Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.
- B. ASTM D698 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³ (600 kN-m/m³)).
- C. ASTM D1556/D1556M - Standard Test Method for Density and Unit Weight of Soil in Place by Sand-Cone Method.
- D. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2,700 kN-m/m³)).
- E. ASTM D2167 - Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method; 2008.
- F. ASTM D2487 - Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System).
- G. ASTM D2922 - Standard Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth); 2005.
- H. ASTM D4491 - Standard Test Method for Water Permeability of Geotextiles by Permittivity.
- I. ASTM D4632 - Standard Test Method for Grab Breaking Load and Elongation of Geotextiles.
- J. ASTM D4759 - Standard Practice for Determining the Specification Conformance of Geosynthetics.
- K. ASTM D4751 - Standard Test Method for Determining Apparent Opening Size of a Geotextile.

1.04 SUBMITTALS

- A. See Section 01 3000 - ADMINISTRATIVE REQUIREMENTS, for submittal procedures.
- B. Materials Sources: Submit name of imported materials source.
- C. Fill Composition Test Reports: Results of laboratory tests on proposed and actual materials used, including manufactured fill.
- D. Compaction Density Test Reports.
- E. Submit representative sample and laboratory classification/gradation data for proposed granular structural fill to the Geotechnical Engineer for evaluation prior to use.

1.05 QUALITY ASSURANCE

- A. The Contractor shall employ and pay for services of the independent testing laboratory for tests required to show compliance with the specifications. Submit test results directly to the Owner/Engineer. Selection of the testing laboratory is subject to approval of the Owner/Engineer.
- B. Determine moisture density relations of soils encountered during construction in accordance with standard proctor method. Provide graph of proctor soil density versus water content for all backfill material.
- C. Provide gradation and materials tests for pipe bedding and stabilizing material.
- D. Test trench backfill soil density and moisture at one test per lift per 400 SY of trench under paved and/or unpaved areas.
- E. Structural fill beneath the flow equalization basin foundation shall be tested for density and moisture content in each lift at a frequency sufficient to evaluate the full placement area, but not less than the requirements of 3.06.E.
- F. Reference to percent maximum density shall mean a soil density not less than the stated percentage of maximum density for soil as determined by ASTM D698, "Moisture Density Relations of Soils" Standard Proctor Method.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. When necessary, store materials on site in advance of need.
- B. When fill materials need to be stored on site, locate stockpiles where designated by Owner.
 - 1. Separate differing materials with dividers or stockpile separately to prevent intermixing.
 - 2. Prevent contamination.
 - 3. Protect stockpiles from erosion and deterioration of materials.
- C. Verify that survey bench marks and intended elevations for the Work are as indicated on Drawings.

PART 2 PRODUCTS

2.01 FILL MATERIALS

- A. General Fill Use Subsoil excavated on-site or from off-site borrow area. General fill material to be free of foreign substance, debris, large stones, rocks, roots, organic or frozen material, expansive material and other deleterious materials.
 - 1. Free of lumps larger than 3 inches, rocks larger than 2 inches, and debris.
 - 2. Liquid limit less than 45 and plasticity index less than 23.
- B. Select Backfill: Shall be approved select material obtained from site or from off-site borrow areas. Material to be free of foreign substance, debris, large stones, rocks 4" or larger, roots, organic or frozen material, expansive material and other deleterious materials. See details on Drawings and/or Typical Detail Drawings herein for typical extent of select bedding and backfill.
- C. Granular structural fill: Approved granular material suitable for use beneath the flow equalization basin foundation and other locations indicated. Material shall be classified as GW, GP, GM, GC, SW, SP, SM, or SC in accordance with ASTM D2487; shall be free of organic matter, debris, frozen material, and other deleterious material; and shall be acceptable to the Geotechnical Engineer for the intended use.
- D. Granular Fill - Gravel : Pit run washed stone; free of shale, clay, friable material and debris.
 - 1. Graded in accordance with ASTM C136/C136M, within the following limits:
 - a. 2 inch sieve: 100 percent passing.
 - b. 1 inch sieve: 95 percent passing.
- E. Topsoil: Topsoil excavated on-site or from off-site borrow areas.
 - 1. Free of roots, rocks larger than [1] inch, subsoil, debris, large weeds, clay and impurities, plants and foreign matter.
- F. Initial Backfill - See Trench Details included in the Contract Drawings

2.02 ACCESSORIES

- A. Filter Fabric: Manufacturer's standard non-woven pervious geotextile fabric of polypropylene, nylon or polyester fibers, or a combination.
 - 1. Provide filter fabrics that meet or exceed the listed minimum physical properties determined according to ASTM D4759 and the referenced standard test methods in parenthesis:
 - a. Grab Tensile Strength (ASTM D4632): 100 pounds.
 - b. Apparent Opening Size (ASTM D4751): #100 U.S. Standard Sieve.
 - c. Permeability (ASTM D 4491): 150 Gallons per minute per square foot.

2.03 SOURCE QUALITY CONTROL

- A. See Section 01 4000 - Quality Requirements, for general requirements for testing and analysis of soil material.
- B. Where fill materials are specified by reference to a specific standard, test and analyze samples for compliance before delivery to site.
- C. If tests indicate materials do not meet specified requirements, change material and retest.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Identify required lines, levels, contours, and datum locations.
- B. Verify subdrainage, dampproofing, or waterproofing installation has been inspected.
- C. Verify structural ability of unsupported walls to support imposed loads by the fill.
- D. Verify areas to be filled are not compromised with surface or ground water.

3.02 PREPARATION

- A. Proof roll or probe exposed subgrade, as appropriate for accessibility, in the presence of the Geotechnical Engineer to identify soft, disturbed, or unstable areas.
- B. Where proof rolling is feasible, use a fully loaded tandem-axle dump truck or other equipment providing equivalent subgrade loading, with minimum gross weight of approximately 25 tons unless otherwise accepted by Geotechnical Engineer.
- C. Undercut or stabilize unstable areas as directed following geotechnical evaluation.
- D. Following proof rolling and required undercutting or stabilization, scarify exposed subgrade to a depth of 9 inches, moisture condition, and compact in accordance with the requirements for structural fill.
- E. Until ready to fill, maintain excavations and prevent loose soil from falling into excavation.

3.03 BEDDING AND BACKFILL FOR TRENCHES

- A. Place bedding from bottom of pipe trench to pipe spring line as indicated on applicable Typical Detail Drawings. Bedding includes material below bottom of pipe as specified. Compact bedding below bottom of pipe prior to installation of pipe to minimize settlement.
- B. Use caution when placing and compacting backfill to avoid placing construction loads on pipe which may damage or displace newly laid pipe.
- C. Bedding for Pressure Lines:
 - 1. Native select material as specified or granular pipe bedding material.
 - 2. No bedding required where rock or other unyielding material is encountered in trench bottom, provide a cushion of granular pipe bedding with thickness as shown on Typical Detail Drawing.
 - 3. Compact bedding and cushioning materials in 6" (150 mm) lifts from trench bottom to pipe spring line.
 - 4. Compact backfill material to a minimum 90 percent Standard Proctor density (ASTM D698).
 - 5. Construct structures and appurtenances and perform backfilling as work progresses.

- D. Construct manholes and appurtenances and perform backfilling as work progresses.
- E. In non-pavement areas where trench backfill consists of relatively clean granular material, provide a minimum 18-inch-thick cap of compacted low-permeability cohesive fill below topsoil and final surface restoration.
- F. Backfill with material removed from excavation except where imported backfill is specified; use no debris, frozen earth, large clods, stones, or other unsuitable material. If native material is too wet or dry to achieve specified compaction, Contractor required to dry or wet material or replace with approved imported material at no additional cost to the Owner.
- G. Provide trench plugs at locations indicated on the Contract Drawings. Trench plug material shall consist of cementitious flowable fill or compacted low-permeability clay and shall completely surround the utility. Extend plug not less than 5 feet horizontally from the exterior face of the structure unless a greater extent is indicated.
- H. Percent maximum density shall mean a soil density no less than the stated percent of optimum density for soil as determined by ASTM D698, Standard Proctor Density or ASTM D1557, Modified Proctor Density.
- I. Rocks 1-1/2" (37 mm) in diameter and larger, wood, frozen earth, clods of earth and/or hard, bulky materials shall be considered as spoil materials and shall not be used as selected material for bedding, initial and trench backfill. Dispose of spoil material by hauling materials to a suitable disposal site obtained by the Contractor.
- J. Backfill simultaneously on both sides of pipe to prevent displacement.
- K. Place backfill into trench at an angle to minimize impact on installed pipe.
- L. Initial Backfill:
 - 1. As previously specified.
- M. Backfill trench immediately after location of connections and appurtenances have been recorded. Conform to applicable Typical Detail Drawings contained herein.
- N. Placement of Backfill:
 - 1. Place initial backfill material only after installation of pipe and bedding material has been completed.
 - 2. Place all initial backfill in such a manner so not to damage or displace pipe.
 - 3. Compact to minimize settlement of trench backfill and provide optimum support of pipe.
- O. Place trench backfill only after initial backfill has been placed, compacted, and approved. Trench backfill, material and compaction requirements depend on what area the pipe is located beneath as specified. Trench backfill begins 1'-0" (1/3 m) above pipe barrel and terminates at final grade or subgrade.
- P. Trench Backfill:
 - 1. Select material compacted in 8" (150 mm) lifts with pneumatic or mechanical tampers to finish grade or subgrade. Compact to a minimum of 95% Standard Proctor Density (ASTM D698)

3.04 FILLING

- A. Backfill voids resulting from demolition and excavation to obtain grade required around structures.
- B. Fill to contours and elevations indicated using unfrozen materials.
- C. Employ a placement method that does not disturb or damage other work.
- D. Backfilling around structures:
 - 1. Prevent displacement of structural components during backfilling operations. Backfill opposite sides simultaneously with a maximum backfill elevation difference of 6 feet.
 - 2. For walls that are unbraced at the top edge, backfill can be place upon concrete reaching required strength, as noted above.

3. For walls that are braced at the top edge, backfill can be placed only when the next level floor framing or cover slabs are in place and the concrete has reached the required strength, as noted above.
- E. Systematically fill to allow maximum time for natural settlement. Do not fill over porous, wet, frozen or spongy subgrade surfaces.
- F. Maintain optimum moisture content of fill materials to attain required compaction density.
- G. Place structural fill in loose lifts not exceeding 9 inches when compacted with heavy self-propelled equipment and not exceeding 4 inches when compacted with hand-guided equipment.
- H. Establish final grades as indicated on the Contract Drawings and provide positive drainage away from structures.
- I. Correct areas that are over-excavated.
 1. Other areas: Use granular fill, flush to required elevation, compacted to minimum 97 percent of maximum dry density.
- J. Compaction Density Unless Otherwise Specified or Indicated:
 1. Cohesive structural fill: Minimum 95 percent of maximum dry density per ASTM D698, at 0 to +4 percent of optimum moisture content.
 2. Granular structural fill: Minimum 98 percent of maximum dry density per ASTM D698 at workable moisture content. Where granular material is not suitable for Proctor-based density evaluation, compact to at least 70 percent relative density in accordance with ASTM D4253 and ASTM D4254, or to stable condition as evaluated by the Geotechnical Engineer.
- K. Reshape and re-compact fills subjected to vehicular traffic.
- L. Maintain temporary means and methods, as required, to remove all water while fill is being placed as required, or until directed by the Engineer. Remove and replace soils deemed unsuitable by classification and which are excessively moist due to lack of dewatering or surface water control.
- M. Pneumatic tired rollers or heavy vibratory compactors shall not be used within 6 ft. (2 m) of structure, walls, pipes, or other construction which might be damaged by compaction equipment.

3.05 FILL AT SPECIFIC LOCATIONS

- A. Use general fill unless otherwise specified or indicated.
- B. At Foundation Walls:
 1. Use general fill, except where granular bedding is specified; use no debris, frozen earth, large clods, stones, or other unsuitable material.
 2. Fill up to finish grade elevation as shown on Drawings; dispose of excess excavated material as directed by Engineer.
 3. Do not backfill against unsupported Structures.
 4. Backfill simultaneously on each side of structures; protect structures from damage at all times.
- C. Under Slabs:
 1. Compact to 95 percent of maximum dry density.
- D. Flow Equalization Basin Foundation:
 1. Backfill the specified overexcavation beneath the flow equalization basin foundation with granular structural fill.
 2. Do not begin granular structural fill placement until the exposed bottom of overexcavation has been evaluated by the Geotechnical Engineer.
 3. Place, moisture condition, compact, and test granular structural fill in accordance with this Section.
 4. Each lift shall be tested and evaluated before placement of subsequent lifts.

3.06 FIELD QUALITY CONTROL

- A. See Section 01 4000 - Quality Requirements, for general requirements for field inspection and testing.
- B. Perform in-place density and moisture testing in accordance with ASTM D6938 or other applicable ASTM method acceptable to the Geotechnical Engineer.
- C. Determine maximum dry density and optimum moisture content in accordance with ASTM D698 unless another method is specifically required for the material.
- D. Where relative density is used for granular material, determine relative density in accordance with ASTM D4253 and ASTM D4254.
- E. If tests indicate work does not meet specified requirements, remove work, replace and retest.
- F. Frequency of Tests:
 - 1. Take soil density tests uniformly throughout the placing of fill material so that quality control can be maintained at all times. Minimum requirements are as follows:
 - a. One field density test for each 25 CY of structural fill, minimum one each lift.
 - b. One field density test for each 50 CY of controlled fill, minimum one each lift.
 - c. One field test per day for each type of fill on any day when fill is placed, regardless of quantity.

3.07 CLEANING

- A. Clean up each portion of construction as it is completed.
- B. Remove unused stockpiled materials, rubbish, and debris and leave area in a clean and neat condition. Grade stockpile area to prevent standing surface water.
- C. Leave borrow areas in a clean and neat condition. Grade to prevent standing surface water.

END OF SECTION 31 2323

**SECTION 32 1623
SIDEWALKS AND DRIVEWAYS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Concrete sidewalks.
- B. Concrete driveways.

1.02 REFERENCE STANDARDS

- A. ACI PRC-305 - Guide to Hot Weather Concreting.
- B. ACI PRC-306 - Guide to Cold Weather Concreting.
- C. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete.

1.03 IOWA DOT REFERENCE

- A. Iowa Department of Transportation "Standard Specifications for Highway and Bridge Construction," latest edition and current supplements thereto.

1.04 SUBMITTALS

- A. See Section 01 3000 - ADMINISTRATIVE REQUIREMENTS for submittal procedures.
- B. Product Data:
 - 1. Concrete: Provide data on admixtures.
- C. Provide concrete mix design report and details of joint type and locations on pavement before placing concrete.
- D. Submit proposed concrete placement sequence and identify any proposed construction joints or deviations from joint locations and types indicated on the Drawings.
- E. Aggregate Composition Test Reports: Results of laboratory tests on proposed and actual materials used.

1.05 FIELD CONDITIONS

- A. Follow recommendations of ACI PRC-305 and ACI PRC-306 when concreting during hot and cold weather, respectively.

PART 2 PRODUCTS

2.01 CONCRETE SIDEWALKS AND DRIVEWAYS

- A. Modified Subbase: Thickness as indicated on drawings.
 - 1. Comply with Iowa DOT Specifications Section 4123.
- B. Concrete Forms: Wood.
- C. Concrete Materials:
 - 1. Portland Cement: ASTM C150, Type 1.
 - 2. Concrete shall be in accordance with IDOT Section 2301, Mix C-4, Class 3 durability.
 - a. 0.5 inch to 4 inch slump.
 - b. 6.5 percent, plus or minus 1.5 percent, air entrainment
- D. Aggregate:
 - 1. Fine aggregate: Iowa DOT 4110.
 - 2. Course aggregate:
 - a. Clean, hard, durable particles of crushed limestone free from injurious amounts of objectionable materials; minimum Class 2 durability limestone; Iowa DOT 4115.
 - b. Gradation: Iowa DOT 4115, Gradation Number 5.
- E. Air-Entraining Admixtures: ASTM C260/C260M.
 - 1. Retarding: A suitable retarding admixture may be used during hot weather, with approval of Engineer.

2. Calcium chloride shall not be used.
 3. Water Reducing Agents: ASTM C 494; Iowa DOT IM 529.
 4. Other admixtures may be used subject to approval of Engineer.
- F. Accessories
1. Expansion tubes: Fabricated steel or plastic tubes; provide tubes with internal diameter 1/16" larger than dowel bar; bar stop capable of withstanding 20 lbs. push, minimum.
 2. Metal keyways: Fabricated 24 gauge sheet steel; conform to details shown on Drawings; provide lengths in multiples of tie bar spacing; punch to receive tie bars; support metal keyway with legs unless installed by paving machine.
 3. Liquid curing compounds: Use white curing compounds on all pavements.
- G. Joints:
1. Joint materials, dowels, tie bars, keyways, and sealants shall conform to the joint types and details indicated on the Contract Drawings.
 2. Joint Sealer: Hot poured joint filler composed of petropolymers, ASTM D 3405 with 90-150 penetration at 77°F. and passing 3 cycles, 200% extension bond test at - 20°F for all regular concrete.
 3. Backer Rope: Cellulose or plastic foam suitable for use with hot-poured sealer; size and compression such that it maintains position during filling operation.
 4. Preformed Expansion Joint Filler: Asphalt saturated fiber strips; AASHTO M213; furnish in strips of plan dimensions.
- H. Plastic film: Opaque, white pigmented polyethylene plastic, 0.00085" minimum thickness, use only once if less than 0.0034" thick.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify gradients and elevations of the subgrade are correct as shown on drawings. Where poor subgrade material is encountered, remove and replace with suitable material.
- B. Verify compacted subgrade is acceptable, ready to support imposed loads and paving, and ready to receive work.

3.02 SUBGRADE PREPARATION

- A. Prepare and compact pavement and sidewalk subgrade in accordance with Section 31 2323 and the requirements indicated on the Drawings.
- B. Remove, undercut, or stabilize soft, yielding, disturbed, or otherwise unsuitable areas prior to placement of modified subbase.
- C. Maintain prepared subgrade in a smooth, compacted condition at required line and grade until placement of subbase or concrete. Repair rutting, pumping, or other disturbance prior to proceeding.

3.03 SUBBASE INSTALLATION

- A. Place modified subbase in lifts of thickness appropriate for the material and compaction equipment used. Compact to the density specified in Section 31 2323.
- B. Level and contour surfaces to elevations and gradients indicated.
- C. Add small quantities of fine aggregate to coarse aggregate as appropriate to assist compaction.
- D. Add water to assist compaction. If excess water is apparent, remove aggregate and aerate to reduce moisture content.
- E. Use mechanical tamping equipment in areas inaccessible to compaction equipment.
- F. Maintain subgrade in a smooth, compacted condition with required section and established grade until concrete is placed.

3.04 CONCRETE SIDEWALK AND DRIVEWAY INSTALLATION

- A. Forming:
 - 1. Assemble formwork to permit easy stripping and dismantling without damaging concrete.
 - 2. Forms: Place and secure forms to location, dimension, profile, and gradient shown on drawings. Height equal to the full depth of the finished sidewalk/driveway.
 - 3. Measure or stake as required to construct project elements. Verify that form work complies with the design requirements:
 - a. The tolerance between the design running slope and the maximum allowable running slope is less than 1.0%.
 - b. The tolerance between the design cross slope of the sidewalk, turning space, or shared use path and the maximum allowable cross slope is less than 0.5%.
- B. Placement:
 - 1. Uniformly moisten subgrade just prior to concrete placement.
 - 2. Adjust manhole castings, valve boxes, or other fixtures within pavement to finished surface grade; clean outside of castings.
 - 3. Place concrete to full depth in single operation; do not pile concrete more than 8" above design elevation of surface.
 - 4. Carefully place concrete on subgrade to prevent segregation of materials and at locations which require minimum rehandling; do not displace reinforcing.
 - 5. Vibrate and consolidate to prevent formation of voids
- C. Joints:
 - 1. Construction joint:
 - a. Construct construction joints at the locations and using the joint types, dowels, tie bars, keyways, or other load-transfer devices indicated on the Drawings. Do not introduce additional construction joints without Engineer's acceptance.
 - b. Place a construction joint at the close of each day's work or when depositing of concrete is stopped for 45 minutes or more.
 - c. Form construction joint by using a header board. Set perpendicular to the surface and at right angles to the centerline.
 - 2. Contraction joint:
 - a. Space sidewalk contraction joints equal to the width of the sidewalk.
 - b. Locate driveway contraction joints as indicated on the Drawings.
 - c. Form transverse contraction joints to a depth of 1 1/4 inches with a pointed trowel or jointing tool. In lieu of forming, joints may be sawed within 12 hours of placement with a 3/16 inch blade saw to a depth of 1/3 the pavement thickness. Use a straightedge if joints are sawed with a hand-held saw.
 - 3. Isolation joint:
 - a. Install isolation joints where sidewalks or driveways abut roadway pavement, parking lots, buildings, structures, and as indicated on Contract Drawings.
 - b. Install a 1/2 inch or 3/4 inch thick strip of preformed resilient joint material to the full depth of concrete. Trim any isolation joint material protruding above the finished work to the level of the abutting concrete.
 - c. If the isolation joint is to be sealed, place the preformed material 1/2 inch below the level of the abutting concrete.
- D. Finishing:
 - 1. Use a wood float to depress the large aggregate and create a dense surface.
 - 2. Allow concrete to set until all shine has disappeared from the surface.
 - 3. Smooth with a metal trowel until surface is free from defects and blemishes.
 - 4. Construct joints by sawing or by using a jointer or groover tool.
 - 5. Finish edges of sidewalk or driveway with an edging tool having a radius of approximately 1/2 inch. Ensure tool marks do not appear on the finished surface.
 - 6. Brush with a soft broom at right angles to the side forms to provide a non-skid surface.

3.05 PROTECTION

- A. Immediately after placement, protect sidewalk from premature drying, excessively hot or cold temperatures, and mechanical injury.
- B. Do not permit vehicular traffic on new pavement until concrete has attained sufficient strength for the anticipated loading.
- C. Do not permit pedestrian traffic over sidewalk for 7 days minimum after finishing.

3.06 FIELD QUALITY CONTROL

- A. Provide independent testing in accordance with Section 01 4000.
- B. Concrete testing shall include compressive strength, slump, air content, and concrete temperature.
- C. Perform testing of pavement subgrade and modified subbase as specified in Section 31 2323.

3.07 DEFECTS OR DEFICIENCIES

- A. Pavement containing excessive cracks, fractures, spalls, or other defects shall be removed and replaced, or repaired, at no cost to Owner. Severity of defects and remedy, determined by Engineer.

END OF SECTION 32 1623

SECTION 32 3113
CHAIN LINK FENCES AND GATES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Submittals.
- B. Quality Assurance.
- C. Delivery, Storage, and Handling.
- D. Warranty.
- E. Components.
- F. System Description.
- G. Materials.
- H. Manual Gates with Related Hardware.
- I. Accessories.

1.02 REFERENCE STANDARDS

- A. ASTM A121 - Standard Specification for Metallic-Coated Carbon Steel Barbed Wire.
- B. ASTM A392 - Standard Specification for Zinc-Coated Steel Chain-Link Fence Fabric.
- C. ASTM F567 - Standard Practice for Installation of Chain-Link Fence.
- D. ASTM F 626 - Standard Specification for Fence Fittings.
- E. ASTM F1083 - Standard Specification for Pipe, Steel, Hot-Dipped Zinc-Coated (Galvanized) Welded, for Fence Structures.
- F. NFPA 70 - National Electrical Code.

1.03 SUBMITTALS

- A. See Section 01 3000 - ADMINISTRATIVE REQUIREMENTS, for submittal procedures.
- B. Product Data: Provide data on fabric, posts, accessories, fittings and hardware.
- C. Shop Drawings: Indicate plan layout, fence height(s), spacing of components, post foundation dimensions, hardware anchorage, and schedule of components.
- D. Operation and maintenance manuals according to Section 01 7800.
- E. Project Record Documents: Submit under provisions of Section 01 7800.

1.04 QUALITY ASSURANCE

- A. Comply fully with Manufacturers' Instructions.
- B. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years of documented experience.
- C. Installer Qualifications: Company specializing in installation of the products specified in this section, with not less than five years of documented experience.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver material to site in an undamaged condition. Carefully store material off the ground to provide proper protection against oxidation caused by ground moisture.

1.06 WARRANTY

- A. Full warranty against defects in materials and workmanship for four years after substantial completion, including all parts, labor, and expenses.

PART 2 PRODUCTS

2.01 COMPONENTS

- A. Line Posts: 2.38 inch diameter.
- B. Corner and Terminal Posts: 2.88 inch diameter.
- C. Gate Posts: 3-1/2 inch diameter.
- D. Top and Brace Rail: 1.66 inch diameter, plain end, sleeve coupled.
- E. Fabric: 2 inch diamond mesh interwoven wire, 9 gauge, 0.1483 inch thick, top selvage knuckle end closed, bottom selvage knuckle end closed.
- F. Tension Wire: 7 gauge, 0.19685 inch thick steel, single strand.
- G. Tie Wire: Galvanized steel wire.

2.02 SYSTEM DESCRIPTION

- A. Fence Height: 6'-0" height to terminal post with 3 barbed wire strands spaced 3" O.C. 9" above fence as indicated on the Contract Drawings.
- B. Line Post Spacing: Equally spaced where possible, 10'-0" maximum on center.
- C. Manual 16'-0" Double Gate (Swing Gate) as indicated on the Contract Drawings.

2.03 MATERIALS

- A. Posts, Rails, and Frames: ASTM F 1083 Schedule 40 hot-dipped galvanized steel pipe, welded construction, minimum yield strength of 25 ksi.
- B. Wire Fabric: ASTM A 392 zinc coated steel chain link fabric.
- C. Barbed Wire: Aluminum-coated steel, complying with ASTM A121; 2 strands of 0.099 inch diameter wire, with 4-pointed barbs at 3 inches on centers.
- D. Concrete: ASTM C 94/C 94M, ready-mixed; Normal Portland Cement, 2,500 psi strength at 28 days, 3 inch slump; 3/4 inch nominal sized coarse aggregate.

2.04 MANUAL GATES AND RELATED HARDWARE

- A. Manual Double Swing Gates shall be 8'-0" wide each leaf, for a total open width of 16'-0". See Drawings for locations.
- B. Hardware for Double Swinging Gates: 180 degree hinges, 2 for gates up to 60 inches high, 3 for taller gates; Double swing gate shall be provided with a positive center-latching assembly that rigidly secures the two gate leaves together in the closed position without requiring a drop rod into a ground socket for normal gate operation. Provide padlockable latch operable from either side.
- C. Hinges: Finished to match fence components.
 - 1. Brackets: Round.
 - 2. Mounting: Center.
 - 3. Closing: Manual.
- D. Latches: Finished to match fence components.
 - 1. Brackets: Round.

2.05 ACCESSORIES

- A. Post Caps: Pressed steel, cast iron or cast aluminum alloy designed to fit snugly over posts to exclude moisture. Supply dome style caps for terminal posts and loop type for line posts. All fittings to conform to ASTM F626.
- B. Caps, Fittings, and Hardware: Galvanized coating with set screw or other means of retaining.
- C. Rail and Brace Ends: Pressed steel, cast iron or cast aluminum alloy, cup-shaped to receive rail and brace ends.
- D. Truss Rods: Steel rod, 3/8" diameter merchant quality with turnbuckle (take up).

- E. Fittings: Malleable cast iron pressed steel or heavy aluminum.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install framework, fabric, accessories and gates in accordance with ASTM F567.
- B. Set intermediate posts plumb, in concrete footings with top of footing 2 inches above finish grade. Slope top of concrete for water runoff. Post spacing 10'-0" (maximum) or as shown on plans.
- C. Brace each gate and corner post to adjacent line post with horizontal center brace rail and diagonal truss rods. Install brace rail one bay from end and gate posts.
- D. Provide top rail through line post tops and splice with 6 inch long rail sleeves.
- E. Stretch fabric between terminal posts or at intervals of 100 feet maximum, whichever is less.
- F. Position bottom of fabric 2 inches above finished grade.
- G. Fasten fabric to top rail, line posts, braces, and bottom tension wire with tie wire at maximum 15 inches on centers.
- H. Attach fabric to end, corner, and gate posts with tension bars and tension bar clips.
- I. Install bottom tension wire and strap stretched taut between terminal posts; 6" above grade.
- J. Install support arms sloped outward and attach barbed wire; tension and secure.
- K. Install hardware and gate with fabric and other accessories to match fence.
- L. Install gates plumb, level and secure for full opening without interference. Anchor center stops and keepers in concrete.
- M. Fasteners: Install nuts for fittings, bands, and hardware bolts on inside of fence.
- N. Field verify existing fence height, fabric, post configuration, barbed wire, and alignment at proposed tie-in locations. Provide transition posts, braces, fittings, and other appurtenances required for a secure and continuous connection between new and existing fence.

3.02 TOLERANCES

- A. Maximum Variation From Plumb: 1/4 inch.
- B. Maximum Offset From True Position: 1 inch.
- C. Standard plus or minus mill tolerances on all frame work members and chain link fabric will apply.
- D. Do not infringe on adjacent property lines.

3.03 SCHEDULES

- A. See Contract Drawings.

END OF SECTION 32 3113

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**SECTION 32 9219
SEEDING**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Submittals.
- B. Delivery, Storage, and Handling.
- C. Seed Mixture.
- D. Soil Materials and Accessories.
- E. Examination, Grading, Preparation, and Performance.
- F. Seeding, mulching and fertilizer.
- G. Maintenance.

1.02 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Source Quality Control: Manufacturer's test for purity and germination of seed, dated within six months of seeding.
- C. Certificate: Manufacturer's certification that materials meet specifications.

1.03 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, protect and handle products to site under provisions of Section 01 6000.
- B. Deliver grass seed mixture in sealed containers. Seed in damaged packaging is not acceptable. Deliver seed mixture in containers showing percentage of seed mix, year of production, net weight, date of packaging, and location of packaging.
- C. Deliver fertilizer in waterproof bags showing weight, chemical analysis, and name of manufacturer.

PART 2 PRODUCTS

2.01 SEED MIXTURE

- A. Urban Seed Mixture:
 - 1. Seed mixture in accordance with requirements of 9010 of Iowa SUDAS.
 - 2. Kentucky Blue Grass: 70% (Based on 4 lbs. per 1000 sq. ft.).
 - 3. Creeping Red Fescue Grass: 20% (Based on 4 lbs. per 1000 sq. ft.).
 - 4. Norlea Perennial Rye: 10% (Based on 4 lbs. per 1000 sq. ft.).

2.02 SOIL MATERIALS

- A. Topsoil: Fertile, agricultural soil, typical for locality, capable of sustaining vigorous plant growth, taken from drained site; free of subsoil, clay or impurities, plants, weeds roots; rocks larger than 1"; pH value of minimum 5.4 and maximum 7.0.

2.03 ACCESSORIES

- A. Mulching Material: Oat or wheat straw, free from weeds, foreign matter detrimental to plant life, and dry. Hay or chopped cornstalks are not acceptable.
- B. Fertilizer:
 - 1. All areas to be seeded should be fertilized.
 - 2. Fertilizer: Commercial turf establishment fertilizer suitable for the soil and seed mixture specified. Apply at manufacturer's recommended rate for establishment of new turf.
 - 3. Ratio of available nutrients (Nitrogen/Phosphorous/Potassium) shall be 10-6-4. The fertilizer should be uniformly and evenly applied to the areas worked into the soil during seed bed preparation.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that prepared soil base is ready to receive the work of this Section.

3.02 GRADING

- A. Erosion and Drainage: The Contractor shall be responsible for incidental grading on site to eliminate erosion gullies and ruts, and shall provide proper cross section for drainage as directed by Engineer.
- B. Fill Material: If extra earthwork fill is needed, provide fill to conform to lines and grades as shown on the plans.

3.03 PREPARATION

- A. Areas Accessible to Machinery: Thoroughly work areas accessible to field machinery to a depth of not less than three inches (3"). Soil brought to a loose, friable condition, and picked free of rocks and concrete chunks in excess of one inch (1") diameter where weed growth has developed extensively. Use of a disk allowed to disk these weeds into the ground if the weeds can be completely covered by this method.
- B. Areas Inaccessible to Machinery: Prepare areas inaccessible to field machinery by hand to a depth of not less than one and one-half inches (1-1/2"). The soil shall be brought to a loose friable condition.
- C. Notify Engineer prior to permanent seeding. Complete final grading and seedbed preparation before seeding.

3.04 PERFORMANCE

- A. Seed, fertilize, and mulch topsoiled areas and areas disturbed by construction, including areas outside of construction limits and slope intercepts.

3.05 FERTILIZING

- A. Fertilize all areas to be seeded.
- B. Apply fertilizer uniformly and incorporate into the upper portion of the prepared seedbed prior to seeding, in accordance with fertilizer manufacturer's recommendations.
- C. Mix thoroughly into upper 2 inches of topsoil.
- D. Lightly water to aid the dissipation of fertilizer.

3.06 SEEDING

- A. Apply
 1. Perform permanent seeding between March 1 and May 31 or between August 10 and September 30 unless otherwise approved by Engineer.
 2. Rework previously prepared areas that have become compacted or damaged by rains
 3. Do not drill or sow during windy weater, when ground is frozen or un-tillable, immediately following rain, or when ground is too dry.
- B. Reseed areas that fail to establish a uniform, vigorous stand of grass substantially free of bare areas, erosion, and objectionable weeds.
- C. Cover seed depth between 1/4 to 1/2 inch by raking or harrowing.
- D. Firm seeded areas with roller weighing maximum of 100 pounds per foot to width.

3.07 SCHEDULE

- A. Urban area seeding of all grassed areas disturbed by the Contractor's operations.

3.08 MULCHING

- A. Mulch all seeded areas as soon as seed is applied.

3.09 MAINTENANCE

- A. Provide maintenance at no extra cost to Owner; Owner will pay for water.
- B. See Section 01 7000 - Execution Requirements, for additional requirements relating to maintenance service.
- C. Maintain seeded areas immediately after placement until grass is well established and exhibits a vigorous growing condition.
- D. Mow grass at regular intervals to maintain at a maximum height of 2-1/2 inches. Do not cut more than 1/3 of grass blade at any one mowing.
- E. Neatly trim edges and hand clip where necessary.
- F. Immediately remove clippings after mowing and trimming.
- G. Water and maintain areas until 2" catch of grass is obtained.
- H. Roll surface to remove minor depressions or irregularities.
- I. Control growth of weeds. Apply herbicides in accordance with manufacturer's instructions. Remedy damage resulting from improper use of herbicides.
- J. Immediately reseed and mulch areas which show bare spots at no additional cost to Owner.
- K. Protect seeded areas with warning signs during maintenance period.

END OF SECTION 32 9219

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**SECTION 33 0513
MANHOLES AND STRUCTURES**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Submittals.
- B. Quality Assurance.
- C. Delivery, Storage, and Handling.
- D. Precast or cast-in-place concrete manholes, valve vaults, and utility structures with covers, penetrations, anchorage, and accessories.
- E. Restrictions on Operations.
- F. Field Quality Control.
- G. Testing.

1.02 REFERENCE STANDARDS

- A. ASTM A48-83 - Standard Specification for Gray Iron Castings (Class 35).
- B. ASTM A58-83 - Ductile Iron Castings (Grade 65-45-12).
- C. ASTM C478 - Standard Specification for Precast Reinforced Concrete Manhole Sections.
- D. ASTM C478M - Standard Specification for Precast Reinforced Concrete Manhole Sections.
- E. ASTM C497 - Absorption and Concrete Compression Tests.
- F. ASTM C857 - Minimum Design Loading for Underground Precast Concrete Utility Structures.
- G. ASTM C858 - Underground Precast Concrete Utility Structures.
- H. ASTM C890 - Minimum Structural Design Loading for Monolithic or Sectional Precast Concrete Water and Wastewater Structures.
- I. ASTM C923 - Standard Specification for Resilient Connectors Between Reinforced Concrete Manhole Structures, Pipes, and Laterals.
- J. ASTM C923M - Standard Specification for Resilient Connectors Between Reinforced Concrete Manhole Structures, Pipes, and Laterals.
- K. ASTM C990 - Standard Specification for Joints for Concrete Pipe, Manholes, and Precast Box Sections Using Preformed Flexible Joint Sealants.
- L. ASTM D4976 - Standard Specification for Polyethylene Plastics Molding and Extrusion Materials.

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. If manufacturer's test data is inadequate or unavailable, Engineer reserves the right to require cores drilled for compressive strength tests.
- C. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- D. Shop Drawings: Show structure dimensions, wall and slab thicknesses, reinforcement, design loads, lifting provisions, access openings, pipe penetrations, embedded items, joint locations and seals, buoyancy resistance, and required bedding/foundation. Include calculations and drawings sealed by a Professional Engineer licensed in Iowa where delegated design is required.
- E. Product Data: Provide data indicating castings and precast products, manhole covers, component construction, features, configuration, and dimensions.
- F. Project Record Documents:
 - 1. Record location of manholes, connections, and invert elevations.
 - 2. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

1.04 QUALITY ASSURANCE

- A. Certify that manholes are manufactured in accordance with applicable specifications. Provide copies of concrete cylinder compression tests made during manufacture of precast materials.
- B. Provide Iowa Professional Engineer Certification of structure with shop drawing submittal.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products under provisions of Section 01 6000.
- B. Arrange delivery of products in accordance with construction schedules and to allow inspection prior to installation.
- C. Coordinate deliveries to avoid conflict with conditions at site.
- D. Deliver products in undamaged condition in original containers or packaging, with identifying labels intact and legible.
- E. Clearly mark to identify partial deliveries of component parts to facilitate assembly.
- F. Store products immediately on delivery and protect until installed. Storage to be done according to manufacturer's instructions with seals and labels intact and legible.
- G. Provide platforms, blocking or skids, or coverings required to protect products from deterioration or damage.
- H. Arrange storage in a manner to provide easy access for inspection.
- I. Maintain storage conditions to prevent deterioration or damage.
- J. Protect products after installation to prevent damage from subsequent operations. Remove when no longer needed.
- K. Provide equipment and personnel necessary to handle products by methods to prevent damage to products or packaging.
- L. Handle products by methods to prevent bending or overstressing.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Standard manholes and valve vault structures shall consist of precast or cast-in-place base, precast top, precast riser sections, steps, sealant, manhole frame and lid.
- B. Riser Sections: Reinforced precast concrete in accordance with ASTM C478 (ASTM C478M)
- C. Manhole Base: Precast integral concrete manhole bottom section and base, or cast in place concrete, if approved by the Engineer.
- D. Design precast valve vaults and manholes for earth pressure, groundwater, construction loads, and applicable surface live loads indicated on the Drawings. Check structures for flotation/uplift for design groundwater conditions. Delegated engineer license in state of Iowa shall provide design.
- E. Top Slab: Precast Concrete
 - 1. Precast top slab shall be reinforced as shown on Contract Drawings.
 - 2. Valve extension stem shall be cast in the slab with a floor box. A wrench nut shall be attached to the top of the extension stem and level with the top slab surface. Refer to Contract Drawings for details.
- F. Concrete Sections: Riser, base, rings, and special precast sections shall conform to ASTM C478. Base sections shall be cast integrally with the bottom manhole section, unless the manhole is constructed over an existing line or other constraints require block or separate slab/barrel construction. Concrete shall be air-entrained, 5 to 7 percent.
- G. Joints:
 - 1. Joints between concrete sections shall be Rubber O-ring or Profile Gasket conforming to ASTM C443.

2. Alternatively to the Rubber O-ring, or Profile Gaskets, joints may be sealed with Bituminous Jointing Material: Use a cold-applied mastic sewer joint sealing compound recommended by the manufacturer for the intended use and approval by the Engineer. Comply with ASTM C990.
 3. All joints regardless of sealing material shall be wrapped with WrapidSeal manhole encapsulation system (or approved equal).
- H. Sealant:
1. Sonneborn Hydrocide 700B emulsified asphalt damp-proofing compound or approved equal.
 2. Apply to Manhole Exterior per manufacturers recommendations for exterior surfaces below grade - dense surfaces, 2 coats applied by brush or spray.
- I. Castings:
1. ASTM A 48 CLASS 30.
 2. Cast iron covers and frames shall be heavy traffic type, diameter as noted, to meet requirements of the city or the local utility company.
 3. Frames, covers, and access hatches shall be as indicated on the Drawings and suitable for the applicable loading and environment.
 4. Cover: Removable, boltable; closed cover design; cover molded with SANITARY SEWER name.
 5. Castings shall be bolted to the top slab.
 6. Manufacturers:
 - a. Old Castle Precast
 - b. Lindsay Precast
 - c. Engineer Approved Equivalent
- J. Pipe connections:
1. Where pipe enters a new precast manhole:
 - a. Watertight flexible connection meeting requirements of ASTM C923 shall be used.
 - b. Connection cast in the base.
 - c. Minimum clear opening of 24" or 36" as shown on Drawings.
 - d. A-LOK flexible connection or Engineer approved equivalent.
 - 1) Connection to allow differential settlement of pipe and manhole without leakage.
- K. Steps:
1. As detailed in Drawings.
- L. Granular Materials: Furnished for foundation, bedding, encasement, backfill, or other purposes as may be specified. Consists of any natural or synthetic mineral aggregate such as sand, gravel, crushed rock, crushed stone, or slag that shall be so graded as to meet the gradation requirements specified in Section 31 2323.
- M. Concrete fillet: See C and S drawings for requirements.

2.02 CONFIGURATION

- A. Shape: As indicated on Contract Drawings.
- B. Clear Inside Dimensions: As indicated on Contract Drawings.
- C. Design Depth: As indicated on Contract Drawings.
- D. Clear Lid Opening: As indicated on Contract Drawings.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify excavation for manholes is correct.
- B. Verify that field measurements and elevations are as indicated.
- C. Verify that pit cut and excavation base are ready to receive work and excavations, dimensions and elevations are as indicated on Drawings.

3.02 MANHOLES AND VALVE VAULTS

- A. Place concrete base pad, trowel top surface level.
- B. Cut and fit for pipe.
- C. Grout base of shaft sections to achieve slope to exit piping. Trowel smooth. Contour as required.
- D. Manholes, catch basins and other special access structures shall be constructed as designated locations as required by the plans and in accordance with the detail plates.
- E. Place concrete base pad on a minimum of 12" of compacted crushed rock.
- F. When placing the precast base, the bedding shall be solid and compacted to the grade necessary prior to setting the base. Manipulation of the base to achieve the proper grade will not be allowed. If the base is low and needs fill to level it or is high and material must be removed, the base shall be removed, bedding corrected, and the base reset to proper grade.
- G. Only one precast manhole riser section shall be placed upon new poured-in-place concrete bases until the concrete has reached 50% of its design strength.
- H. When exact location of existing sewers to be intercepted is not known, field adjustments may be necessary to meet the conditions found. Such adjustments shall not entitle the Contractor to any claim for extra work.
- I. Place manhole sections plumb and level.
- J. Set cover frames and covers level without tipping, to correct elevations.
- K. Coordinate with other sections of work to provide correct size, shape, and location.

3.03 RESTRICTIONS ON OPERATIONS

- A. Do not place concrete when stormy or inclement weather or temperature prevents good workmanship.
- B. Use no aggregates containing frozen lumps and do not place concrete on frozen foundation.
- C. With weather conditions, begin concrete mixing and placement when ambient temperature is at least 34 degrees Fahrenheit and rising.
- D. Concrete delivered to site must have temperature of at least 40 degrees Fahrenheit.
- E. Stop concrete mixing and placement when ambient temperature is 38 degrees Fahrenheit and falling.
- F. Stop concrete mixing and placement when ambient temperature exceeds 95 degrees Fahrenheit.

3.04 FIELD QUALITY CONTROL

- A. If tests indicate Work does not meet specified requirements, remove work, replace and retest at no cost to the Owner.

3.05 TESTING

- A. Vacuum testing in accordance with ASTM C1244 shall apply only to sanitary manholes specifically identified for testing. For valve vaults: Inspect completed valve vaults for visible infiltration and leakage at joints and penetrations. Repair leaks to provide a watertight structure.
- B. Manhole Infiltration (Vacuum) Test
 - 1. Testing of manholes and structures shall be accomplished by means of a vacuum test in accordance with ASTM C1244-93 "Standard Test Method for Concrete Sewer Manholes by the Negative Air Pressure (Vacuum) Test."
 - 2. The vacuum test shall include testing the top of the manhole, excluding the adjusting rings and manhole frame and cover. Testing will be allowed after backfilling has occurred. Repair of leaks may require the removal and replacement of manhole sections. The use of grout to repair leaks will not be allowed.
 - 3. Procedure
 - a. All lift holes shall be plugged.

- b. All pipes entering the manhole shall be temporarily plugged, taking care to securely brace the pipes and plugs to prevent them from being drawn into the manhole.
- c. The test head shall be placed at the top of the manhole in accordance with the manufacturer's recommendations.
- d. Draw a vacuum in accordance with ASTM C1244-93
- e. Draw a vacuum of at least 10.5 inches of mercury on the manhole, close and remove the vacuum line, and then adjust the vacuum so that the gauge reads 10.0 inches of mercury. If the time for the vacuum gauge reading to drop from 10.0 inches of mercury to 9.0 inches of mercury is equal to or less than the value taken from the following chart, the manhole will have passed the test.

Depth, ft	Diameter, in (Time, Seconds)		
	48	60	72
8	20	26	33
10	25	33	41
12	30	39	49
14	35	46	57
16	40	52	67
18	45	59	73
20	50	65	81
22	55	72	89
24	59	78	97
26	64	85	105
28	69	91	113
30	74	98	121

4. Manhole vacuum tester assembly and vacuum pumps shall be as manufactured by Cherne Industries, Inc. or approved equal.
5. Pneumatic plugs shall be provided and installed in accordance with the above-approved manufacturer's recommendations.
6. The vacuum gauge shall be liquid filled, have 3.5-inch diameter face, and read from 0 to 30 inches of mercury. The test equipment shall allow the installation of two gauges at the same time.

3.06 PROTECTION

- A. Protect finished installation under provisions of Section 01 5000.

END OF SECTION 33 0513

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**SECTION 33 1416
WATER DISTRIBUTION**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Submittals.
- B. Quality Assurance.
- C. Delivery, Storage, and Handling.
- D. Warranty.
- E. Water Pipe for Site Conveyance Lines.
- F. Pipe Valves.
- G. Fittings and Encasement.
- H. Tracer Wire.
- I. Service Line Materials.
- J. Thrust Restraint.
- K. Bedding and Cover Materials.
- L. Installation, Flushing, and Disinfection.
- M. Hydrostatic Testing.
- N. Construction Testing.

1.02 RELATED REQUIREMENTS

- A. Section 31 2316.13 - Trenching: Excavating, bedding, and backfilling.

1.03 REFERENCE STANDARDS

- A. ANSI B16.1 - Cast Iron Pipe Flanges and Flanged Fittings.
- B. ANSI B16.5 - Pipe Flanges and Flanged Fittings.
- C. AWWA C110/A21.10 - Ductile-Iron and Gray-Iron Fittings, American Water Works Association; 2008 (ANSI/AWWA C110/A21.10).
- D. AWWA C153/A21.53 - Ductile-Iron Compact Fittings for Water Service; American Water Works Association; 2006 (ANSI/AWWA C153/A21.53).
- E. AWWA C515 - Reduced-Wall, Resilient-Seated Gate Valves for Water Supply Service; American Water Works Association; 2001 (ANSI/AWWA C515).
- F. AWWA C550 - Protective Epoxy Interior Coatings for Valves and Hydrants; American Water Works Association; 2005 (ANSI/AWWA C550).
- G. AWWA C600 - Installation of Ductile-Iron Mains and Their Appurtenances.
- H. AWWA C605 - Underground Installation of Polyvinyl Chloride (PVC) Pressure Pipe and Fittings for Water; American Water Works Association; 2005 (ANSI/AWWA C605).
- I. AWWA C900 - Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 4 In. through 60 In. (100 mm through 1500 mm).
- J. AWWA C905 - Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 14 inch Through 48 inch for Water Transmission and Distribution; American Water Works Association; 1997 (ANSI/AWWA C905).

1.04 SUBMITTALS

- A. See Section 01 3000 - ADMINISTRATIVE REQUIREMENTS, for submittal procedures.
- B. Product Data: Provide data on pipe materials, pipe fittings, valves and accessories.
- C. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

- D. Project Record Documents: Record actual locations of piping mains, fittings, valves, hydrants, connections, and depth of cover. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.
- E. Test Reports: Indicate results comparative to specified requirements.
- F. Certificate: Certify that cleanliness of water distribution system meets or exceeds specified requirements.
- G. Submit the following as appropriate for each valve and hydrant provided:
 - 1. Outline and installation Drawings for equipment and fixtures furnished.
 - 2. Equipment performance data and operating characteristics.
 - 3. Manufacturer's catalog data, marked to indicate materials being furnished as standard equipment, fixtures, specialties, and accessories.

1.05 QUALITY ASSURANCE

- A. Perform Work in accordance with AWWA C651 requirements.
- B. Pipe: Nominal pipe size, material code designation, standard dimension ratio, pressure rating, manufacturer's name or trade mark, National Sanitation Foundation seal, and appropriate ASTM designation numbers marked on pipe.
- C. Fittings and Valves: Manufacturer's name and pressure rating marked on body.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, protect, and handle products to site under provisions of Section 01 6000.
- B. Deliver and store valves in shipping containers with labeling in place.
- C. Deliver, store and handle materials according to manufacturer's instructions.
- D. Protect plastic materials from sunlight.

1.07 WARRANTY

- A. Correct defective Work within a two year period after Date of Substantial Completion.

PART 2 PRODUCTS

2.01 WATER PIPE

- A. Manufacturers:
 - 1. American.
 - 2. Clow.
 - 3. Griffin.
 - 4. McWane.
 - 5. Tyler.
 - 6. US Pipe.
 - 7. Engineer approved equivalent.
 - 8. Substitutions: See Section 01 6000 - Product Requirements.
- B. PVC Pipe: AWWA C900 Size 4" thru 12"; DR18 (235 psi)
 - 1. PVC pipe shall have same outside dimensions as ductile iron pipe.
 - 2. Do not use PVC pipe in any area where there is likelihood the pipe will be exposed to significant concentrations of pollutants comprised of low-molecular-weight petroleum products or organic solvents or their vapors.
 - 3. Use elastomeric gasketed push-on joints, AWWA C900 or AWWA C905; solvent cement welded joints not permitted.
 - 4. Do not use PVC pipe at stream crossings, inside casing pipe, or adjacent to vertical offsets.
 - 5. Do not telescope small pipe inside larger pipe for shipment or storage.
 - 6. When pipe is cut in field, deburr and bevel cut edges to prevent gasket damage.
 - 7. Protect pipe from prolonged (more than one month) exposure to direct sunlight.
 - 8. Use ductile iron fittings, as specified below.

9. Restrained Joint Pipe:
 - a. AWWA C900 RJ restrained joint PVC pressure pipe and fittings.
 - b. Approved Product: Certa-Lok by Certain-Teed or Engineer approved equivalent.
- C. Restraining mechanisms, tie rods, clamps or other components of dissimilar metal shall be protected against corrosion by hand application of a suitable coating or by encasement of the entire assembly with 8-mil thick (0.2 mm) loose polyethylene film in accordance with AWWA C105/A21.5.

2.02 FITTINGS

- A. General:
 1. Ductile iron compact fittings, mechanical joint, AWWA C153, 350 psi minimum pressure rating in cases where compact fittings are available; ductile iron standard fittings, mechanical joint, AWWA C110, 250 psi minimum pressure rating, only when C153 fittings are unavailable. Asphaltic exterior coating 1-mil thick, AWWA C104 standard thickness interior cement lining with seal coat.
 2. Bolts and nuts as specified for ductile iron pipe.
 3. Wrap fittings with polyethylene film, as specified for ductile iron pipe.
- B. Flange Adapters: Where indicated on the drawings and in these specifications. The intended use is to connect flange joint valves, fittings, and pipe to a plain end pipe. Flange joint shall match dimensions of Class 125, ANSI B16.1 and capable of being joined to Class 150, ANSI B16.5. Unless otherwise indicated, flange adapters shall have thrust protection such as set screws or anchor studs. Adapters shall be watertight at a working pressure of 150 psi. Flange adapters shall be Series 2100 by EBAA Iron Sales, Inc., dismantling joints with 304 SS tie rods by Viking Johnson, or Engineer approved equivalent.
- C. Couplings: Install where indicated on the Drawings. Ductile iron with stainless steel bolts and nuts. Working pressure of 150 psi. Type 441 by Smith-Blair, Inc., or Engineer approved equivalent.
- D. Mechanical Joint Retainer Glands: Install on all joints on all fittings, valves, and hydrants. Megalug by EBAA Iron Sales, Inc., Uni-Flange Series 1400 and 1500 mechanical joint retainer glands by The Ford Meter Box Company will be allowed, or Engineer approved equivalent.
- E. Anchoring Pipe and Couplings: Install where indicated on the Drawings. Utilized for hydrant leads, branch line stubs, and dead ends, in conjunction with mechanical joint pipe, fittings, valves, and hydrants. Clow MJ anchoring pipe, couplings, and fittings or Engineer approved equivalent.
 1. Quality standards for specialty fittings: Use the following Clow Corporation catalog numbers, or Engineer approved equivalent: Anchoring Couplings F-1211; Anchoring Tees F-1217; Anchoring Elbows F-1218; Anchoring Pipe F-1216; and Hydrant Tees F-1224.
- F. Mechanical Joint Adaptors: Use for joining MJ valves and fittings where plain-end fitting is unavailable for insertion into mating MJ. Adaptor shall be bolt-through positive restraint mechanism manufactured of ductile iron. Adaptor shall have asphaltic coating in accordance with AWWA C153/A21.53 and AWWA C104/A21.4, and sized for fittings specified above. Working pressure 350 psi minimum. INFACT Corporation Foster Adaptor or engineer approved equivalent.

2.03 POLYETHYLENE ENCASEMENT

- A. Polyethylene encasement, flat sheet or split tube, 8 mil (0.20mm) thickness, as per AWWA C105, for use with all buried ductile iron and steel pipe, fittings, valves and operators, and hydrants.

2.04 TRACER WIRE

- A. Use tracer wire with PVC pipe: No. 12 AWG solid copper conductor with Type PE insulation.
- B. Splices: Tracer-wire splices and connections shall be made using waterproof, corrosion-resistant connectors specifically designed for direct burial. Use rosin core solder and plastic electricians tape.
- C. Ground Rod: Copperweld or equal.

2.05 VALVES

- A. Resilient Seated Gate Valves: AWWA C509. All valves shall be of the iron-body resilient-wedge type with non-rising stems, sizes 3 inch NPS through 24 inch NPS in diameter.
1. All valves by the same manufacturer.
 2. Body, Bonnet, Stuffing Box: Cast iron or ductile iron.
 3. Bolts and Nuts: Stainless steel.
 4. Valve Ends: Mechanical joint or push-on ends.
 5. Wedge: Cast iron or ductile iron, resilient coated.
 6. Stem: Manganese bronze, non-rising stem.
 7. Seals: Synthetic rubber O-rings.
 8. Stem Extensions: Steel, noted on the Drawings if required.
 9. Operator: 2" square nut.
 10. Coating: AWWA C550 epoxy coating, both inside and outside of body, bonnet, and stuffing box.
 11. Pressure Rating: 200 psi, bubble-tight closure.
 12. Direction of Operation: Counterclockwise to open.
 13. Smooth, unobstructed waterway with a diameter not less than the full nominal diameter of the valve.
 14. Wrap valves with polyethylene encasement.
 15. Approved Manufacturers:
 - a. American Flow Control, Model: Series 2500.
 - b. Clow, Model: F-6100.
 - c. Mueller, Model: Resilient Wedge.
 - d. Waterous, Model: Series 500.
 - e. Engineer approved equivalent.
- B. Valve Boxes: Furnish valve boxes for all buried valves. Boxes shall include standard or oval base as required, center section(s) and top section with cover. Boxes cast iron with screw type adjustment. For valves on finished water system, the cover shall be marked WATER. Provide Tyler series 6855 for valves less than 12" diameter, and Tyler series 6860 for valves 12" diameter and larger, or Engineer approved equivalent.

2.06 FROST PROOF YARD HYDRANT

- A. Design:
1. Hydrant shall be non-freezing, sanitary-type hydrant suitable for potable or plant water service and high-flow washdown use.
 2. Minimum inlet size: 2 inches unless otherwise indicated.
 3. Outlet: 1-1/2-inch or 2-inch hose connection compatible with Owner's washdown hose and fittings.
 4. Hydrant shall drain automatically below frost depth when closed without permitting groundwater intrusion into the waterway.
 5. Provide lockable operating handle or other means to prevent unauthorized use.
 6. Hydrant and buried piping shall be suitable for minimum 150 psi working pressure.
 7. Provide hydrant support, drainage stone, and installation as detailed on the Drawings.
- B. Design:
1. Cast iron valve body.
 2. Brass hardware.
 3. Lockable pistol type handle.
 4. Handwheel adjustment.
 5. Plunger replaceable without removing hydrant from ground.
 6. Standard garden hose thread.
 7. Frost proof.
 8. 5 foot bury.

- C. Approved Manufacturers:
 - 1. Murdock Model M-200.
 - 2. Engineer approved equivalent.

2.07 THRUST RESTRAINT

- A. Mechanical Restraint:
 - 1. Provide restrained joints at fittings, valves, hydrants, bends, tees, dead ends, and other locations indicated. Design restraint length in accordance with pipe/restraint manufacturer recommendations for actual pipe size, pressure, soil conditions, and fitting geometry
- B. Concrete Restraint:
 - 1. Concrete thrust blocks are not required where a complete restrained-joint system is provided unless specifically indicated on the Drawings.

2.08 BEDDING AND COVER MATERIALS

- A. Bedding: As specified in Section 31 2323.
- B. Cover: As specified in Section 31 2323.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that trench cut and excavation base are ready to receive work and excavations, dimensions, and elevations are as indicated on Drawings.
- B. Verify that piping system has been cleaned, inspected and pressure tested.
- C. Perform scheduling and disinfection activity with startup, testing, adjusting and balancing, demonstration procedures, including coordination with related systems.

3.02 PREPARATION

- A. Cut pipe ends square, ream pipe and tube ends to full pipe diameter, remove burrs.
- B. Remove scale and dirt on inside and outside before assembly.
- C. Prepare pipe connections to equipment with flanges or unions.

3.03 INSTALLATION - PIPE

- A. Install pipe to slope gradients noted on drawings.
- B. Install pipe and appurtenances in accordance with AWWA C600 or C605.
- C. Handling: Handle pipe and appurtenances in such a manner as to ensure delivery to the trench in a sound, undamaged condition. Use of web slings or end hooks not allowed.
- D. Inspection for Defects: Before installation, inspect pipe and appurtenances for defects and, when applicable, tap the pipe with a light hammer to detect cracks. Reject defective, damaged, or unsound pipe and appurtenances.
- E. Cutting: Cut pipe, when necessary, in a neat and workmanlike manner without damage to the pipe, interior lining, and exterior coating. Perform cutting with an approved mechanical cutter, using a wheel cutter when applicable and practicable.
- F. Beveling: Grind smooth and bevel cut ends and rough edges using methods recommended by the manufacturer and approved by Engineer.
- G. Pipe Joints: Pipe joints in accordance with AWWA C600 or C605 and as recommended by manufacturer; use minimum amount of gasket lubricant; apply to gasket only; do not apply lubricant to inside of bell.
- H. Cleaning and Protection: Thoroughly clean each piece of pipe, valve, and fitting before lowering into trench; keep clean at all times; when pipe laying is not in progress, including lunch breaks, nights, weekends, and other non-working periods, securely close open ends of pipe and fittings with watertight plugs.
- I. Pipe Deflections:

1. Deflections from a straight line or grade, as required by vertical curves, horizontal curves, or offsets, shall not exceed the manufacturer's recommendations for the type and size of pipe and joint being used.
 2. If the alignment requires deflections in excess of the manufacturer's limitations, then bend fittings or a sufficient number of shorter lengths of pipe shall be utilized to provide angular deflections within the limits set forth.
- J. Pipe Gradient:
1. In certain instances, it may be required that a positive gradient be maintained for pressure lines. All such locations are noted on the Drawings.
- K. Depth of Cover: The depth of cover over water mains from the top of the pipe to the ground surface shall be sufficient to prevent freezing. The minimum depth shall be 6'-0", or otherwise as shown on the Drawings.

3.04 INSTALLATION - VALVES, HYDRANTS, BACKFLOW PREVENTERS

- A. Set valves and hydrants on solid bearing.
- B. Center and plumb valve box over valve. Set box cover flush with finished grade.
- C. Install all buried valves and operators and hydrants with polyethylene encasement, 8-mil (0.20 mm) thickness, as per AWWA C105.

3.05 PROTECTION

- A. Protect finished installation under provisions of Section 01 5000.

3.06 HYDROSTATIC TEST

- A. Test all pressure lines for leakage after satisfactory completion of cleaning, flushing, and disinfection of piping and appurtenances.
- B. Test using Ashcroft Model 1082 with 4.5" dial face at 1 psi increments.
- C. Subject newly laid piping or any valved section of piping to a hydrostatic pressure test for at least two hours.
- D. Conduct pressure tests on individual piping sections between valves in order to test the integrity of the valves as well as the piping.
- E. The test pressure shall be 150 psi, or as directed by Engineer. The test pressure not less than 1.25 times the working pressure at the highest point along the test section and not less than 1.5 times the working pressure at the point of testing.
- F. Pressure shall be maintained for a minimum of 2 hours.
- G. Before applying the pressure, completely expel air from the system being tested.
- H. Install, at Contractor's expense, corporation cocks as required at all high points in the system if necessary to completely expel all air.
- I. After all the air has been expelled, remove corporation cocks and plug or close prior to testing. Owner to determine whether the corporation cocks are removed or left in place.
- J. Perform leakage test if requested in writing by Engineer. Leakage tests will be required after unsatisfactory hydrostatic pressure tests.
- K. Satisfactory hydrostatic pressure results are 1 psi or less of pressure loss over 2 hours.
- L. At the option of the Engineer, pressure and leakage tests may be conducted simultaneously.
- M. Determine amount of leakage by adding water to the system by means of a pump where pressure within the system is maintained within 5 psi of the test pressure.
- N. Allowable leakage shall not exceed 11.65 gallons per mile per inch diameter per 24 hours for pipe in 18 foot lengths, 10.5 gallons for pipe in 20' lengths, and proportionally varied for other lengths at a test pressure of 150 psi.

- O. When testing at pressures other than 150 psi, allowable leakage shall not exceed that computed as follows: $L = (ND \times \text{Square Root}[P]) / 7400$. Where L=Allowable leakage (gallons per hour), N=Number of joints in length being tested, D=Nominal diameter of the pipe (inches), and P=Average test pressure (psi gauge)
- P. When testing against closed metal-seated valves, an additional leakage per closed valve of 0.0078 gallons per hour per inch of nominal valve size is allowed.
- Q. Perform the test against closed hydrant, with the auxiliary valve open.
- R. Determine acceptance on the basis of allowable leakage.
- S. If any test of pipe laid discloses leakage greater than that specified above, the Contractor shall, at his expense, locate and repair the defective material until the leakage is within the specified allowance.
- T. Repair all visible leaks regardless of the amount of leakage.
- U. Damaged or defective pipe, fittings, valves, hydrants, or joints discovered in the pressure test shall be replaced by the Contractor and the test repeated until the test results are satisfactory.

3.07 RESTRAINT

- A. Anchorage:
 - 1. Provide anchorage lugs for flanged or bell and spigot fittings and/or socket clamps with interconnecting tie rods where there is a possibility of pulling of the joint under pressure.
- B. Restrained Joint Ductile Iron Pipe:
 - 1. Provide restrained joint ductile iron pipe as indicated on the Drawings.
 - 2. Submit restrained joint styles and detailed designs by the pipe manufacturer to Engineer prior to manufacture. Include detailed laying schedules.
- C. Concrete Thrust Block:
 - 1. Provide concrete thrust blocks at bends, tees, and dead ends placed against undisturbed soil.
 - 2. See Thrust Block Details on the drawings.

END OF SECTION 33 1416

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**SECTION 33 3111
SANITARY SEWER PIPING**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Submittals.
- B. Quality Assurance.
- C. Delivery, Storage, and Handling.
- D. Project Conditions.
- E. Force Main Materials.
- F. Fittings, Polyethylene Encasement, and Pipe Accessories.
- G. Bedding and Cover Materials.
- H. Preparation, Trenching, and Pipe Installation.
- I. Conflict With Existing Utilities and Protection of Water Supplies.
- J. Field Quality Control.
- K. Testing.

1.02 RELATED REQUIREMENTS

- A. 22 1116 - Ductile Iron Piping
 - 1. Buried Sanitary Sewer Piping shall transition to Ductile Iron Pipe meeting the requirements of Section 22 1116 above grade and in exposed areas such as valve vaults.

1.03 REFERENCE STANDARDS

- A. ASTM D1784-08 - Standard Specification for Rigid Poly Vinyl Chloride (PVC) Compounds and Chlorinated Poly Vinyl Chloride (CPVC) Compounds.
- B. ASTM D 2241 - Standard Specification for Polyvinyl Chloride (PVC) Pressure-Rated Pipe (SDR Series).
- C. ASTM D3139-98 - Standard Specification for Joints for Plastic Pressure Pipes Using Flexible Elastomeric Seals.
- D. ASTM F 477 - Standard Specification for Elastomeric Seals (Gaskets for Joining Plastic Pipe).
- E. AWWA C900-07 - Standard for Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 4 in. through 12 in., for Water Transmission and Distribution.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data indicating pipe and pipe accessories.
- C. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- D. Project Record Documents:
 - 1. Record location of pipe runs, connections, manholes, cleanouts, and invert elevations.
 - 2. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

1.05 QUALITY ASSURANCE

- A. Certify that pipe, fittings, and materials are manufactured in accordance with applicable specifications.
- B. Certify that pipe materials and special fittings are manufactured in accordance with applicable specifications.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products under provisions of Section 01 6000.
- B. Arrange delivery of products in accordance with construction schedules and to allow inspection prior to installation.
- C. Coordinate deliveries to avoid conflict with conditions at site.
- D. Deliver products in undamaged condition in original containers or packaging, with identifying labels intact and legible.
- E. Clearly mark to identify partial deliveries of component parts to facilitate assembly.
- F. Store products immediately on delivery and protect until installed. Storage to be done according to manufacturer's instructions with seals and labels intact and legible.
- G. Provide platforms, blocking or skids, or coverings required to protect products from deterioration or damage.
- H. Arrange storage in a manner to provide easy access for inspection.
- I. Maintain storage conditions to prevent deterioration or damage.
- J. Protect products after installation to prevent damage from subsequent operations. Remove when no longer needed.
- K. Provide equipment and personnel necessary to handle products by methods to prevent damage to products or packaging.
- L. Handle products by methods to prevent bending or overstressing.

1.07 PROJECT CONDITIONS

- A. Coordinate the work to connect buried piping to piping from structures and buildings
- B. Coordinate the work with other underground utilities

PART 2 PRODUCTS

2.01 PIPE MATERIALS

- A. Solid Wall Polyvinyl Chloride (PVC) Pipe, 4-inch to 24-inch
 - 1. Comply with AWWA C900 with ductile iron pipe equivalent outside diameters.
 - 2. Minimum Wall Thickness: Class 235 DR 18.
 - 3. PVC Plastic: ASTM D 1784, Cell Classification 12454
 - 4. Joint Type: All joints shall be restrained:
 - a. Integral Restrained Joint: Comply with AWWA C900 with restraining system manufactured integrally into pipe end
 - b. Mechanical Restrained Joint: Ductile iron mechanical device designed for joint restraint of AWWA C900 pipe complying with ASTM F 1674. Push on-joints according to AWWA C900.

2.02 FITTINGS

- A. General:
 - 1. Ductile iron compact fittings, mechanical joint, AWWA C153, 350 psi minimum pressure rating in cases where compact fittings are available; ductile iron standard fittings, mechanical joint, AWWA C110, 250 psi minimum pressure rating, only when C153 fittings are unavailable. Asphaltic exterior coating 1-mil thick. Interior lining shall follow requirements in sections 22 1116 and 22 1117.
 - a. Fittings shall include gaskets, glands, bolts, and nuts.
 - 2. Bolts and Nuts: Fluorocarbon coated cor-ten steel t-bolts and nuts equal to NSS cor-blue or High-strength low-alloy corrosion-resistant steel in accordance with ANSI/AWWA C111/A21.11.
 - 3. Wrap fittings with AWWA C105 polyethylene jacket.
 - 4. Restrained Joint Fittings - 4" through 48":

- a. Restraining mechanisms shall provide wedges or full circle contact and support of the pipe wall. Restraint shall be accomplished by a series of ring wedge segments mechanically restrained inside the gland housing and designed to grip the pipe wall in an even and uniform manner. Restrained devices shall be actuated by bolts featuring twist off heads to ensure proper installation torque is applied. All components of the restrainer, including the gland, bolts, and restraint segments shall be of high strength ductile iron, ASTM A536.
 - 1) Manufacturers:
 - (a) EBAA Iron Sales, Inc.: Series 2000PV Mechanical Joint Restraint Gland.
 - (b) Engineer Approved Equivalent.

2.03 POLYETHYLENE ENCASEMENT

- A. Polyethylene encasement, flat sheet or split tube, 8 mil (0.20mm) thickness, as per AWWA C105, for use with all buried ductile iron and steel pipe, fittings, valves and operators, and hydrants.
- B. Polyethylene shall be cut 2 feet longer than the pipe section and shall overlap the ends of the pipe by 1 foot.
- C. Gather and lap the polyethylene to provide a snug fit and secure at quarter points and each end with polyethylene tape.

2.04 PIPE ACCESSORIES

- A. Flange Adaptors: See Section 22 1116.01
- B. Couplings: See drawings. Connections to existing piping shall be made with ductile iron solid sleeve meeting 22 1116.
- C. Tracer Wire
 1. Use tracer wire with Force Main PVC pipe: No. 12 AWG solid copper conductor with Type HMWPE OR HDPE insulation intended for direct bury and shall be rated 600V where run in conduits with conductors operating over 30V.
 2. All tracer wire color coded per APWA standard: Green for Sewage.
 3. Splices: Tracer-wire splices and connections shall be made using waterproof, corrosion-resistant connectors specifically designed for direct burial.
 4. Ground Rod:
 - a. Copperweld or equal. Minimum 4-foot by 3/8-inch drive-in grounding rod. Ground wire shall extend up through the valve box, reaching at least 24-inches above grade.
 5. Terminal Box:
 - a. Tracer wire shall be brought to the surface at end of pipe or at intersection of main and service line next to a manhole, valve, vault, or building wall in a standard East Jordan 8550 valve box. Terminal Box covers provided by Operator.
 - b. Tracer wires and ground wires shall be terminated in an Erico Intersystem Bonding Termination Bar, or Equivalent.
 6. 2 inches wide detectable magnetic marking tape, green, buried 12 inches to 18 inches above pipe.

2.05 BEDDING AND COVER MATERIALS

- A. Pipe Bedding Material: As specified on drawings.
- B. Pipe Cover Material: As specified on drawings.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements and elevations are as indicated on the Drawings.

3.02 PREPARATION

- A. Cut pipe ends square, ream pipe and tube ends to full pipe diameter, remove burrs.
- B. Remove scale and dirt on inside and outside before assembly.

3.03 TRENCHING

- A. Refer to Trenching section 31 2316.13.
- B. Hand trim excavation for accurate placement of pipe to elevations indicated.
- C. Backfill around sides and to top of pipe with cover fill, tamp in place and compact, then complete backfilling.

3.04 INSTALLATION - PIPE

- A. Bench Marks and Stakes: Before laying pipe, verify all measurements at sits; make necessary field measurements to accurately determine sewer makeup lengths or closures. Preserve bench marks and stakes.
- B. Verify that trench cut and excavation base are ready to receive work and excavations, dimensions, and elevations are as indicated on drawings.
- C. Inspection for defects: Before installation, inspect pipe and appurtenances for defects and, when applicable, tap the pipe with a light hammer to detect cracks. Defective, damaged, or unsound pipe and appurtenances will be rejected.
- D. Do not displace or damage pipe when compacting.
- E. Install pipe, fittings, and accessories in accordance with these specifications and manufacturer's instructions. Seal watertight.
- F. Handling: Handle pipe and appurtenances in such a manner as to ensure delivery to the trench in a sound, undamaged condition.
- G. Cutting: Cut pipe, when necessary, in a neat and workmanlike manner without damage to the pipe, interior lining, and exterior coating. Perform cutting with an approved mechanical cutter, using a wheel cutter when applicable and practicable.
- H. Beveling: Grind smooth and bevel cut ends and rough edges using methods recommended by manufacturer.
- I. Assembling Pipe and Fitting Joints:
 - 1. General:
 - a. Assemble all joints in accordance with the manufacturer's recommendations.
 - b. Make joints with equipment recommended by pipe manufacturer; do not use backhoe to push joints together.
 - c. Remove all lumps, blisters, and excess coating material from the ends of the pipe.
 - d. Remove all oil and grease from the ends of the pipe.
 - e. Wipe clean and dry the outside of the spigot end, the inside of the bell, and the gasket, and keep free from dirt, sand, grit, or any foreign materials before the pipe is laid.
 - 2. Push-on Joints:
 - a. Place the gasket, if necessary, in the bell socket in accordance with the manufacturer's recommendations. Make sure the gasket faces the correct direction and that it is properly seated.
 - b. Apply lubricant to the gasket and spigot end of the pipe in accordance with the manufacturer's recommendations.
 - c. Insert the beveled end of the spigot into the gasket in the bell end of the previously laid pipe section.
 - d. Push or pull the pipe "home" into the bell socket with care so not to damage piping, linings, coatings, or gaskets.
 - e. Pushing and pulling methods and means of protection of piping and appurtenances in accordance with the manufacturer's recommendations and approved by the Engineer.
 - f. Keep joint straight while pushing or pulling.
 - 3. Couplings:
 - a. Cut and smooth ends of existing and new pipe to fit; follow requirements above for cutting and beveling.

- b. Install flexible watertight coupling, following manufacturer's installation instructions.
 - c. Do not exceed manufacturer's recommended torque limits.
- J. Laying of Pressure Lines:
 - 1. Pipe deflections:
 - a. Deflections from a straight line or grade, as required by vertical curves, horizontal curves, or offsets, shall not exceed the manufacturer's recommendations for the type and size of pipe and joint being restrained.
 - b. If the alignment requires deflections in excess of the manufacturer's limitations, then bend fittings, rotate fittings, or a sufficient number of shorter lengths of pipe shall be used to provide angular deflections within the limits set forth.
 - 2. Pipe Gradient:
 - a. In certain instances, it may be required that a positive gradient be maintained for pressure lines.
 - b. Where end point and/or fitting elevations are given on a pipe, a constant slope shall be provided between joints, after any necessary vertical deflections are obtained.
- K. Cleaning and Protection of Pipelines:
 - 1. Interior of the pipe clear of all dirt and superfluous materials.
 - 2. Whenever the pipe layers leave the trench for any reason, no matter for how short a time, effectively close the exposed end of the pipe to prevent the entrance of animals, dirt, or foreign objects.

3.05 CONFLICT WITH EXISTING UTILITIES

- A. Provide temporary support for existing water, gas, telephone, power, and other utility services that cross trench until backfilling of the trench has been completed.
- B. Compact backfill under existing utility crossing to 95% maximum density; moisture content not less than 2% below optimum or more than 3% above optimum moisture content.

3.06 PROTECTION OF WATER SUPPLIES

- A. When wastewater sewers are proposed in the vicinity of any water supply facilities, construction shall conform to acceptable isolation distances in the following requirements:
 - 1. Horizontal Separation - Sewers shall be laid at least 10 feet (3.0 m) horizontally from any existing or proposed water main. The distance shall be measured edge to edge. In cases where it is not practical to maintain a 10 foot (3.0 m) separation, the Department of Natural Resources ("Department") may allow deviation on a case-by-case basis, if supported by data from the design engineer. Such deviation may allow installation of the gravity sewer closer to a water main, provided that the water main is in a separate trench or on an undisturbed earth shelf located on one side of the gravity sewer and at an elevation so the bottom of the water main is at least 18 inches (450 mm) above the top of the sewer.
 - 2. If it is impossible to obtain proper horizontal and vertical separation as described above for gravity sewers, both the water main and gravity sewer must be constructed of slip-on or mechanical joint pipe complying with public water supply design standards of the Department and be pressure tested to 150 psi (1034 kPa) to assure watertightness.
 - 3. Sewers Crossing Under Water Mains - The sewer shall be laid to provide a minimum of 18 inches (450 mm) from the top of the sewer to the bottom of the water main. The crossing shall be arranged so that the sewer joints will be equidistant and as far as possible from the water main joints.
 - 4. Sewers Crossing Over Water Mains - Either the water main or the sewer main must be encased in a watertight carrier pipe that extends 10 feet (3.0m) on both sides of the crossing, measured perpendicular to the water main. The carrier pipe shall be PVC, ABS, or HDPE, and the ends sealed with a rubber gasket or boot.
- B. Cross Connections Prohibited

3.07 FIELD QUALITY CONTROL

- A. Perform field inspection and testing in accordance with Section 01 4000.

- B. If tests indicate Work does not meet specified requirements, remove Work, replace and retest at no cost to Owner.

3.08 TESTING

A. Hydrostatic Test

1. Test all pressure lines for leakage after satisfactory completion of cleaning and flushing of piping and appurtenances.
2. Test using Ashcroft Model 1082 with 4.5" dial face at 1 psi increments.
3. Subject newly laid piping or any valved section of piping to a hydrostatic pressure test for at least two hours.
4. Conduct pressure tests on individual piping sections between valves in order to test the integrity of the valves as well as the piping.
5. The test pressure shall be as directed by Engineer. The test pressure not less than 1.25 times the working pressure at the highest point along the test section and not less than 1.5 times the working pressure at the point of testing.
6. Pressure shall be maintained for a minimum of 2 hours.
7. Before applying the pressure, completely expel air from the system being tested.
8. Install, at Contractor's expense, corporation cocks as required at all high points in the system if necessary to completely expel all air.
9. After all the air has been expelled, remove corporation cocks and plug or close prior to testing. Owner to determine whether the corporation cocks are removed or left in place.
10. Perform leakage test if requested in writing by Engineer. Leakage tests will be required after unsatisfactory hydrostatic pressure tests.
11. Satisfactory hydrostatic pressure results are 1 psi or less of pressure loss over 2 hours.
12. At the option of the Engineer, pressure and leakage tests may be conducted simultaneously.
13. Determine amount of leakage by adding water to the system by means of a pump where pressure within the system is maintained within 5 psi of the test pressure.
14. When testing at pressures other than 150 psi, allowable leakage shall not exceed that computed as follows: $L = (ND \times \text{Square Root}[P]) / 7400$. Where L=Allowable leakage (gallons per hour), N=Number of joints in length being tested, D=Nominal diameter of the pipe (inches), and P=Average test pressure (psi gauge)
15. When testing against closed metal-seated valves, an additional leakage per closed valve of 0.0078 gallons per hour per inch of nominal valve size is allowed.
16. Determine acceptance on the basis of allowable leakage.
17. If any test of pipe laid discloses leakage greater than that specified above, the Contractor shall, at his expense, locate and repair the defective material until the leakage is within the specified allowance.
18. Repair all visible leaks regardless of the amount of leakage.
19. Damaged or defective pipe, fittings, valves, hydrants, or joints discovered in the pressure test shall be replaced by the Contractor and the test repeated until the test results are satisfactory.

3.09 PROTECTION

- A. Protect pipe and bedding cover from damage or displacement until backfilling operation is in progress.

END OF SECTION 33 3111

**SECTION 33 3613
BOLTED STEEL WASTEWATER STORAGE TANK**

PART 1

1.01 SECTION INCLUDES

- A. Furnish and erect one open top, thermoset epoxy powder coated bolted-steel flow equalization tank, including tank structure, and tank appurtenances as shown on the Contract Drawings and described herein.
- B. Tank shall be installed atop reinforced concrete foundation slab and/foundation stem wall system.

1.02 REFERENCE STANDARDS

- A. 29 CFR 1910, Subpart D - Walking-Working Surfaces, 1910.21-1910.30.
- B. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
- C. ASTM A234/A234M - Standard Specification for Piping Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and High Temperature Service.
- D. ASTM C509 - Standard Specification for Elastomeric Cellular Preformed Gasket and Sealing Material.
- E. ASTM F593 - Standard Specification for Stainless Steel Bolts, Hex Cap Screws, and Studs.
- F. AWWA D103 - Factory-Coated Bolted Carbon Steel Tanks for Water Storage.
- G. ISO 9001 - Quality Management Systems — Requirements.
- H. SSPC-SP 3 - Power Tool Cleaning; 2024.
- I. ASTM A 36 - Standard Specification for Structural Steel.
- J. ASTM A325 - Standard Specification for High-Strength Bolts for Structural Steel Joints.
- K. ASTM A325 - Standard Specification for Steel, Sheet and Strip, Carbon, Hot-rolled, Structural Quality.
- L. ASTM A607 - Standard Specification for Steel, Sheet and Strip, High-Strength, Low-Alloy, Columbium or Vanadium, or Both, Hot-Rolled and Cold-Rolled.
- M. AWS American Welding Society Current Standards
- N. Aluminum Association Specifications for Aluminum Structures.
- O. Aluminum Association's Aluminum Design Manual.
- P. SSPC-SP 10 - Near-White Blast Cleaning ; 2000 (Ed. 2004).

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Manufacturer's published literature describing capacity, fittings, equipment, and paint.
- C. Shop Drawings:
 - 1. Tank
 - a. Fabrication and installation details for tank, supports, fittings, and equipment.
 - b. Structural analysis data signed and sealed by design engineer licensed in the State of Iowa.
 - c. Drawings showing bolted steel tank, plan and elevation details, shell plates, openings, connections for fittings and appurtenances.
 - d. Report of coating testing completed.
 - e. Manufacturer shall provide starter ring geometry, anchorage/leveling details, concrete dimensional tolerance requirements, foundation loads/reactions, and other embedded/interface requirements needed to coordinate with the structural design.

- D. The tank manufacturer shall submit detailed erection drawings and specifications.
- E. Tank manufacturer shall provide all items as shown on Contract Drawings and specified herein.
- F. Operation and Maintenance Data.

1.04 DELIVERY, STORAGE AND HANDLING

- A. Store products immediately on delivery and protect until installed. Storage to be done according to manufacturer's instructions with seals and labels intact and legible.
- B. Provide platforms, blocking or skids, or coverings required to protect products from deterioration or damage.
- C. Arrange storage in a manner to provide easy access for inspection.
- D. Maintain storage conditions to prevent deterioration or damage.
- E. Protect products after installation to prevent damage from subsequent operations. Remove when no longer needed.
- F. Handling:
 - 1. Provide equipment and personnel necessary to handle products by methods to prevent damage to products or packaging.
 - 2. Handle products by methods to prevent marring, denting, or stressing.

1.05 QUALITY ASSURANCE

- A. Design Engineer's Qualifications: Professional engineer licensed to practice in Iowa, employed by tank manufacturer and capable of assuming responsibility for structural design of tank, fittings, and supports, excluding foundations; engineering design conducted for a different project not more than five (5) years earlier will be acceptable provided design conditions are the same.
- B. The tank manufacturer shall be a specialist in the design, fabrication, and erection of factory-coated bolted steel tanks. The manufacturer shall be quality certified, have either an active API-Q1 and ISO 9001 registration or follow AWWA D103-19 and have an SSPC Q3 certification.
- C. Tank manufacturer: At least five (5) wastewater tanks currently in service, of similar size and character required for this Project, and a minimum of five (5) years satisfactory operation.
- D. Tank installer: Certified by tank manufacturer that installer is qualified to do the Work.
- E. Tank Manufacturer's Site Representative: Certified by tank manufacturer that the representative is qualified and experienced in the type of Work to be performed.

1.06 INSPECTION

- A. On or near the one year anniversary date of initial tank use (but not more than 14 months from date of delivery of tank materials to job site) the manufacturer's authorized dealer shall make a visual inspection of the tank interior coating and appurtenances; tank exterior coating and appurtenances; and the immediate area surrounding the tank. A written summary of this inspection will be filed with tank owner and the tank manufacturer.

1.07 WARRANTY

- A. The tank manufacturer shall include a warranty for the tank materials and coating. As a minimum, this warranty shall provide assurance against defects in material or workmanship for the period of two (2) years. Warranty shall start from the date of Substantial Completion of project by Owner.

1.08 SPECIAL EXTENDED COATING WARRANTY

- A. The tank manufacturer shall provide a comprehensive, non-prorated, five (5) year extended warranty specifically covering the internal factory-applied epoxy coating system against failures including blistering, checking, cracking, flaking, delamination, or premature corrosion perforation.
- B. The manufacturer certifies that the specified factory epoxy lining is fully chemically compatible with raw municipal wastewater, including continuous immersion and prolonged exposure to vapor space concentrations of hydrogen sulfide (H₂S) gas, methane, and organic acids.

- C. In the event a coating defect or premature corrosion failure occurs within the five (5) year warranty period, the tank manufacturer, or their certified factory-authorized dealer, shall provide all specialized field labor, blasting equipment, materials, scaffolding, and supervision necessary to repair or replace the affected panels or linings at no additional cost to the Owner.
- D. This extended coating warranty shall be executed directly by the tank manufacturer and issued in the name of the Owner.

PART 2

2.01 MANUFACTURERS

- A. Wastewater Storage Tanks:
 - 1. United Industries Group
 - 2. Forge Global
 - 3. Tarsco Bolted Tank
 - 4. CST Industries, Inc.
 - 5. Engineer approved equivalent.

2.02 GENERAL

- A. The Contractor shall be responsible for the design, supply and erection of the bolted steel tank. The bolted steel tank dimensions specified are the standard for one tank manufacturer. If alternate manufacturers and/or sizes are supplied which differ from the requirements specified hereinafter, the Contractor shall be responsible, and bear all associated costs associated with the change. Additional costs associated with changing the size of the bolted steel tank shall include but not be limited to the following:
 - 1. Re-design and construction of site work including piping, excavation, and other affected areas of work.
 - 2. Re-design and construction of concrete foundations.

2.03 TANK DESIGN CRITERIA

- A. Contractor shall be responsible for design of the bolted steel tank and tank starter ring.
- B. Flow Equalization Tank:
 - 1. Nominal Diameter: 40'-0"
 - 2. Nominal Capacity: 156,000 gallons
 - 3. Sidewater Depth: 14.72 feet
 - 4. Freeboard: 2'-0"
 - 5. Range of Head: 0'-0" – 16.27 ft (Measured from high point of tank foundation)(Includes 1 ft. of freeboard from top of tank)
 - 6. Design Loads:
 - a. Specific Gravity of Liquid: 1.00
 - b. Liquid temperature: 32-90 degrees F.
 - 7. Structurally designed to comply with applicable building codes including:
 - a. Live and dead loads.
 - b. Vacuum pressure: 4-inches water column.
 - c. Design wind speed of 120 mph.
 - d. Earthquake Seismic Zone, AWWA D103.
 - e. Thermal movements resulting from temperature change range of 120 degrees F ambient and 180 degrees F on material surfaces.

2.04 STEEL TANK

- A. Plates and Sheets:
 - 1. All steel shall be smelted and produced in the United States of America.
 - 2. Steel plates and sheets used in the construction of the tank shell shall comply with the minimum standards of AWWA D103, latest edition.
 - 3. Design requirements for mild strength steel shall be ASTM A1011 Grade 30 with a maximum allowable tensile stress of 14,566 psi (100 MPa).

4. Design requirements for high strength steel shall be ASTM A1011 Grade 50 with a maximum allowable tensile stress of 26,000 psi (179 MPa).
 5. When multiple vertical bolt line sheets and plates of ASTM A1011 Grade 50 are used, the effective net section area shall not be taken as greater than 85% of the gross area.
- B. Rolled Structural Shapes: In accordance with ASTM A36 and AISI 1010.
- C. Horizontal Wind Stiffeners:
1. Intermediate horizontal wind stiffeners "web truss" design.
 2. Steel web truss stiffeners with hot-dipped galvanized coating.
 3. Do not furnish rolled steel angles for intermediate stiffeners.
- D. Bolt Fasteners:
1. 1/2 inch diameter 13 UNC-2A rolled thread bolts for tank lap joints in accordance with AWWA D103, section 2.2.
 2. SAE Grade 2:
 - a. Tensile strength 74,000 psi minimum.
 - b. Proof load 55,000 psi minimum.
 - c. Allowable shear stress 18,164 psi.
 3. SAE Grade 8 in accordance with ASTM A325 heat treated to:
 - a. Tensile strength 150,000 psi minimum.
 - b. Proof load 120,000 psi minimum.
 - c. Allowable shear stress 36,818 psi.
 4. Bolt Finish:
 - a. Mechanically galvanized zinc plate.
 - b. inch thick minimum under bolt head and on shank and threads.
 5. Bolt Head Encapsulation:
 - a. High impact polypropylene co-polymer encapsulation of bolt head up to the splines on the shank.
- E. Lap Joint Sealant:
1. One component, moisture cured, and polyurethane compound in accordance AWWA D103.
 2. Sealant capable of curing to a rubber-like consistency, have excellent adhesion to epoxy/powder coating, have low shrinkage, and shall be suitable for interior and exterior exposure.
 3. Sealant curing rate at 73 degrees F and 50 percentage relative humidity (RH):
 - a. Tack-free time: 6 to 8 hours.
 - b. Final cure time: 10 to 12 days.
 4. Neoprene gaskets and tape sealer are not acceptable.

2.05 TANK APPURTENANCES (SEE CONTRACT DRAWINGS FOR TANK APPURTENANCES)

- A. Overflow Piping Weir Structure:
1. Tank supplier shall provide overflow weir cone structure fabricated of aluminum that will attach to flanged overflow pipe. Pipe supports for the overflow pipe shall be steel with epoxy coating.
 2. Tank supplier shall be responsible for sizing overflow weir cone structure with weir elevation as shown on drawing to accommodate maximum flow to overflow weir while providing minimum freeboard specified. Hydraulic calculations to take into account head loss over weir and head loss due to "drop-inlet" connection of weir structure to overflow piping. Submit hydraulic calculations.
 3. Overflow weir structure shall provide flanged connection on the bottom for connection to ductile iron pipe.
 4. Minimum weir cone depth shall be 18-inches.
- B. Pipe and Guiderail Supports

1. Tank manufacturer is responsible for design and furnishing of supports attached to the tank wall, including coordination of support locations, loads, attachments, and piping interfaces prior to fabrication.
 2. Provide vertical pipe and guiderail supports where depicted on Contract Drawings to attach to tank wall.
 3. Pipe and guiderail supports shall be designed to withstand damage from ice buildup in tank.
- C. Outside tank stairs:
1. An outside tank spiral stairs shall be provided as shown on the Contract Drawings with handrails and guardrails.
 2. Treads shall be fabricated of aluminum and be skid-resistant.
 3. Platform grating and guard railings shall be fabricated of aluminum and sized per the plan. Guardrails must be anodized.
 4. Provide support for tank stairs off of the side of the steel tank.
 5. Provide stainless steel hardware.
 6. OSHA regulations shall govern.
 7. Minimum tread width shall be 3'-0" (minimum).
 8. Minimum 7" rise x 11" tread for stairs.
- D. Access Manway
1. Tow bottom access doors shall be provided as shown on the Contract Drawings in accordance with AWWA D103.
 2. The manhole opening shall be a minimum of 30 inches in diameter. The access door (shell manhole) and the tank shell reinforcing shall comply with AWWA D103 latest edition, Sec. 5.1.
- E. Identification Plate: A manufacturer's nameplate shall list the tank serial number, tank diameter and height, and maximum design capacity. The nameplate shall be affixed to the tank exterior sidewall at a location approximately 5 feet (1524 mm) from grade elevation in a position of unobstructed view.

2.06 TANK FABRICATION

- A. Plates and Sheets:
1. Surface Preparation:
 - a. Following decoiling and shearing process, grit-blast steel sheets on both sides to equivalent of SSPC SP10. Do not sandblast or chemically pickle steel sheets.
 - b. Surface anchor pattern no less than 1 mil.
 - c. Surface prep and edge treatments shall be as required for coating process.
 2. Cleaning:
 - a. After fabrication and prior to application of coating system, clean sheets thoroughly with caustic wash and hot rinse process followed immediately by hot air drying.
 - b. Inspect sheet for traces of foreign matter or rust, and recleaned or grit-blast to remove foreign matter and rust.
 3. Tank Coating (Thermoset Powder Epoxy):
 - a. Powder epoxy coatings shall be applied according to the manufacturer's recommendations. Thermoset powder coatings shall comply with the following:
 - 1) Coatings. Within 30 minutes of blast cleaning, the interior and exterior surfaces of the tank shall be dry-powder coated by electrostatic application with a powder coating. The dry powder shall be deposited at a rate to yield 5 mil minimum dry film thickness for tank interior and a 3 mil minimum dry film thickness for tank exterior. The surfaces shall be oven cured in accordance with the coating manufacturer's recommendations.

- 2) Inspection. A representative sampling of coated parts shall be inspected and approved by the manufacturer prior to shipment. The inspection shall include a nondestructive mil thickness test (Mikrotest or equal), a holiday detection test (AWWA D103, Section 12.9), and solvent rub test in accordance with ASTM D5402 for organic coatings and ASTM D4752 for ethyl silicate (inorganic) zinc rich primers. Any coating defect shall be repaired and shall pass inspection prior to shipment. A copy of all inspection reports shall be furnished to the Engineer.

PART 3

3.01 INSTALLATION

A. General:

1. General contractor will be responsible for coordinating with tank supplier to ensure that reinforced concrete foundation and/or stem walls meet the specifications of the bolted steel tank and for placement of starter ring.
2. Tank supplier and/or mfr representative subcontractor will be responsible for erecting bolted steel tank on concrete foundation and/or stem walls.

B. Tank Floor:

1. The floor design is of reinforced concrete with an embedded epoxy coated steel starter sheet per AWWA D103 and the manufacturer's design, and is an integral element of the tank assembly. The tank foundation and floor slab (performed in two separate pours) with embedded starter sheet shall be constructed by the General Contractor.
2. Tank supplier shall furnish and provide installation requirements for the starter ring, anchorage/leveling components, seals, and other tank-specific embedded items.
3. Tank supplier's representative shall inspect and verify the starter ring interface installation prior to concrete placement.
4. Leveling of the starter ring shall be required and the maximum differential elevation within the ring shall not exceed one-eighth (1/8) inch, nor exceed one-sixteenth (1/16) inch within any ten (10) feet of length.
5. A leveling plate assembly, consisting of two 18" anchor rods (3/4" dia.) and a slotted plate (3 1/2" X 11" X 3/8" thk) shall be used to secure the starter ring, prior to encasement in concrete. Installation of the starter ring on concrete blocks or bricks and/or using shims for adjustment, is not permitted. The foundation with anchor bolts/leveling plates shall be a separate pour from the concrete floor.
6. Place one butyl rubber elastomer waterstop seal on the inside surface of the starter ring below concrete floor line. Place one bentonite impregnated water seal below the butyl rubber seal. These materials shall be installed as specified by the tank manufacturer or manufacturer subcontractor.

C. Sidewall Structure:

1. Provide erection jacks and building equipment developed and manufactured by tank manufacturer for erection of tanks.
2. Take particular care in handling and bolting of tank panels and members to avoid abrasion of coating system.
3. Install tank shell bolts with head portion located inside tank. Install lap joint bolts so threaded portions shall not be exposed in shear plane between tank sheets. Size bolt lengths to achieve a neat and uniform appearance. Excessive threads extending beyond nut after torquing not permitted.
4. Include with lap joint bolts a minimum of four splines on underside of bolt head at shank in order to resist rotation during torquing.
5. Provide sealant to seal lap joints, bolt connections, and sheet edges.
6. Multiple vertical bolt line sheets and plates, the effective net area shall not be taken as greater than 85 percent of the gross area.

7. Sheet surfaces shall be tested after assembly for coating holidays and damage (Tinker Raxor or equal). The manufacturer shall provide field repair and touchup materials and instructions for the field repair of damaged coatings. Contractor shall touch-up coating per manufacturers recommendations at locations indicated by Owner/Engineer.
- D. Install fittings and equipment, connect piping and wiring.
- E. Ground tank and equipment as specified in Section 26 0526.

3.02 FIELD QUALITY CONTROL

- A. Comply with requirements of Section 01 4000. Where bolted steel tank sits on concrete stem walls, there shall be separate testing for reinforced concrete tank. See Section 03 3000 for additional requirements.
- B. Leak Test (Holiday Test):
 1. Prior to liquid testing, Engineer will visually inspect surface areas.
 2. Conduct an electric leak test using a 9-volt leak detection device over the complete interior surface area of the tank.
 3. Repair electrical leak points found on inside surface in accordance with manufacturer's instructions.
 4. Holiday Testing shall be performed in the field, during/following erection to identify coating damage, with defects repaired and reinspected in accordance with the manufacturer's procedures. This test is to determine coating integrity and is not a test of tank watertightness.
- C. Hydrostatic:
 1. Following completion of erection and cleaning of tank, test structure for liquid tightness by filling tank to overflow elevation. Engineer shall witness and indicate acceptance.
 2. Leaks disclosed shall be corrected in accordance with tank manufacturer's instructions.
 3. Any leaks disclosed by this test shall be corrected by the authorized dealer and/or manufacturer in accordance with the manufacturer's recommendations.
 4. Water required for testing shall be furnished by the Owner at the time of tank erection completion, and at no charge to the tank erector. General Contractor is responsible for filling, testing, and coordinating discharge of test water with the Owner.
 5. Labor and equipment necessary for hydrostatic tank testing is to be included in the price of the tank.

END OF SECTION 33 3613

Marshalltown WPCP
Flow Equalization Basin Improvements
100% Opinion of Probable Cost

Item	Cost	
Demolition	\$20,000	
Construction Staking & Material Testing	\$15,000	
Sitework		
Yard Piping, Fittings, and Valves	\$281,000	
Fencing, Access Drive and Sidewalk	\$64,000	
Precast Valve Vault Structures	\$97,000	
Erosion Control & Seeding	\$16,000	
Flow Equalization Basin		
Flow EQ Basin (Bolted Steel Epoxy Coated w/ One Spiral Stairway)	\$254,000	
Concrete Foundation	\$189,000	
Excavation and Backfill	\$72,000	
Tank Piping	\$215,000	
Monfort Structure Piping Modifications	\$115,000	
Pump Building Piping Modifications	\$81,000	
Electrical and I&C		
Controls Modifications	\$50,000	
Electrical Modifications	\$51,000	
Subtotal	\$1,520,000	
Mobilization & Demobilization	4.00%	\$61,000
Subtotal	\$1,581,000	
Contractor's Overhead & Profit	15.00%	\$238,000
Contractor's Bond and Insurance	4.50%	\$72,000
Contingency	0.00%	\$0
Total	\$1,891,000	

SECTION 00120
NOTICE OF PUBLIC HEARING

NOTICE OF PUBLIC HEARING ON PROPOSED PLANS, SPECIFICATIONS, PROPOSED FORM OF CONTRACT AND ESTIMATED COSTS FOR THE CONSTRUCTION OF PROJECT Flow Equalization Improvements IN AND FOR THE City of Marshalltown, Marshalltown, IA 50158.

Notice is hereby given that there are on file with the Clerk, City of Marshalltown of the City of Marshalltown, Marshalltown, IA 50158, proposed drawings, project manual, proposed Form of Contract ("Contract Documents"), and opinion of probable cost for the construction of said improvement, for said Owner.

A hearing will be conducted thereon at a meeting of the City of Marshalltown to be held at 24 N. Center St., Marshalltown, IA 50158 at 5:30 PM, on September 28, 2026, at which time and place any person may appear and file objections to the proposed drawings, project manual, proposed Form of Contract ("Contract Documents"), and opinion of probable cost for the construction of said improvement.

Published upon order of the City of Marshalltown.

/s/ _____
Mike Ladehoff, Mayor

ATTEST:

/s/ _____
Alicia Hunter, City Clerk

END OF SECTION 00120

**SECTION 00110
NOTICE TO BIDDERS**

FILING OF SEALED BIDS

Sealed Bids will be received by the City Clerk of the City of Marshalltown ("Owner"), at City of Marshalltown, 24 N. Center St., Marshalltown, IA 50158 until 10:00 AM, on October 6, 2026, for the construction of the proposed Flow Equalization Improvements for said Owner, as described in the Specifications and drawings therefore on file in the office of the City Clerk of the City of Marshalltown. Bids will be publicly opened, read, and tabulated on the day and hour specified above, and will be acted upon by the Owner at that time or at such later time and place as the Owner may then determine.

GENERAL PROJECT DESCRIPTION

All Work, materials, and equipment are to be in accordance with the Contract Documents on file in the office of the City Clerk, and at the office of HR Green, Des Moines ("Engineer"), 5525 Merle Hay Road Suite 200, Johnston, IA 50131, by this reference made a part hereof as though fully set out and incorporated herein.

The Work for the said improvement, as required by the Contract Documents, is generally described as follows:

This project includes the installation of a bolted steel tank flow equalization basin (FEB) and piping to equalize flow pumped from the nearby JBS processing plant and a future industrial client. Modulating valves will be replaced in the flow control structures upstream and downstream of the proposed FEB tank.

The City of Marshalltown, in accordance with Title VI of the Civil Rights Act of 1964, 78 Stat. 252, 42U.S.C. 2000d to 2000d-4 and Title 49, Code of Federal Regulations, Department of Transportation, Subtitle A, Office of the Secretary, Part 21, Nondiscrimination in Federally-assisted programs of the Department of Transportation issued pursuant to such Act, hereby notifies all bidders that it will affirmatively ensure that in any contract entered into pursuant to this advertisement, minority business enterprises will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, or national origin in consideration for an award.

Work under the proposed Contract Documents shall be commenced upon written Notice to Proceed anticipated to be issued within seven (7) days of the Effective Date of the Agreement and shall be substantially complete on or before August 31, 2027 and fully complete on or before September 30, 2027, subject to any extension of time, which may be granted by the Owner.

PRE-BID CONFERENCE

Prospective bidders are encouraged to attend a pre-bid walk through of the proposed Work site which will be conducted jointly by the Owner and Engineer at 10:00 AM on September 29, 2026 at Marshalltown WPCP. The objective of the walk through is to acquaint bidders with the site conditions.

OTHER PERTINENT INFORMATION

Each Bid shall be made on the Bid Form prepared for this purpose, which may be obtained from the Engineer. Any alteration in the official Bid Form will entitle the Owner, at its option, to reject the Bid from consideration. Each Bid shall be accompanied by a Bid Bond or a certified cashier's check, drawn on a solvent state or national bank, or a certified share draft drawn on a credit union in Iowa or chartered under the laws of the United States, and filed in a sealed envelope separate from the one containing the Bid. The Bid Bond shall be substantially in the form set forth in the Contract Documents. The Contractor's certified check or Bid Bond shall be in an amount equal to five (5) percent of the amount of the Bid, made payable to the Owner. The check may be cashed for the full amount by the Owner or the Bid Bond forfeited in the full amount to the Owner as liquidated damages in the event the successful Bidder fails to enter into contract and file acceptable bonds satisfactory to the Owner assuring the faithful fulfillment of the contract and maintenance of said improvements as required by law within ten (10) days after the acceptance of the Bid.

The Owner reserves the right to reject any or all Bids, to readvertise for Bids or to defer action on the Bids received for a period not to exceed 30 days from and after the date and time specified in this Notice to Bidders for receiving said Bids, and to waive irregularities and informalities.

The successful Bidder will be required to furnish a Performance Bond, a Payment Bond, and a Maintenance/Warranty bond. Contractor shall defer to the supplementary conditions for specific bond amounts required. Said bonds to be issued by a responsible Surety approved by the Owner and shall guarantee that the Principal shall promptly make payment to all persons, firms, Subcontractors, and corporations furnishing materials for or performing labor in the performance of the Work stated and the faithful performance of the contract and the terms and conditions therein contained and the guarantee and maintenance of said facilities in good repair and working conditions for not less than four (4) year(s) from the Notice of Acceptability of such improvements by the Owner.

Payment of the cost of said project will be made from cash on hand and/or received, payable from any fund or funds of Owner which may be legally used for such purpose, including, but not limited to, any of the following sources, or any combination thereof, at the sole discretion of Owner: (1) past and/or future earnings of Owner's utility; (2) proceeds of the sale and issuance of General Obligation Bonds and/or revenue bonds (or project notes anticipating the sale of such bonds); (3) federal, State or local grants or loans; and (4) proceeds from the sale of warrants, as authorized by Section 384.57 of the Code of Iowa. Payments will be made to the Contractor in accordance with the Contract Documents.

Construction items and materials included in the Project are exempt from State of Iowa and Local Option Sales and Use Taxes. Contractor is responsible for obtaining the exemption on items

included, as provided by law or for applying for reimbursement for such taxes paid. Contractor shall pay all other taxes required to be paid by Contractor in accordance with the laws and regulations of the place of the Project that are applicable during the performance of the Work. Contractor shall NOT include Sales and Use Tax in Contractor's bid. For more information on this exemption, please check the State of Iowa's website: www.state.ia.us/tax/business/Contr-ExEnt-Index.html

By virtue of statutory authority, preference will be given to products and provisions grown and coal produced within the State of Iowa, and to Iowa domestic labor, to the extent lawfully required under Iowa statutes provided that the award of contract will be made to the lowest responsible bidder submitting the lowest responsive bid, which shall be determined without regard to state or local laws whereby preference is given on factors other than the amount of the Bid.

The proposed Contract Documents are on file with the Owner and Engineer for public examination. Copies of said Contract Documents and one unbound copy of the Bid Form may be secured at the office of HR Green, Des Moines, 5525 Merle Hay Road Suite 200, Johnston, IA 50131, Phone Number 515-278-2913.

This public improvement is being constructed pursuant to the provisions of Chapters 26 and 573 of the latest edition of the Iowa Code, including revisions.

Published upon order of the City of Marshalltown.

City of Marshalltown

/s/ _____
Mike Ladehoff, Mayor

ATTEST:

/s/ _____
Alicia Hunter, City Clerk

END OF SECTION 00110



**MARSHALLTOWN
MORE THAN EVER**

Mike Ladehoff, Mayor
Carol Webb, City Administrator
24 North Center Street
Marshalltown, IA 50158
PH 641.754.5701 • FX 641.754.5717

To: Mayor and City Council
From: Kelsie Stafford, Director
Meeting Date: September 14, 2026
Re: Resolution Approving Change Order #8 for the Water Plaza at Mega-10 Park Project #PRK22004

Strategic Plan Objective:

Goal 2: Enhance Marshalltown's public image.

Goal 3: Continually improve and sustain the City's infrastructure, organization, and services.

Goal 4: Partner with citizens, for-profit, non-profit and others to improve quality of life.

Recommended:

Staff recommends approval of Change Order #8, a decrease of \$28,871.00, for the Water Plaza at Mega-10 Park Project #PRK22004 as submitted.

Budget Impact:

The final Change Order #8 is a balancing change order in preparation for the release of retainage to Edge Commercial for construction of the Water Plaza at Mega-10 Park Project #PRK22004. The table below demonstrates project expenses and funding sources:

Project Expenses:

Design Engineering	\$296,400.00	Bolton & Menk
Construction	\$190,185.00	Bolton & Menk
Engineering		
Rubberized Coating	\$36,528.50	Sundek National Accounts, Inc.
Allowance – Landscaping	\$7,500.00	City of Marshalltown - Parks
Allowance - Signage	\$50,000.00	Coordination w/ ACA
Allowance – Sculpture	\$395,000.00	Coordination w/ ACA
Estimated Permits, Util, Etc	\$5,710.00	City + Others
Land Survey for YMCA Agreement	\$4,095.00	Clapsaddle-Garber Associates
Electrical Service & Transformer	\$30,723.50	Alliant Energy

Electrical Service Installation	\$2,545.09	Alliant Energy
Construction Bid (+ CO-0)	\$1,887,325.00	Edge Commercial
Construction Change Order 1	(\$2,703.00)	Edge Commercial
Construction Change Order 2	\$945.00	Edge Commercial
Construction Change Order 3	\$9,144.00	Edge Commercial
Construction Change Order 4	\$2,926.93	Edge Commercial
Construction Change Order 5	(\$340.00)	Edge Commercial
Construction Change Order 6	(\$12,826.00)	Edge Commercial
Construction Change Order 7	\$0.00	Edge Commercial
Construction Change Order 8	(\$28,871.00)	Edge Commercial
Construction Engineering Amendment	\$40,000.00	Bolton & Menk
TOTAL	\$2,914,288.02	

Project Funding:

City of Marshalltown	\$500,000.00	
Bond Fund 364		
City of Marshalltown	\$68,063.65	
ARPA Fund 389		
Destination Iowa Grant	\$578,015.00	
Wellmark Grant	\$100,000.00	
Donations	\$125,000.00	City Fund 364
Donations	\$1,071,059.50	City Fund 140
Donations	\$445,000.00	ACA Held
City of Marshalltown	\$190,000.00	Contingency from Riverview Park
Bond Fund 364		
Electrical Reimbursement	\$30,000.00	Bolton & Menk / KED Bluestone
TOTAL	\$3,107,138.15	

Description/Background:

This final Change Order #8 brings the contracted quantities of bid items to actual as-built quantities. The City of Marshalltown is receiving a credit of \$28,871.00 for actual quantities of granular sub-base, storm sewer and water service piping lengths, erosion control and concrete units. Staff recommend approval of Change Order #8 as submitted.

Attachments:

1. 2026-09-14_2026-164_Resolution Approving CO8 Water Plaza
2. PRK22004 - Water Plaza CO 8

RESOLUTION APPROVING CONTRACT CHANGE ORDER #8 FOR THE WATER PLAZA AT MEGA-10 PARK PROJECT, #PRK22004, A DECREASE OF \$28,871.00

WHEREAS, the City of Marshalltown, Iowa, has heretofore entered into a contract with Edge Commercial for the Water Plaza at Mega-10 Park Project, #PRK22004; and

WHEREAS, a change that results in a decrease is requested for items reflecting actual quantities to complete the project.

NOW, THEREFORE, BE IT RESOLVED BY THE COUNCIL OF THE CITY OF MARSHALLTOWN, IOWA:

Section 1. That the contract Change Order #8 for the Water Plaza at Mega-10 Park Project, #PRK22004 in the decreased amount of \$28,871.00 is hereby accepted and approved.

Passed this 14th day of September 2026, and signed this _____ day of September 2026.

CITY OF MARSHALLTOWN, IOWA

Mike Ladehoff, Mayor

ATTEST:

Alicia Hunter, CMC, City Clerk



Bolton & Menk

Change Order Details

Marshalltown - Water Plaza

Description	Marshalltown Interactive Water Feature
Prime Contractor	Edge Commercial 3155 SE Mieke Dr, Ste 2 Grimes, IA 50111
Change Order	8
Status	Pending
Date Created	09/03/2026
Summary	Balancing Change Order for Final Payment
Change Order Description	Balancing Change Order for Final Payment
Awarded Project Amount	\$1,887,325.00
Authorized Project Amount	\$1,884,471.93
Change Order Amount	-\$28,871.00
Revised Project Amount	\$1,855,600.93

Increases/Decreases

Line Number	Item ID	Unit	Unit Price	Current		Change		Revised	
				Quantity	Amount	Quantity	Amount	Quantity	Amount
Section: 1 - Description									
0005	2010-J	SY	\$31.000	1,615.000	\$50,065.00	-565.000	-\$17,515.00	1,050.000	\$32,550.00
SUBBASE, TEMPORARY GRANULAR MATERIAL									
Reason: Balancing Change Order									
0011	4020-A-1	LF	\$110.000	305.000	\$33,550.00	-15.000	-\$1,650.00	290.000	\$31,900.00
STORM SEWER, TRENCHED, RCP, 15 INCH									
Reason: Balancing Change Order									
0018	5010-E-1	LF	\$52.000	363.000	\$18,876.00	-13.000	-\$676.00	350.000	\$18,200.00
WATER SERVICE PIPE, PVC, 2 INCH									
Reason: Balancing Change Order									
0032	7040-A	SY	\$340.000	23.000	\$7,820.00	-2.000	-\$680.00	21.000	\$7,140.00
FULL DEPTH PATCHES, PCC, 7 INCH									
Reason: Balancing Change Order									
0042	9040-N-1	LF	\$6.000	200.000	\$1,200.00	-200.000	-\$1,200.00	0.000	\$0.00
SILT FENCE OR SILT FENCE DITCH CHECK									

Line Number	Item ID	Unit	Unit Price	Current		Change		Revised	
				Quantity	Amount	Quantity	Amount	Quantity	Amount
Reason: Balancing Change Order									
0044	9040-V	AC	\$3,700.000	1.000	\$3,700.00	-1.000	-\$3,700.00	0.000	\$0.00
END OF SEASON TEMPORARY EROSION CONTROL									
Reason: Balancing Change Order									
0047	11050-A	LS	\$3,450.000	1.000	\$3,450.00	-1.000	-\$3,450.00	0.000	\$0.00
CONCRETE WASHOUT									
Reason: Balancing Change Order									
7 items			Totals		\$118,661.00		-\$28,871.00		\$89,790.00

Signatures

Agreed - _____ Date: _____

Contractor

Recommended - _____ Date: _____

Project Engineer

Approved - _____ Date: _____

City



**MARSHALLTOWN
MORE THAN EVER**

Mike Ladehoff, Mayor
Carol Webb, City Administrator
24 North Center Street
Marshalltown, IA 50158
PH 641.754.5701 • FX 641.754.5717

To: Mayor and City Council
From: Kelsie Stafford, Director
Meeting Date: September 14, 2026
Re: Resolution Approving Owner's Certificate of Completion and Accepting the Water Plaza at Mega-10 Park Project #PRK22004

Strategic Plan Objective:

Goal 2: Enhance Marshalltown's public image.

Goal 3: Continually improve and sustain the City's infrastructure, organization, and services.

Goal 4: Partner with citizens, for-profit, non-profit and others to improve quality of life.

Recommended:

Staff recommends acceptance of work completed by Edge Commercial for the Water Plaza at Mega-10 Park Project, #PRK22004.

Budget Impact:

The City of Marshalltown entered into a contract with Edge Commercial on January 17, 2025 in the amount of \$1,887,325.00 for work generally described as the Water Plaza at Mega-10 Park Project. Change Orders 1-8 resulted in a net decrease of \$31,724.07. The table below demonstrates the project expenses and funding sources:

Project Expenses:

Design Engineering	\$296,400.00	Bolton & Menk
Construction	\$190,185.00	Bolton & Menk
Engineering		
Rubberized Coating	\$36,528.50	Sundek National Accounts, Inc.
Allowance – Landscaping	\$7,500.00	City of Marshalltown - Parks
Allowance - Signage	\$50,000.00	Coordination w/ ACA
Allowance – Sculpture	\$395,000.00	Coordination w/ ACA
Estimated Permits, Util, Etc	\$5,710.00	City + Others
Land Survey for YMCA Agreement	\$4,095.00	Clapsaddle-Garber Associates

Electrical Service & Transformer	\$30,723.50	Alliant Energy
Electrical Service Installation	\$2,545.09	Alliant Energy
Construction Bid (+ CO-0)	\$1,887,325.00	Edge Commercial
Construction Change Order 1	(\$2,703.00)	Edge Commercial
Construction Change Order 2	\$945.00	Edge Commercial
Construction Change Order 3	\$9,144.00	Edge Commercial
Construction Change Order 4	\$2,926.93	Edge Commercial
Construction Change Order 5	(\$340.00)	Edge Commercial
Construction Change Order 6	(\$12,826.00)	Edge Commercial
Construction Change Order 7	\$0.00	Edge Commercial
Construction Change Order 8	(\$28,871.00)	Edge Commercial
Construction Engineering Amendment	\$40,000.00	Bolton & Menk
TOTAL	\$2,914,288.02	

Project Funding:

City of Marshalltown	\$500,000.00	
Bond Fund 364		
City of Marshalltown	\$68,063.65	
ARPA Fund 389		
Destination Iowa Grant	\$578,015.00	
Wellmark Grant	\$100,000.00	
Donations	\$125,000.00	City Fund 364
Donations	\$1,071,059.50	City Fund 140
Donations	\$445,000.00	ACA Held
City of Marshalltown	\$190,000.00	Contingency from
Bond Fund 364		Riverview Park
Electrical	\$30,000.00	Bolton & Menk / KED
Reimbursement		Bluestone
TOTAL	\$3,107,138.15	

Description/Background:

Edge Commercial began work on the Water Plaza at Mega-10 Park Project following execution of a contract in January 2025. The work specified in the Plans and Specifications has been completed and accepted. The project is required to be closed and final reporting submitted to the Iowa Economic Development Authority by September 30, 2026. Bolton & Menk, City Staff and Edge Commercial have developed a punch list with remaining minor items to be addressed during the warranty period. The Project was not substantially complete on the contracted date, and the City has received a total of \$33,600.00 in liquidated damages. Staff is recommending Council approve and accept the Project and certify the final payment including the release of 3% retainage in the amount of \$55,668.03.

Attachments:

1. 2026-09-14_2026-165_Resolution Approving Own Certificate of Completion for PRK22004 Water Plaza at Mega-10 Park
2. Notice of Acceptability of Work_Water Plaza at Mega-10 Park_260910
3. Mega-10 Water Plaza - Master Punchlist_EDITED-260910_KAS
4. 01_2026.06-09_Water Plaza Pay App 8 - DRAFT

**RESOLUTION APPROVING OWNER'S CERTIFICATE OF COMPLETION AND
ACCEPTING EDGE COMMERCIAL FOR THE WATER PLAZA AT MEGA-10 PARK
PROJECT, #PRK22004**

WHEREAS, the City of Marshalltown, Iowa has heretofore entered into a contract for labor and material for the Water Plaza at Mega-10 Park Project, #PRK22004; and

WHEREAS, said project has been completed by Edge Commercial pursuant to the plans and specifications all as is set forth in the Final Acceptance and Certificate of Completion covering said project.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF MARSHALLTOWN, IOWA;

Section 1. That the labor and material for the Water Plaza at Mega-10 Park Project, #PRK22004, is hereby accepted pursuant to the Owner's Statement of Completion and the City Clerk is hereby authorized and directed to do all things necessary to complete the contract with Edge Commercial, including the payment of the items called for in said contract and Certificate of Completion.

Passed this 14th day of September, 2026, and signed this _____ day of September, 2026.

CITY OF MARSHALLTOWN, IOWA

Mike Ladehoff, Mayor

ATTEST:

Alicia Hunter, CMC, City Clerk

NOTICE OF ACCEPTABILITY OF WORK

Owner: City of Marshalltown Owner's Project No.: PRK22004
Engineer: City of Marshalltown Engineer's Project No.: PRK22004
Contractor: EDGE COMMERCIAL Contractor's Project No.:
Project: WATER PLAZA AT MEGA-10 PARK PROJECT
Contract Name: WATER PLAZA AT MEGA-10 PARK PROJECT
Notice Date: **September 10, 2026** Effective Date of the Construction Contract: **January 17, 2025**

The Owner hereby gives notice to the Contractor that Owner recommends final payment to Contractor, and that the Work furnished and performed by Contractor under the Construction Contract is acceptable, expressly subject to the provisions of the Construction Contract's Contract Documents ("Contract Documents") dated **January 17, 2025**. This Notice of Acceptability of Work (Notice) is made expressly subject to the following terms and conditions to which all who receive and rely on said Notice agree:

This Notice has been prepared with the skill and care ordinarily used by members of the engineering profession practicing under similar conditions at the same time and in the same locality.

This Notice reflects and is an expression of the Owner's professional opinion.

This Notice has been prepared to the best of Owner's knowledge, information, and belief as of the Notice Date.

This Notice is not a guarantee or warranty of Contractor's performance under the Construction Contract, an acceptance of Work that is not in accordance with the Contract Documents, including but not limited to defective Work discovered after final inspection, nor an assumption of responsibility for any failure of Contractor to furnish and perform the Work thereunder in accordance with the Contract Documents, or to otherwise comply with the Contract Documents or the terms of any special guarantees specified therein.

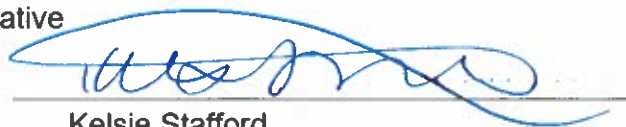
This Notice does not relieve Contractor of any surviving obligations under the Construction Contract, and is subject to Owner's reservations of rights with respect to completion and final payment.

Owner's Representative

By (signature):

Name (printed):

Title:


Kelsie Stafford
Park and Recreation Director



See Steve Shanks punch list
for photos of completed items

June 9th, 2026

Subject: Mega-10 Water Plaza Master Punch List (Steve Shanks Punch List attached)

Pleva Mechanical

- Anchoring fasteners shipping 6-11

Mark and Steve are discussing the pros and cons of adding a valve here

Complete 6-10

Complete 6-10

Labels are being procured

Complete 6-10

Complete 6-10

Complete 6-10

Complete 6-10

Complete 6-10

Complete 6-10

Complete 6-10

Broken components removed waiting on new parts

Signs are being procured

Signs are being procured

 - Perimeter trench drain grating needs to be anchored. Steve Shank Punch List [Verified - KAS](#)
 - Drain pipe to the wet pit shall have valve, open for on-season/closed for off-season, for the drain to bypass the pit and sump pump, Per Sheet D.05, Key Note #12. Steve Shank Punch List [No Valve Needed. Verified - KAS](#)
 - Recirc system flowmeter is detailed to be on recirc pump discharge/filter influent per Sheet D.05, Key Note #19 (not filter effluent) to monitor both recirc rate and backwash rate. Provide pipe label for recirc gpm and backwash gpm. Steve Shank Punch List [Verified - KAS](#)
 - Verify the sonar water level system turns on water make-up at 24" and 18" above wet pit floor. Steve Shank Punch List [Verified - KAS](#)
 - Pipe labels and valve tags Steve Shank Punch List [Verified - KAS](#)
 - Verify if recirc/backwash isolation valve is provided per Sheet D.05, Key Note #23, with chemical controller sample downstream. This ensures no flow to chemical controller during backwash, to disable chemical feed. Steve Shank Punch List [Verified - KAS](#)
 - Provide flow meters for feature pumps per Sheet D.05, Key Notes #62, #63, #64. Steve Shank Punch List [Verified - KAS](#)
 - Verify if labcocks are provided on feature pump discharges for water testing per DIAL and WEAD note (02-13-25). Steve Shank Punch List [Verified - KAS](#)
 - Verify id recirculation pump is de-energized, then feature pumps are also de-energized, per sheet D.05 Key Note #65. Steve Shank Punch List [Verified - KAS. SEE NOTE](#)
 - Provide water make-up water meter per Sheet D.05, Key Note #56. Steve Shank Punch List [Verified - KAS](#)
 - Verify emergency show operates. Steve Shank Punch List [UNSURE WHAT THIS MEANS](#)
 - Verify if UV system is working, if it is based on flow or programmed flow, and if it is provided with inline strainer. Steve Shank Punch List [Verified - KAS. SEE NOTE](#)
 - Provide chemical information signs at chemical feeders, per Spec Section 10 14 46, Part 2.02, A, and Part 3.03, C-1-a and b. Steve Shank Punch List [Verified - KAS](#)
 - Provide chemical caution signs on door per Spec 10 14 46, Part 2.02, B, and part 3.03 C-1-c. Steve Shank Punch List [Verified - KAS](#)

- Signs are being procured • Verify NFPA signs, presumably sodium hydrochlorite is oxidizer, and acid is corrosive? Verify if Fire Marshal requires NFPA signs on Exterior door as well interior door. Steve Shank Punch List Verified - KAS
- Complete 6-10 • Backwash pit was not inspected Verify the horizontal backwater valve and grout trap is provided. Steve Shank Punch List Verified - KAS. SEE NOTE
- Broken compenents removed waiting on new parts • Fix broken quartz sleeve in UV system Verified - KAS
- UV System training to be scheduled once new parts are installed • UV System Commissioning/Training Verified - KAS
- Replace broken pressure gauge on north array pump Verified - KAS
- Complete 6-10 • Fix auto fill in wet pit. Verified - KAS
- Complete 6-10

Commercial Recreation Specialist & Vortex

- Working with Vortex and CRS on completion & delivery date • Permanent programming for splashpad. NOT COMPLETE AS OF 9/10/26 - KAS
- Custom Spray links for center array NOT COMPLETE AS OF 9/10/26 - KAS
- Edge is going to see if rust can be removed with stainless steel rust cleaner. • Solution for rusting LED lights in wet deck. Steve Shank Punch List NOT COMPLETE AS OF 9/10/26 - KAS
- Lights function waiting on new programing to confirm this item • Confirm LED Lights work with programming. Steve Shank Punch List NOT COMPLETE AS OF 9/10/26 - KAS

Patriot Concrete

- Fix delamination on sculpture column finish. Steve Shank Punch List NOT COMPLETE AS OF 9/10/26 - KAS
- Working with Patriot to discuss causes and potential solutions.

Van Maanen

- Grounding/Bonding test reports Verified - KAS
- Initial report sent working with VME to get more detailed report.

Edge Commercial/City

- Tried to powerwash did not work may need some sort of cleaner to remove this • Clean tire marks on concrete portion of wet deck Steve Shank Punch List Verified - KAS
- Complete 6-10 • Clean debris out of trench drain Steve Shank Punch List Verified - KAS
- City to provide pad lock • Verify room exhaust fan shall be locked in the ON position... presumably with city padlock Steve Shank Punch List Verified - KAS
- City to investigate • Owner shall verify if data utility is provided for remote access to chemical controller and water feature controller. Steve Shank Punch List Verified - KAS
- Edge will investigate and remove water from light • Fix water in light above pump room exterior door. Verified - KAS Water removed, but moisture still entering light cover as of 9/10/26. KAS
- Once Pleva's scope is complete Edge will do final cleaning • Final Clean Building (Ongoing) Verified - KAS
- Working with manufacturer to find a solution. • Clean rust off of Stainless steel grates. NOT COMPLETE AS OF 9/10/26 - KAS

Construct

- Working with Construct to resolve these issues. • Grout/Seal rusting metal in wet pit. Steve Shank Punch List Verified - KAS
- Replace rusting hinge on wet pit hatch. Verified - KAS

Colby Wiederholt

From: Steve Shank <SShank@wedesignpools.com>
Sent: Monday, June 8, 2026 1:26 PM
To: Kelsie Stafford (KStafford@Marshalltown-IA.gov); Heather Thomas; Amber Danielson (Director@ArtsAndCultureAlliance.org); Nate Weitzl (Nate.Weitzl@Bolton-Menk.com); Keaton Westerkamp (Keaton.Westerkamp@Bolton-Menk.com); Stephen P. Goodrich; Colby Wiederholt; Branson D. Ropp; MarkPleva2011@gmail.com; Alan Mundt (Alan@GascheElectric.com)
Subject: Marshalltown water plaza - site visit report

Below are my comments from my site visit on (06-02-26)...

Most of them were discussed on site.

I added more comments after more review of the pictures in the office.

Images included are small, but they are only intended to provide a reference for the comments.

I realize some of the items might have been completed already.

Let me know if you have any questions.

Attendees:

- Kelsie Stafford (City of Marshalltown)
- Heather Thomas (City of Marshalltown)
- Amber Danielson (Arts + Culture Alliance)
- Nate Weitzl (BMI)
- Steve Goodrich (Edge)
- Colby Wiederholt (Edge)
- Mark Pleva (Pleva Mechanical)
- Alan Mundt (Gasche Electric)
- Steve Shank (WEAD)

Adjust the directional jets to spray a bit lower and maybe a bit Southeast to minimize overspray from wind.

Edge will work with the city to verify the height desired. These are easily adjusted.

Verified - KAS

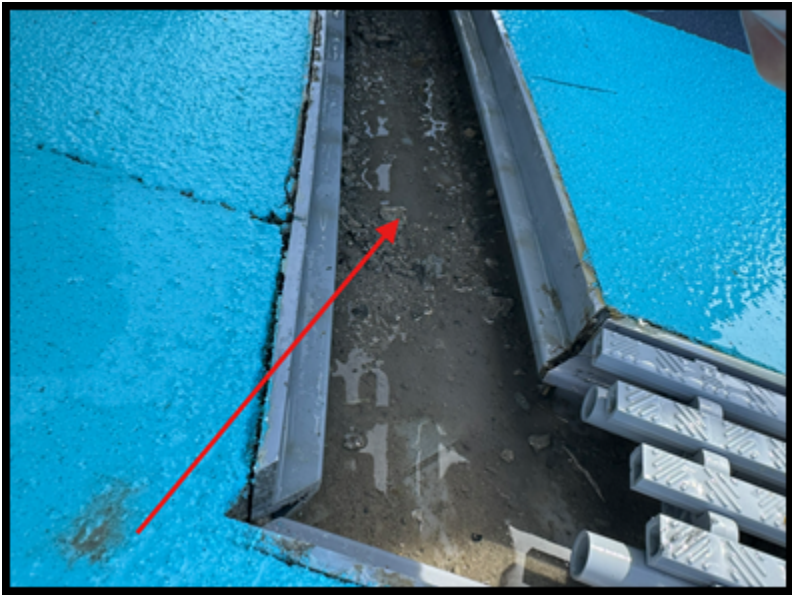


Debris in perimeter trench drain shall be flushed out.

Pleva Mechancial/Edge

Complete 6-10
No pictures were taken but city witnessed cleaning of these drains.

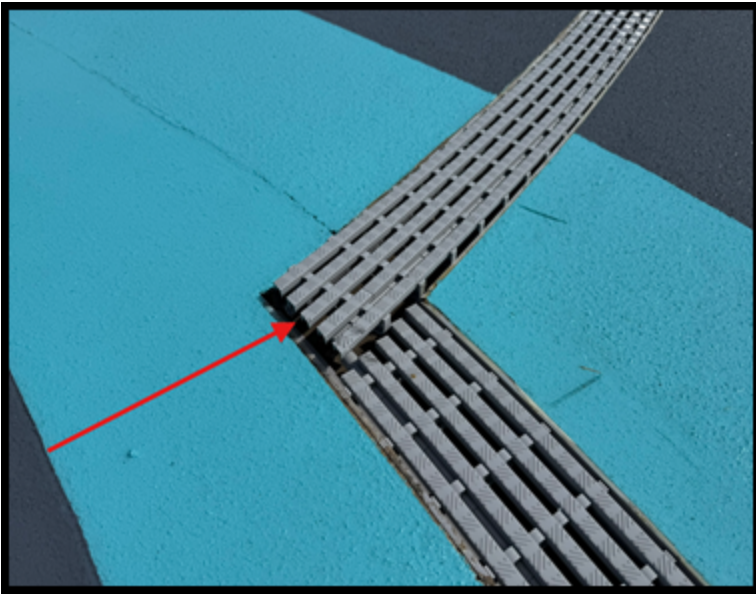
Verified - KAS



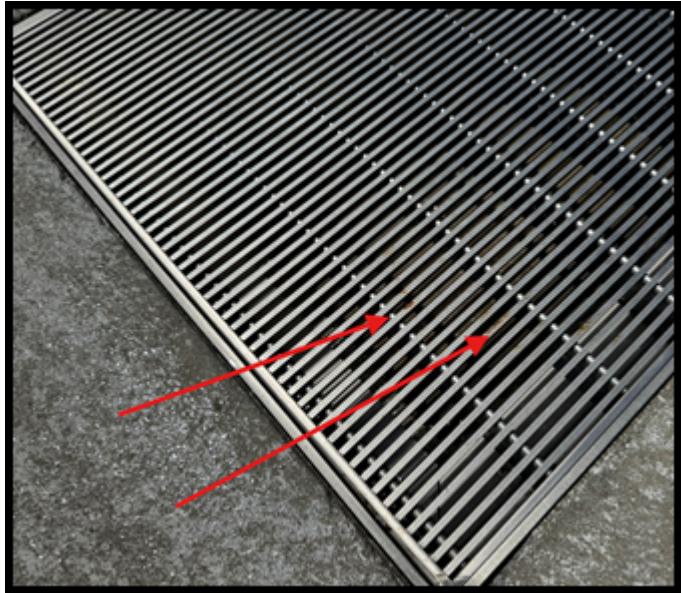
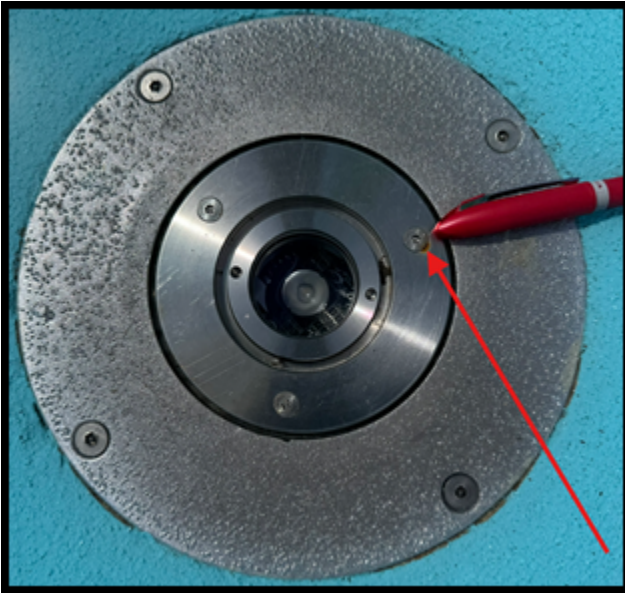
Perimeter trench drain grating shall be anchored.

Pleva Mechancial

Verified - KAS



Rust on S.S. items shall be addressed. Pleva Mechancial/Commercial Recreation Specialist (CRS)



NOT COMPLETE AS OF 9/10/26 - KAS

Exposed steel in wet pit shall be coated to prevent rust.

Con-Struct

Verified - KAS



Drain pipe to the wet pit shall have valve, open for on-season/closed for off-season, for the drain to bypass the pit and sump pump, Per Sheet D.05, Key Note #12.

Pleva Mechancial

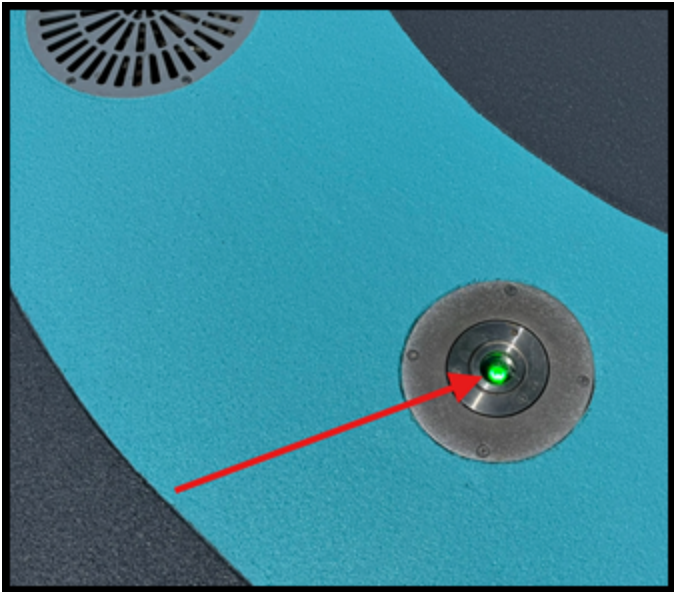
No valve needed. Verified - KAS



Verify if LED lights are programmed.
WEAD to review if the LED lights can operate without feature water flow.

Pleva Mechancial/Commercial Recreation Specialist (CRS)

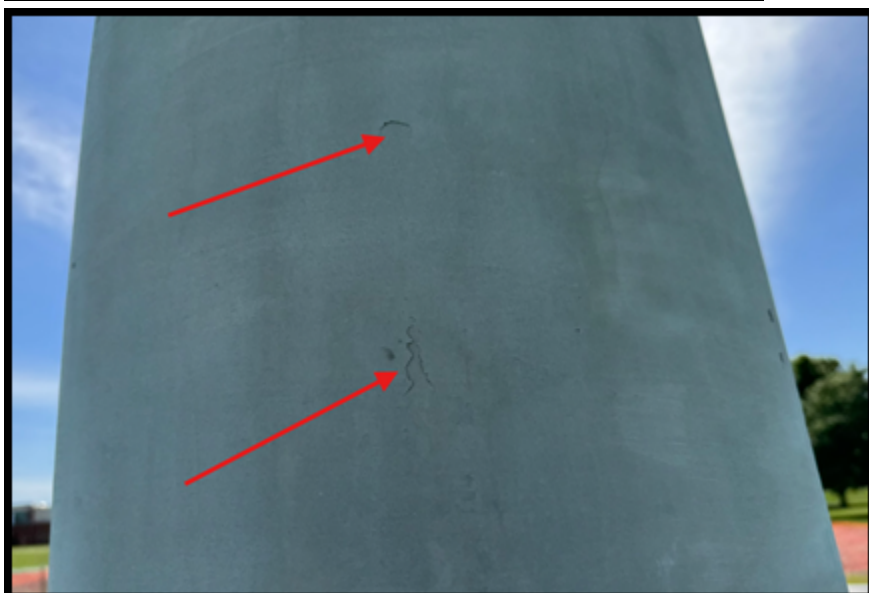
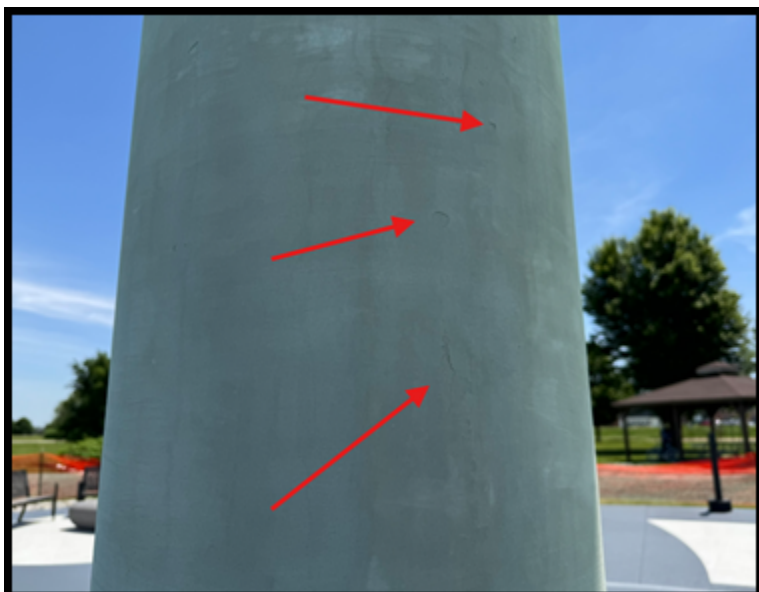
NOT COMPLETE AS OF 9/10/26 - KAS



Center column rubbing is delaminating in places.

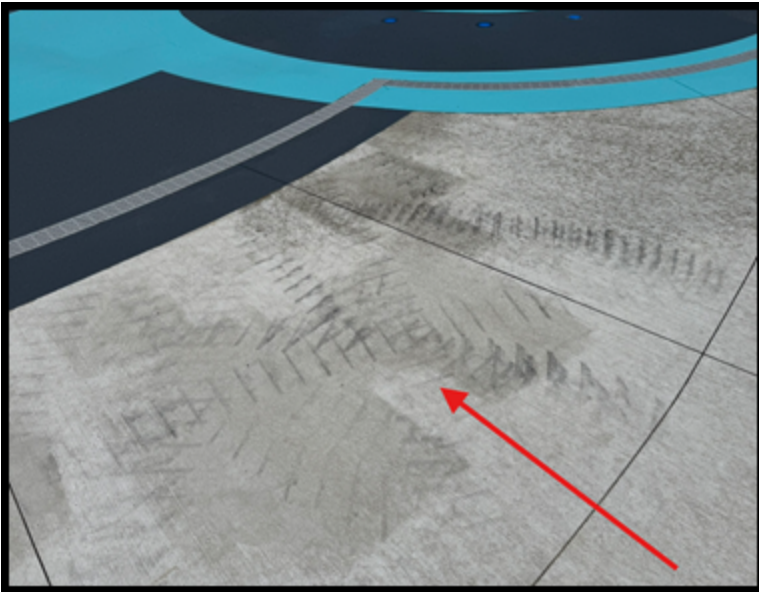
Patriot Concrete

NOT COMPLETE AS OF 9/10/26 - KAS



Tire marks shall be removed.

Edge



Verified - KAS

Recirc system flowmeter is detailed to be on recirc pump discharge/filter influent per Sheet D.05, Key Note #19 (not filter effluent) to monitor both recirc rate and backwash rate.
Provide pipe label for recirc gpm and backwash gpm.



Pleva Mechancial

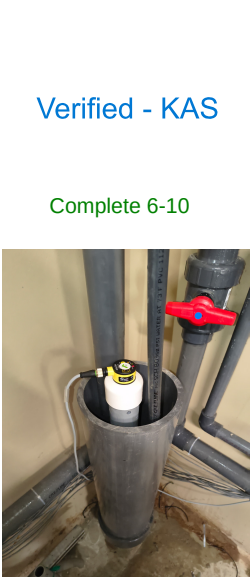
Complete 6-10



Verified - KAS

Verify the sonar water level system turns on water make-up at 24" above wet pit floor.

Pleva Mechancial



Verified - KAS

Complete 6-10

Verify the sonar water level system turns pumps off at 18" above wet pit floor.

Pleva Mechancial



Verified - KAS

Complete 6-10



Verified - KAS

Verify if recirc/backwash isolation valve is provided per Sheet D.05, Key Note #23, with chemical controller sample downstream.

This ensures no flow to chemical controller during backwash, to disable chemical feed.

Pleva Mechancial



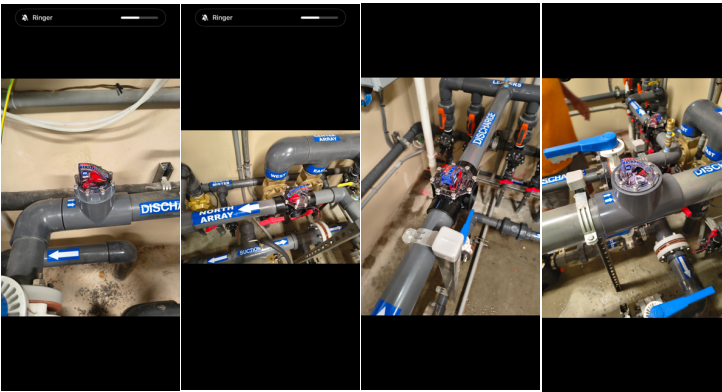
Verified - KAS

Complete 6-10
No picture provided
Edge will verify on site.

Provide flowmeters for feature pumps per Sheet D.05, Key Notes #62, #63, #64.

Pleva Mechancial

Complete 6-10



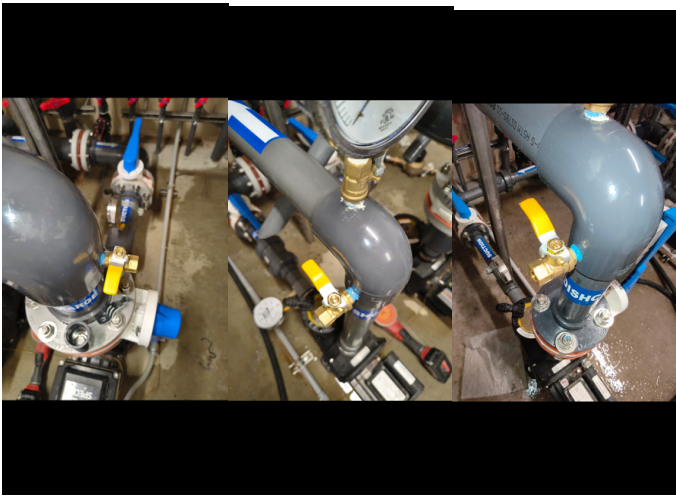
Verified - KAS

Verify if labcocks are provided on feature pump discharges for water testing per DIAL and WEAD note (02-13-25).



Pleva Mechancial
Complete 6-10

Verified - KAS



Verify if recirc pump is de-energized, then feature pumps are also de-energized, per Sheet D.05, Key Note #65.

Pleva Mechanical

Complete 6-10

When recirculation pump is turned off, feature pumps will not run. Verified - KAS

IF THIS ITEM IS REFERRING TO SOMETHING ELSE, IT NEEDS TO BE CLARIFIED AND RE-VERIFIED. KAS

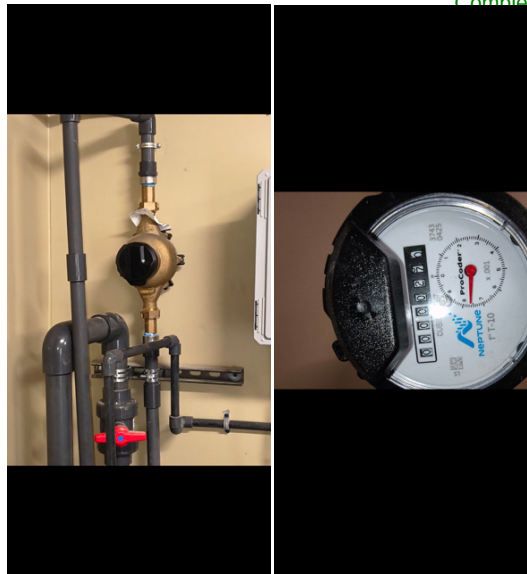


Provide water make-up water meter per Sheet D.05, Key Note #56.

Pleva Mechanical

Complete 6-10

Verified - KAS



Emergency eye wash appeared to work, and with apparent tepid water.
Verify if emergency shower operates correctly.

Pleva Mechancial
Complete 6-10

Verified - KAS



Verify if UV system is working, if it is based on flowmeter flow or programmed flow, and if it is provided with inline strainer.



Pleva Mechancial



System operational. Verified - KAS

UNSURE OF FLOW RATE AND INLINE STRAINER. ROGER SHEETZ TO CHANGE UV OUTPUT MEASUREMENT VALUE. NOT COMPLETE AS OF 9/10/26 - KAS

Chemical room exhaust fan shall be locked in the ON position...presumably with City padlock.



City/Edge

Verified - KAS

Provide chemical information signs at chemical feeders, per Spec Section 10 14 46, Part 2.02, A, and Part 3.03, C-1-a and b.

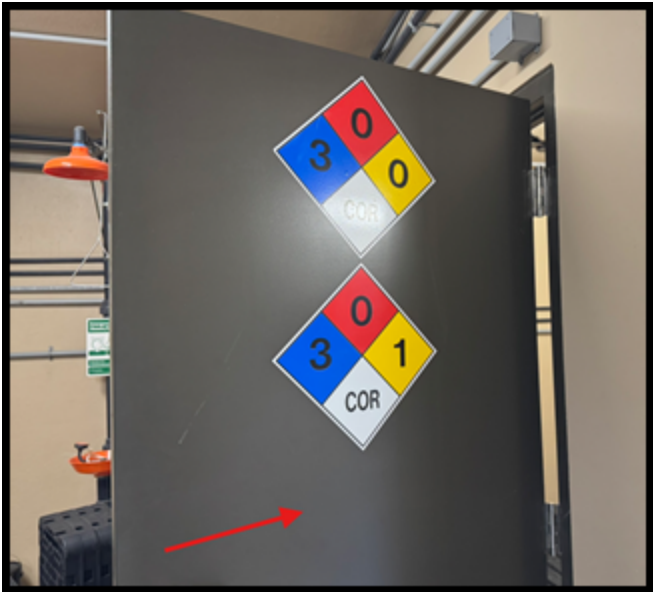


Pleva Mechancial

Verified - KAS

Pleva Mechancial

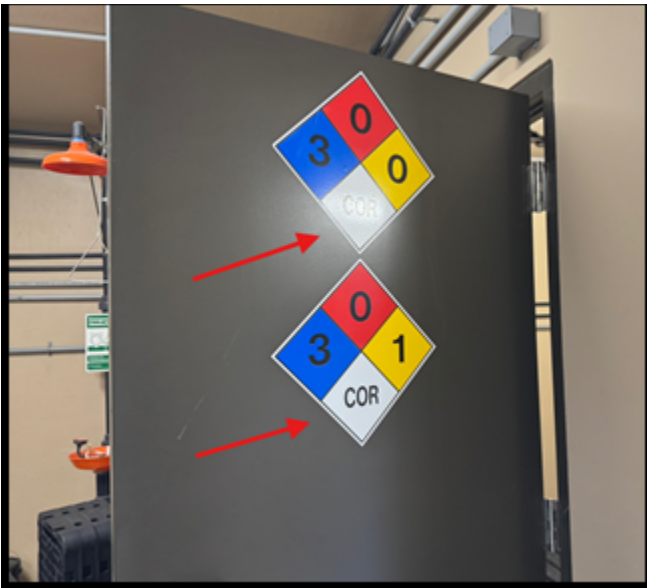
Verified - KAS



Verify NFPA signs...presumably sodium hypochlorite is oxidizer, and acid is corrosive ?
Verify if Fire Marshal requires NFPA signs on exterior door, as well interior door.

Pleva Mechancial

Verified - KAS



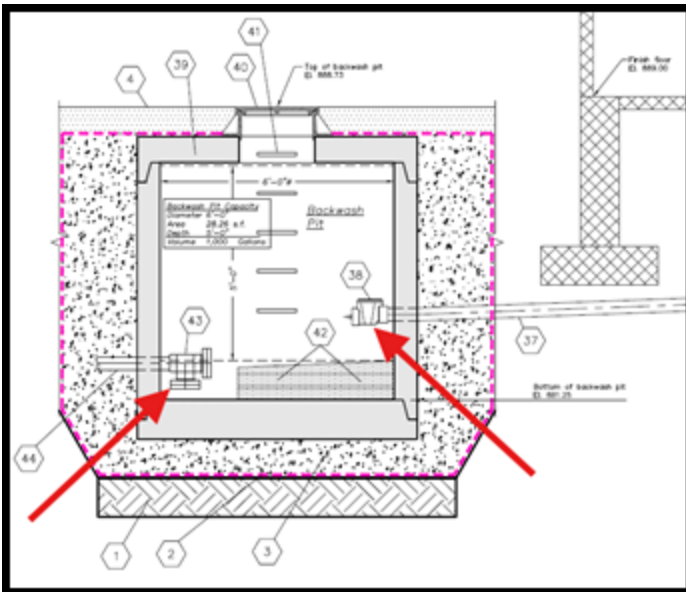
Backwash pit was not inspected...verify the horizontal backwater valve and grout trap is provided.

Pleva Mechancial

Emails going back and forth on this to with design team to find what is needed.

Plate to diffuse flow to lift station has been installed. Verified - KAS

BACKWASH PIT STILL NEEDS TO BE INSPECTED AS OF 9/10/26 - KAS



Provide an electrical bonding test on metallic items per Sheet D.02, Key Note #32.

Van Maanen

Verified - KAS

Owner shall verify if data utility is provided for remote access to chemical controller and water feature controller.



Verified - KAS

City/Edge



Steve Shank
project manager

1153 Southwest Blvd., Ste. 202
Kansas City, KS 66103
O - (913) 438-4338
C - (913) 522-2266 (preferred)



Bolton & Menk

Detailed Payment

Marshalltown - Water Plaza

Description Marshalltown Interactive Water Feature

Payment Number 8

Pay Period 06/09/2026 to 09/09/2026

Prime Contractor Edge Commercial
3155 SE Miehe Dr, Ste 2
Grimes, IA 50111

Payment Status Draft

Awarded Project Amount \$1,887,325.00

Authorized Amount \$1,855,600.93

Line Number	Item ID	Unit	Unit Price	Authorized Quantity	Current Paid Quantity	Previous Paid Quantity	Total Quantity Paid To Date	Total Quantity Placed To Date	Current Payment Amount	Total Amount Paid To Date
Section: 1 - Description										
0001	2010-C	LS	\$4,600.000	1.000	0.000	1.000	1.000	1.000	\$0.00	\$4,600.00
CLEARING AND GRUBBING										
0002	2010-D-1	CY	\$23.000	940.000	0.000	940.000	940.000	940.000	\$0.00	\$21,620.00
TOPSOIL, ON-SITE										

Line Number	Item ID	Unit	Unit Price	Authorized Quantity	Current Paid Quantity	Previous Paid Quantity	Total Quantity Paid To Date	Total Quantity Placed To Date	Current Payment Amount	Total Amount Paid To Date
0003	2010-D-2	CY	\$150.000	0.000	0.000	0.000	0.000	0.000	\$0.00	\$0.00
	TOPSOIL, COMPOST AMENDED									
0004	2010-E	CY	\$18.000	1,960.000	0.000	1,960.000	1,960.000	1,960.000	\$0.00	\$35,280.00
	EXCAVATION, CLASS 10									
0005	2010-J	SY	\$31.000	1,050.000	0.000	1,050.000	1,050.000	1,050.000	\$0.00	\$32,550.00
	SUBBASE, TEMPORARY GRANULAR MATERIAL									
0006	2010-J	SY	\$12.000	575.000	0.000	575.000	575.000	575.000	\$0.00	\$6,900.00
	SUBBASE, MODIFIED, 4 INCHES									
0007	2010-J	SY	\$57.000	838.000	0.000	838.000	838.000	838.000	\$0.00	\$47,766.00
	SUBBASE, MODIFIED, 24 INCHES									
0008	2010-K-1	EA	\$4,600.000	1.000	0.000	1.000	1.000	1.000	\$0.00	\$4,600.00
	REMOVAL OF STRUCTURE, SANITARY LIFT STATION MANHOLE									
0009	2010-M	LS	\$4,600.000	1.000	0.000	1.000	1.000	1.000	\$0.00	\$4,600.00
	COMPACTION TESTING									
0010	4010-E	EA	\$3,450.000	2.000	0.000	2.000	2.000	2.000	\$0.00	\$6,900.00
	SANITARY SEWER SERVICE									
0011	4020-A-1	LF	\$110.000	290.000	0.000	290.000	290.000	290.000	\$0.00	\$31,900.00
	STORM SEWER, TRENCHED, RCP, 15 INCH									
0012	4020-A-1	LF	\$345.000	8.000	0.000	8.000	8.000	8.000	\$0.00	\$2,760.00
	STORM SEWER, TRENCHED, RCP, 24 INCH									

Line Number	Item ID	Unit	Unit Price	Authorized Quantity	Current Paid Quantity	Previous Paid Quantity	Total Quantity Paid To Date	Total Quantity Placed To Date	Current Payment Amount	Total Amount Paid To Date
0013	4020-C	LS	\$19,200.000	1.000	0.000	1.000	1.000	1.000	\$0.00	\$19,200.00
LINEAR TRENCH DRAIN (LEAPING JET TROUGH)										
0014	4030-B	EA	\$4,600.000	1.000	0.000	1.000	1.000	1.000	\$0.00	\$4,600.00
PIPE APRON, RCP, 15 INCH										
0015	4030-B	EA	\$5,200.000	1.000	0.000	1.000	1.000	1.000	\$0.00	\$5,200.00
PIPE APRON, RCP, 24 INCH										
0016	4040-A	LF	\$23.000	220.000	0.000	220.000	220.000	220.000	\$0.00	\$5,060.00
SUBDRAIN, HDPE, 4 INCH										
0017	4040-C-1	EA	\$1,725.000	2.000	0.000	2.000	2.000	2.000	\$0.00	\$3,450.00
SUBDRAIN CLEANOUT, 4 INCH										
0018	5010-E-1	LF	\$52.000	350.000	0.000	350.000	350.000	350.000	\$0.00	\$18,200.00
WATER SERVICE PIPE, PVC, 2 INCH										
0019	5010-E-1	LF	\$144.000	230.000	0.000	230.000	230.000	230.000	\$0.00	\$33,120.00
WATER SERVICE PIPE (TRENCHLESS), PVC, 2 INCH										
0020	5010-F	EA	\$4,600.000	1.000	0.000	1.000	1.000	1.000	\$0.00	\$4,600.00
WATER SERVICE ABANDONMENT										
0021	5020-B	EA	\$7,475.000	1.000	0.000	1.000	1.000	1.000	\$0.00	\$7,475.00
TAPPING VALVE ASSEMBLY, 2 INCH										
0022	6010-A	EA	\$63,250.000	1.000	0.000	1.000	1.000	1.000	\$0.00	\$63,250.00
PACKAGE GRINDER LIFT STATION										

Line Number	Item ID	Unit	Unit Price	Authorized Quantity	Current Paid Quantity	Previous Paid Quantity	Total Quantity Paid To Date	Total Quantity Placed To Date	Current Payment Amount	Total Amount Paid To Date
0023	6010-A	EA	\$18,400.000	1.000	0.000	1.000	1.000	1.000	\$0.00	\$18,400.00
WATER MAIN MANHOLE, SW-401										
0024	6010-A	EA	\$9,200.000	1.000	0.000	1.000	1.000	1.000	\$0.00	\$9,200.00
STORM SEWER OUTLET STRUCTURE										
0025	6010-A	EA	\$7,000.000	1.000	0.000	1.000	1.000	1.000	\$0.00	\$7,000.00
STORM MANHOLE, SW-402										
0026	6010-X	EA	\$3,700.000	1.000	0.000	1.000	1.000	1.000	\$0.00	\$3,700.00
SW-512, 18"										
0027	7010-A	SY	\$64.000	417.000	0.000	417.000	417.000	417.000	\$0.00	\$26,688.00
PAVEMENT, PCC, 5 INCH										
0028	7010-A	SY	\$94.000	747.000	0.000	747.000	747.000	747.000	\$0.00	\$70,218.00
PAVEMENT, PCC, 6 INCH REINFORCED (WET DECK)										
0029	7010-A	SF	\$33.000	0.000	0.000	0.000	0.000	0.000	\$0.00	\$0.00
NON-SKID RUBBERIZED COATING										
0030	7010-I	LS	\$5,750.000	1.000	0.000	1.000	1.000	1.000	\$0.00	\$5,750.00
PCC PAVEMENT SAMPLES AND TESTING										
0031	7030-A-1	SY	\$23.000	135.000	0.000	135.000	135.000	135.000	\$0.00	\$3,105.00
REMOVAL OF SIDEWALK										
0032	7040-A	SY	\$340.000	21.000	0.000	21.000	21.000	21.000	\$0.00	\$7,140.00
FULL DEPTH PATCHES, PCC, 7 INCH										

Line Number	Item ID	Unit	Unit Price	Authorized Quantity	Current Paid Quantity	Previous Paid Quantity	Total Quantity Paid To Date	Total Quantity Placed To Date	Current Payment Amount	Total Amount Paid To Date
0033	8030-A	LS	\$8,970.000	1.000	0.000	1.000	1.000	1.000	\$0.00	\$8,970.00
TEMPORARY TRAFFIC CONTROL										
0034	9010-B	AC	\$8,000.000	0.550	0.000	0.550	0.550	0.550	\$0.00	\$4,400.00
HYDRAULIC SEEDING, SEEDING, FERTILIZING, AND MULCHING, TYPE 1 - PERMANENT LAWN										
0035	9020-A	SQ	\$140.000	115.000	0.000	115.000	115.000	115.000	\$0.00	\$16,100.00
SOD										
0036	9030-B	EA	\$18.000	0.000	0.000	0.000	0.000	0.000	\$0.00	\$0.00
PLANTS WITH WARRANTY, PERENNIAL GROUND COVER, (1 GAL)										
0037	9030-B	EA	\$1,240.000	0.000	0.000	0.000	0.000	0.000	\$0.00	\$0.00
PLANTS WITH WARRANTY, DECIDUOUS TREE										
0038	9040-A-1	LS	\$3,450.000	1.000	0.000	1.000	1.000	1.000	\$0.00	\$3,450.00
SWPPP PREPARATION										
0039	9040-A-2	LS	\$8,050.000	1.000	0.000	1.000	1.000	1.000	\$0.00	\$8,050.00
SWPPP MANAGEMENT										
0040	9040-D-1	LF	\$4.000	1,150.000	0.000	1,150.000	1,150.000	1,150.000	\$0.00	\$4,600.00
FILTER SOCK/WATTLE										
0041	9040-J	TON	\$115.000	20.000	0.000	20.000	20.000	20.000	\$0.00	\$2,300.00
RIP RAP, CLASS E										
0042	9040-N-1	LF	\$6.000	0.000	0.000	0.000	0.000	0.000	\$0.00	\$0.00
SILT FENCE OR SILT FENCE DITCH CHECK										

Line Number	Item ID	Unit	Unit Price	Authorized Quantity	Current Paid Quantity	Previous Paid Quantity	Total Quantity Paid To Date	Total Quantity Placed To Date	Current Payment Amount	Total Amount Paid To Date
0043	9040-T-1	EA	\$288.000	1.000	0.000	1.000	1.000	1.000	\$0.00	\$288.00
INLET PROTECTION DEVICE										
0044	9040-V	AC	\$3,700.000	0.000	0.000	0.000	0.000	0.000	\$0.00	\$0.00
END OF SEASON TEMPORARY EROSION CONTROL										
0045	10010-A	LS	\$7,000.000	1.000	0.000	1.000	1.000	1.000	\$0.00	\$7,000.00
DEMOLITION WORK - EXISTING RESTROOMS										
0046	11020-A	LS	\$323,775.000	1.000	0.000	1.000	1.000	1.000	\$0.00	\$323,775.00
MOBILIZATION										
0047	11050-A	LS	\$3,450.000	0.000	0.000	0.000	0.000	0.000	\$0.00	\$0.00
CONCRETE WASHOUT										
0048	12010-X-X	LS	\$8,500.000	1.000	0.000	1.000	1.000	1.000	\$0.00	\$8,500.00
FREESTANDING RINSE STATION										
0049	12010-X-X	LS	\$312,000.000	1.000	0.000	1.000	1.000	1.000	\$0.00	\$312,000.00
RESTROOM										
0050	12010-X-X	EA	\$7,500.000	3.000	0.000	3.000	3.000	3.000	\$0.00	\$22,500.00
BENCH TYPE 1 (CURVED BENCH, SINGLED SIDED)										
0051	12010-X-X	EA	\$33,400.000	0.000	0.000	0.000	0.000	0.000	\$0.00	\$0.00
BENCH TYPE 2 (CURVED BENCH, DOUBLE SIDED)										
0052	12010-X-X	EA	\$4,200.000	5.000	0.000	5.000	5.000	5.000	\$0.00	\$21,000.00
BENCH TYPE 3 (METAL BACKED BENCH)										

Line Number	Item ID	Unit	Unit Price	Authorized Quantity	Current Paid Quantity	Previous Paid Quantity	Total Quantity Paid To Date	Total Quantity Placed To Date	Current Payment Amount	Total Amount Paid To Date
0053	12010-X-X	EA	\$2,370.000	2.000	0.000	2.000	2.000	2.000	\$0.00	\$4,740.00
LITTER RECEPTACLE										
0054	12010-X-X	EA	\$2,000.000	2.000	0.000	2.000	2.000	2.000	\$0.00	\$4,000.00
CONCRETE PEBBLE										
0055	12010-X-X	LF	\$181.000	70.000	0.000	70.000	70.000	70.000	\$0.00	\$12,670.00
DECORATIVE METAL PANEL										
0056	12010-X-X	LS	\$33,670.000	1.000	0.000	1.000	1.000	1.000	\$0.00	\$33,670.00
DECORATIVE ACRYLIC PANEL ATTACHMENT										
0057	12010-X-X	LS	\$12,100.000	0.000	0.000	0.000	0.000	0.000	\$0.00	\$0.00
SIGN TYPE 1 (PARK SIGN)										
0058	12010-X-X	LS	\$54,000.000	0.000	0.000	0.000	0.000	0.000	\$0.00	\$0.00
SIGN TYPE 2 (DONOR SIGN)										
0059	12010-X-X	LS	\$26,000.000	0.000	0.000	0.000	0.000	0.000	\$0.00	\$0.00
SIGN TYPE 3 (DONOR STORY SIGN)										
0060	12010-X-X	EA	\$870.000	6.000	0.000	6.000	6.000	6.000	\$0.00	\$5,220.00
BIKE RACK										
0061	12010-X-X	LS	\$406,486.000	1.000	0.000	1.000	1.000	1.000	\$0.00	\$406,486.00
WATER FEATURE AND TREATMENT SYSTEM										
0062	12010-X-X	LS	\$9,000.000	1.000	0.000	1.000	1.000	1.000	\$0.00	\$9,000.00
SCULPTURE FOOTING										

Line Number	Item ID	Unit	Unit Price	Authorized Quantity	Current Paid Quantity	Previous Paid Quantity	Total Quantity Paid To Date	Total Quantity Placed To Date	Current Payment Amount	Total Amount Paid To Date
0063	12030-X-X	LS	\$122,200.000	1.000	0.000	1.000	1.000	1.000	\$0.00	\$122,200.00
ELECTRICAL CONDUIT/WIRING										
1010	0000-999-N	SF	-\$22.000	583.000	0.000	583.000	583.000	583.000	\$0.00	-\$12,826.00
'SQUARE FEET' ITEM: Tuffcoat (Non-Rubberized Skid Coating, Adjusted Price)										
9001	0000-999-J	LS	\$945.000	1.000	0.000	1.000	1.000	1.000	\$0.00	\$945.00
'LUMP SUM' ITEM: Mixing Valve for Water Heater										
9002	0000-999-J	LS	\$9,144.000	1.000	0.000	1.000	1.000	1.000	\$0.00	\$9,144.00
'LUMP SUM' ITEM: Building Ventilation										
9003	0000-999-J	LS	\$2,926.930	1.000	0.000	1.000	1.000	1.000	\$0.00	\$2,926.93
'LUMP SUM' ITEM: Chemical Controller Product Swap										
9004	0000-999-J	LS	-\$340.000	1.000	0.000	1.000	1.000	1.000	\$0.00	-\$340.00
'LUMP SUM' ITEM: Site furnishing installation fee deduct										
Section Totals:									\$0.00	\$1,855,600.93
Section: 2 - Description										
Section Totals:									\$0.00	\$0.00
Section: 3 - Description										
Section Totals:									\$0.00	\$0.00
Total Payments:									\$0.00	\$1,855,600.93

Time Charges

Time Limit	Original Deadline	Authorized Deadline	Charges This Period	Damages This Period	Days Completed To Date	Days Remaining To Date	Damages To Date
Final Completion	11/15/2025	11/30/2025	N/A	\$0.00	N/A	15.0 Days	\$0.00
Spring 2026 Working Days	04/01/2026	04/01/2026	N/A	\$0.00	N/A	-66.0 Days	\$19,800.00
Substantial Completion	09/15/2025	09/30/2025	N/A	\$0.00	N/A	-46.0 Days	\$13,800.00
Total Damages:							\$33,600.00

Summary

Current Approved Work:	\$0.00	Approved Work To Date:	\$1,855,600.93
Current Stockpile Advancement:	\$0.00	Stockpile Advancement To Date:	\$0.00
Current Stockpile Recovery:	\$0.00	Stockpile Recovery To Date:	\$0.00
Current Retainage:	\$0.00	Retainage To Date:	\$55,668.03
Current Retainage Released:	\$55,668.03	Retainage Released To Date:	\$55,668.03
Current Liquidated Damages:	\$0.00	Liquidated Damages To Date:	\$33,600.00
Current Adjustment:	\$0.00	Adjustments To Date:	\$0.00
Current Payment:	\$55,668.03	Payments To Date:	\$1,822,000.93
Previous Payment:	\$67,594.57	Previous Payments To Date:	\$1,766,332.90

Signatures

Agreed - _____ Date: _____

Contractor

Recommended - _____ Date: _____

Project Engineer

Approved - _____ Date: _____

City

DRAFT



**MARSHALLTOWN
MORE THAN EVER**

Mike Ladehoff, Mayor
Carol Webb, City Administrator
24 North Center Street
Marshalltown, IA 50158
PH 641.754.5701 • FX 641.754.5717

To: Mayor and City Council
From: Kelsie Stafford, Director
Meeting Date: September 14, 2026
Re: Resolution Approving Owner's Certificate of Completion and Accepting the Linn Creek Trailhead and Bridge Project #TRL24001-2

Strategic Plan Objective:

Goal 2: Enhance Marshalltown's public image.

Goal 3: Continually improve and sustain the City's infrastructure, organization, and services.

Goal 4: Partner with citizens, for-profit, non-profit and others to improve quality of life.

Recommended:

Staff recommend acceptance of work completed by Con-Struct, Inc. for the Linn Creek Trailhead and Bridge Project, #TRL24001-2.

Budget Impact:

The City of Marshalltown entered into a contract with Con-Struct, Inc. on January 9, 2025 in the amount of \$1,895,933.00 for work generally described as the Linn Creek Trailhead and Bridge Project. Change Orders 1-10 resulted in a net increase of \$414,216.47. The table below demonstrates the project expenses and funding sources:

Project Expenses:

Concept/Design Engineering	\$267,800.00	Snyder Associates
Construction Phase Engineering	\$85,000.00	Snyder Associates
Allowance (Permits, Utilities, Security)	\$4,706.62	\$7,700.00 Budgeted
Electrical Relocation	\$1,607.86	Alliant Energy
Security Cameras and Installation	\$2,993.38	BDH Technology
Stormwater General Permit Fee	\$180.91	Iowa DNR
Allowance (Landscaping by City)	\$10,000.00	
Bridge Fin Commission/Install (Note 2)	\$79,018.00	Hildi Debruyne

Construction Bid (Bridge & Trailhead)	\$1,895,933.00	Con-Struct, Inc.
Change Order 1 (Note 1 Portion)	\$10,890.00	Con-Struct, Inc.
Change Order 1 Remaining (Deduct)	(\$15,187.50)	Con-Struct, Inc.
Change Order 2 (Note 1)	\$124,663.80	Con-Struct, Inc.
Change Order 3	\$0.00	Con-Struct, Inc.
Change Order 4 (Note 2)	\$279,150.55	Con-Struct, Inc.
Change Order 5	(\$7,590.00)	Con-Struct, Inc.
Change Order 6	\$20,881.95	Con-Struct, Inc.
Change Order 7	\$2,783.00	Con-Struct, Inc.
Change Order 8	\$4,160.00	Con-Struct, Inc.
Change Order 9	\$2,529.67	Con-Struct, Inc.
Change Order 10	(\$8,065.00)	Con-Struct, Inc.
TOTAL	\$2,761,456.24	

Funding Sources:

2022 GO Bond (Fund 364)	\$560,000.00	for Trailhead
2022 GO Bond (Fund 364)	\$700,000.00	for Pedestrian Bridge
2022 GO Bond (Fund 364) "Contingency"	\$190,000.00	from Riverview Park
Trails, Inc	\$200,000.00	for Trailhead
Donations (run through ACA)	\$55,000.00	
Donations (run through City)	\$289,448.00	
Destination Iowa Grant	\$871,985.00	
TOTAL	\$2,866,433.00	

Description/Background:

Con-Struct, Inc. began work on the Linn Creek Trailhead and Bridge Project following execution of a contract in January 2025. The work as specified in the Plans and Specifications has been completed and accepted. The project is required to be closed and final reporting submitted to the Iowa Economic Development Authority by September 30, 2026. Snyder & Associates has developed a punch list with remaining minor items to be addressed during the warranty period. Staff is recommending Council approve and accept the Project and certify the final payment including 3% retainage in the amount of \$67,494.28.

Attachments:

1. 2026-09-14_2026-166_Resolution Approving Own Certificate of Completion for TRL24001-2 Trailhead and Bridge Project

2. Notice of Acceptability of Work_Trailhead and Bridge_260910_SIGNED
3. TRL24001-2_Pay App 9
4. Memo_2026.08.18_PunchListReport

**RESOLUTION APPROVING OWNER'S CERTIFICATE OF COMPLETION AND
ACCEPTING CON-STRUCT, INC. FOR THE LINN CREEK TRAILHEAD AND
BRIDGE PROJECT, #TRL24001-2**

WHEREAS, the City of Marshalltown, Iowa has heretofore entered into a contract for labor and material for the Linn Creek Trailhead and Bridge Project, #TRL24001-2; and

WHEREAS, said project has been completed by Con-Struct, Inc pursuant to the plans and specifications all as is set forth in the Final Acceptance and Certificate of Completion covering said project.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF MARSHALLTOWN, IOWA;

Section 1. That the labor and material for the Linn Creek Trailhead and Bridge Project, being project #TRL24001-2, is hereby accepted pursuant to the Owner's Statement of Completion and the City Clerk is hereby authorized and directed to do all things necessary to complete the contract with Con-Struct, Inc., including the payment of the items called for in said contract and Certificate of Completion.

Passed this 14th day of September, 2026, and signed this _____ day of September, 2026.

CITY OF MARSHALLTOWN, IOWA

Mike Ladehoff, Mayor

ATTEST:

Alicia Hunter, CMC, City Clerk

NOTICE OF ACCEPTABILITY OF WORK

Owner: City of Marshalltown Owner's Project No.: TRL24001-2
Engineer: City of Marshalltown Engineer's Project No.: TRL24001-2
Contractor: Construct, Inc. Contractor's Project No.:
Project: LINN CREEK TRAILHEAD AND BRIDGE PROJECT
Contract Name: LINN CREEK TRAILHEAD AND BRIDGE PROJECT
Notice Date: **September 10, 2026** Effective Date of the Construction Contract: **January 9, 2025**

The Owner hereby gives notice to the Contractor that Owner recommends final payment to Contractor, and that the Work furnished and performed by Contractor under the Construction Contract is acceptable, expressly subject to the provisions of the Construction Contract's Contract Documents ("Contract Documents") dated **January 9, 2025**. This Notice of Acceptability of Work (Notice) is made expressly subject to the following terms and conditions to which all who receive and rely on said Notice agree:

This Notice has been prepared with the skill and care ordinarily used by members of the engineering profession practicing under similar conditions at the same time and in the same locality.

This Notice reflects and is an expression of the Owner's professional opinion.

This Notice has been prepared to the best of Owner's knowledge, information, and belief as of the Notice Date.

This Notice is not a guarantee or warranty of Contractor's performance under the Construction Contract, an acceptance of Work that is not in accordance with the Contract Documents, including but not limited to defective Work discovered after final inspection, nor an assumption of responsibility for any failure of Contractor to furnish and perform the Work thereunder in accordance with the Contract Documents, or to otherwise comply with the Contract Documents or the terms of any special guarantees specified therein.

This Notice does not relieve Contractor of any surviving obligations under the Construction Contract, and is subject to Owner's reservations of rights with respect to completion and final payment.

Owner's Representative

By (signature):

Name (printed):

Title:



Kelsie Stafford

Park and Recreation Director

APPLICATION FOR PAYMENT NO. 9 - RETAINAGE RELEASE

PROJECT: Linn Creek Trailhead & Pedestrian Bridge Project
OWNER: City of Marshalltown
CONTRACTOR: Con-Struct Iowa
ADDRESS: 1710 East Main Street, Marshalltown, Iowa 50158
DATE: July 24th, 2026

S&A PROJECT NO.: 124.0187.01

PAYMENT PERIOD: May 31st, 2026
July 24th, 2026

1. CONTRACT SUMMARY:

Original Contract Amount:	\$1,893,308.00	CONTRACT PERIOD:
Net Change by Change Order:	<u>\$414,216.47</u>	Original Contract Date: January 9, 2024
Contract Amount to Date:	\$2,307,524.47	Contract Completion Date: June 18th, 2026

2. WORK SUMMARY:

Total Work Performed to Date:	\$2,307,524.47
Retainage: 3%	<u>\$0.00</u>
Total Earned Less Retainage:	\$2,307,524.47
Less Previous Applications for Payment:	<u>\$2,240,030.19</u>
AMOUNT DUE THIS APPLICATION:	<u>\$67,494.28</u>

3. CONTRACTOR'S CERTIFICATION:

The undersigned CONTRACTOR certifies that:

(1) all previous progress payments received from OWNER on account of Work done under the Contract referred to above have been applied to discharge in full all obligations of CONTRACTOR incurred in connection with the Work covered by prior Applications for Partial Payments.

(2) title to all materials and equipment incorporated in said Work or otherwise listed in or covered by this application for Payment are free and clear of all liens, claims, security interests and encumbrances.

Con-Struct Iowa
CONTRACTOR

By _____ DATE: _____

4. ENGINEER'S APPROVAL:

Payment of the above AMOUNT DUE THIS APPLICATION is recommended:

Snyder & Associates, Inc.
ENGINEER

By _____ DATE: _____

5. OWNER'S APPROVAL

City of Marshalltown
OWNER

By Kelsie Stafford DATE: August 19, 2026

6. DETAILED ESTIMATE OF WORK COMPLETED:

ITEM		CONTRACT ITEMS				COMPLETED WORK		
NO.	DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	QUANTITY	CO #	COST
BASE BID IMPROVEMENTS								
1	Mobilization	1	LS	\$ 106,700.00	\$ 106,700.00	1.00		\$106,700.00
2	Tree Removal	1	LS	\$ 7,000.00	\$ 7,000.00	1.00		\$7,000.00
3	Pavement Removal (HMA Trail, Parking, Old Road and Gravel Area)	1,875	SF	\$ 10.00	\$ 18,750.00	1,875.00		\$18,750.00
4	Remove / Dispose of Chain Link Fence	350	LF	\$ 5.00	\$ 1,750.00	350.00		\$1,750.00
5	Remove / Dispose of Graffiti Wall	1	LS	\$ 800.00	\$ 800.00	1.00		\$800.00
6	Strip, Stockpile,Respread Topsoil	1	LS	\$ 20,000.00	\$ 20,000.00	1.00		\$20,000.00
7	On-Site Earthwork	1	LS	\$ 15,000.00	\$ 15,000.00	1.00		\$15,000.00
8	Import Topsoil	100	CY	\$ 25.00	\$ 2,500.00	100.00		\$2,500.00
9	Erosion Control	1	LS	\$ 18,400.00	\$ 18,400.00	1.00		\$18,400.00
10	6" Depth PCC with 4" Granulart Base / Subdrains	1,949.8	SY	\$ 80.00	\$ 155,984.00	1,949.80		\$155,984.00
11	12" Width PCC Roll Curb	305	LF	\$ 40.00	\$ 12,200.00	305.00		\$12,200.00
12	6" PCC Curb and Gutter	40	LF	\$ 40.00	\$ 1,600.00	40.00		\$1,600.00
13	Site Retaining Wall at East Overlook	1	LS	\$ 100,000.00	\$ 100,000.00	1.00	CO-1	\$100,000.00
14	Steel Decorative Handrail	73	LF	\$ 240.00	\$ 17,520.00	73.00		\$17,520.00
UTILITIES								
15	HDPE Storm Sewer	380	LF	\$ 55.00	\$ 20,900.00	380.00		\$20,900.00
16	RCP Storm Sewer	93	LF	\$ 100.00	\$ 9,300.00	93.00		\$9,300.00
17	RCP Flared End Section	2	EA	\$ 3,200.00	\$ 6,400.00	2.00		\$6,400.00
18	Nyloplast Storm Basin	7	EA	\$ 3,000.00	\$ 21,000.00	7.00		\$21,000.00
19	Curb Intake	2	EA	\$ 4,000.00	\$ 8,000.00	2.00		\$8,000.00
20	Class D Rip Rap with Geotextile Fabric	1	LS	\$ 24,700.00	\$ 24,700.00	1.00		\$24,700.00
21	Storm Manhole	4	EA	\$ 6,500.00	\$ 26,000.00	4.00		\$26,000.00
22	Water Service (2")	50	LF	\$ 130.00	\$ 6,500.00	50.00		\$6,500.00
23	2" Isolation Valve	1	EA	\$ 1,800.00	\$ 1,800.00	1.00		\$1,800.00
24	Winterization Valve/Blow-off	1	LS	\$ 2,500.00	\$ 2,500.00	1.00		\$2,500.00
25	4" Sanitary Sewer Line	28	LF	\$ 150.00	\$ 4,200.00	28.00		\$4,200.00
26	Sanitary Sewer Cleanout	1	EA	\$ 1,500.00	\$ 1,500.00	1.00		\$1,500.00
27	Drop Service on Ex. Manhole (20' Deep)	1	EA	\$ 17,000.00	\$ 17,000.00	1.00		\$17,000.00
28	Site Utility Service and Transformer	1	LS	\$ 6,085.00	\$ 6,085.00	1.00		\$6,085.00
29	Electrical Service	1	LS	\$ 3,645.00	\$ 3,645.00	1.00		\$3,645.00
30	Shelter Lighting	1	LS	\$ 8,270.00	\$ 8,270.00	1.00		\$8,270.00
31	Shelter Power	1	LS	\$ 2,915.00	\$ 2,915.00	1.00		\$2,915.00
32	Site Lighting (Pedestrian and Parking)	1	LS	\$ 185,275.00	\$ 185,275.00	1.00		\$185,275.00
33	Telecom and Security Rough-Ins	1	LS	\$ 7,385.00	\$ 7,385.00	1.00		\$7,385.00
SITE AMENITIES								
34	Monoslope Event Shelter (30' x 16')	1	LS	\$ 54,000.00	\$ 54,000.00	1.00		\$54,000.00
35	Monoslope Picnic Shelter (15' x 15')	1	LS	\$ 35,430.00	\$ 35,430.00	1.00		\$35,430.00
36	Restroom Building (17' x 17')	1	LS	\$ 206,000.00	\$ 206,000.00	1.00		\$206,000.00
37	Restroom Building Foundation, Stoops, Slab	1	LS	\$ 41,000.00	\$ 41,000.00	1.00		\$41,000.00
38	Overhead Structure at Overlook	1	LS	\$ -	\$ -			\$0.00
39	Lawn Seed and Hydromulch	1	AC	\$ 4,200.00	\$ 4,200.00	1.00		\$4,200.00
40	Native Seed and Hydromulch	0.5	AC	\$ 5,250.00	\$ -			\$0.00
41	Landscaping (Shrubs, Perennials, etc.)	0	EA	\$ 125.00	\$ -			\$0.00
42	Overstory Trees	0	EA	\$ 405.00	\$ -			\$0.00
43	Ornamental Trees	0	EA	\$ 405.00	\$ -			\$0.00
44	Evergreen Trees	0	EA	\$ 420.00	\$ -			\$0.00
45	Bike Racks	20	EA	\$ 855.00	\$ 17,100.00	20.00		\$17,100.00
46	Bike Fix-It Station	1	EA	\$ 3,180.00	\$ 3,180.00	1.00		\$3,180.00
47	Benches - Custom Metal Panel Design	3	EA	\$ 4,500.00	\$ 13,500.00	3.00		\$13,500.00
48	Trash Receptacles - Custom Metal Panel Design	3	EA	\$ 3,400.00	\$ 10,200.00	3.00		\$10,200.00
49	Picnic Tables	5	EA	\$ 1,600.00	\$ 8,000.00	5.00		\$8,000.00
50	Trailhead Kiosk and Wayfinding Signage	1	LS	\$ 51,920.00	\$ 51,920.00	1.00		\$51,920.00
BRIDGE IMPROVEMENTS								
51	Removal of Existing Bridge	1	LS	\$ 47,250.00	\$ 47,250.00	1.00		\$47,250.00
52	Excavation Class 20	58	CY	\$ 58.00	\$ 3,364.00	58.00		\$3,364.00
53	Structural Concrete (Bridge)	37.4	CY	\$ 1,365.00	\$ 51,051.00	37.40		\$51,051.00
54	Reinforcing Steel, Epoxy Coated	5,472	CY	\$ 2.00	\$ 10,944.00	5,472.00		\$10,944.00
55	Pre-Engineered Steel Truss Trail Bridge, 144'-6 x 12'-0	1	EA	\$ 430,500.00	\$ 430,500.00	1.00		\$430,500.00
56	Piles, Steel, HP 10x57	480	LF	\$ 68.00	\$ 32,640.00	480.00	CO-10	\$32,640.00
57	Construction Survey	1	LS	\$ 10,450.00	\$ 10,450.00	1.00		\$10,450.00
58	Mobilization	1	LS	\$ 21,000.00	\$ 21,000.00	1.00		\$21,000.00
		ORIGINAL CONTRACT:				\$1,893,308.00	\$1,893,308.00	

ITEM		CONTRACT ITEMS				COMPLETED WORK		
NO.	DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	QUANTITY	CO #	COST
CHANGE ORDER SUMMARY:								
CO-1.1	Add Steel Lighting Attachments to Bridge	1.0	LS	\$ 10,890.00	\$ 10,890.00	1.00		\$10,890.00
CO-1.2	Reduce Retaining Wall	1.0	LS	\$ (20,000.00)	\$ (20,000.00)	1.00		-\$20,000.00
CO-1.3	Add Louvers at Restroom	1.0	LS	\$ 4,812.50	\$ 4,812.50	1.00		\$4,812.50
CO-2	Addition of Light Fixtures and Circuitry of the Truss Bridge	1.0	LS	\$ 124,663.80	\$ 124,663.80	1.00		\$124,663.80
CO-3	Time Extension (No Cost Change)							
CO-4	Polycarbonate Bridge Railing Elements	1.0	LS	\$ 279,150.55	\$ 279,150.55	1.00		\$279,150.55
CO-5	Delete 3 Wayfinding Signs	1.0	LS	\$ (7,590.00)	\$ (7,590.00)	1.00		-\$7,590.00
CO-6	Polycarbonate Bridge Railing Elements - Additional Cost	1.0	LS	\$ 20,881.95	\$ 20,881.95	1.00		\$20,881.95
CO-7	Add Signs to Wayfinding Tower	1.0	LS	\$ 2,783.00	\$ 2,783.00	1.00		\$2,783.00
CO-8	Remove and Replace Sidewalk	1.0	LS	\$ 4,160.00	\$ 4,160.00	1.00		\$4,160.00
CO-9	Bollard Relocation	1.0	LS	\$ 2,529.67	\$ 2,529.67	1.00		\$2,529.67
CO-10	Reduce Line Item #56 & #40 (Credit)	1.0	LS	\$ (8,065.00)	\$ (8,065.00)	1.00		-\$8,065.00
		TOTAL CHANGE ORDERS:				\$414,216.47		
		TOTAL CONTRACT & CHANGE ORDERS				\$2,307,524.47		

Memorandum

To: Matt Jensen, Construct Construction **Date:** July 27th, 2026
From: Tanner Volk, Snyder & Associates, Inc.
CC: Kelsie Stafford & Heather Thomas, City of Marshalltown
RE: Linn Creek Trailhead: Trailhead Punchlist

Site Activities:	Punchlist Walk Through	Date:	07/27/2026
Time of Visit	10:00 am	Weather	Sunny 95 Degrees
Contractors Onsite	Construct, City of Marshalltown, Snyder & Associates		

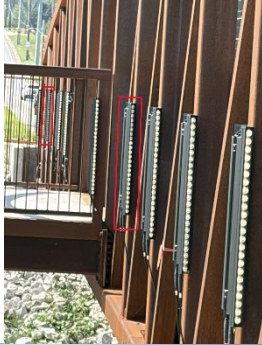
Snyder & Associates, Inc., conducted a site review for the punchlist of the trailhead area. Please see the following comments and observations:

1. Seeded areas to have healthy, weed free grass and showing at least 70% coverage. Contractor to spray, mow and drill seed with specified seed mix.



2. Concrete crack to be routed and sealed.	
3. Pooling on concrete at East trail connection before the bridge. Contractor to adjust grade and erosion stone to allow for positive drainage.	
4. Three light pole bases missing a screw. Contractor to secure base plates.	
5. Seeded areas to have healthy, weed free grass and showing at least 70% coverage. Contractor to spray, mow and drill seed with specified seed mix.	

6. Contractor to wash chalk stain from concrete surface.	
7. Contractor to remove filter fabric from dome drain intakes.	
8. Drinking fountain at bottle filler is over spraying. Reduce pressure to match adjacent drinking fountain.	
9. Contractor to verify/confirm floor sealer has been installed and positive drainage to floor drains.	

10. Contractor to remove silt material from concrete at South trail connection before Tunnel to the East.	 A photograph showing a concrete path leading up a grassy slope. There is a significant amount of light-colored silt or sand material piled up on the concrete surface, partially covering the path. A concrete wall is visible on the left side of the path.
11. Concrete crack to be routed and sealed.	 A photograph of a concrete path that turns to the right. A prominent, dark, recessed crack runs along the edge of the path where it turns. The surrounding area is grassy.
12. Contractor to verify all lights functioning properly and all bulbs on all fixtures turn on. See #4 and #9.	 A photograph of a wall with several vertical light fixtures. Two of the fixtures are highlighted with red rectangular boxes, indicating they are the focus of the inspection. The wall appears to be made of metal or concrete.
13. Seeded areas to have healthy, weed free grass and showing at least 70% coverage. Contractor to spray, mow and drill seed with specified seed mix.	 A photograph of a grassy area next to a gravel path. A stop sign is visible on the left side of the frame. The grass appears somewhat sparse and uneven, with some bare soil visible.

14. Contractor to add stain coat to exterior of restroom building.	
15. Touch up paint to be applied to railings at overlook.	
16. Lights on the bridge truss are intended to illuminate the fins. Contractor to realign and make final adjustments to the light fixtures.	

Additional Comments:

- ~~— Contractor to verify keys have been provided for restroom building.~~
 - Keys have been transferred to city staff
- Parks and Rec staff to remove the temporary trail detour signage.
- Van Maanen to install controller for programmable post lighting and run DMX cable if necessary.
- ~~— All additional sidewalk quantities have been added to the final change order.~~
- Any outstanding closeout documents (warranty letters, owners manuals, maintenance documents and testing results.)

End of Report.

MCBD Annual Report:

Fiscal Year 2026

September 14, 2026

Executive Director: Danielle Lakin



Who is Marshalltown Central Business District



Main Street is a Nationwide, grassroots movement that blends preservation, activation, & coordination to harness the power of **Character-Based Economic Growth.**

Why Does Main Street Work? It's Simple. It's People loving their Place.



The Main Street way is to inspire and engage the property owners, business owners, leaders, the friends and neighbors to create a shared value in the character of the community. **Imagine having people believe their place matters.** That is true community support. That is what Main Street is all about.

Over \$1.5 BILLION INVESTED

In 1985, the Iowa Legislature adopted Main Street America's Main Street Approach model and established MSI as a program of the Iowa Economic Development Authority. Today, MSI is recognized as one of the most successful state Main Street programs in the nation.

Our Home, Our Main Street, Our Future.

Marshalltown Central Business District (MCBD) is a nonprofit organization dedicated to the revitalization and long-term vitality of our historic downtown. We believe a strong, vibrant downtown is essential to the heart of the community and a driver of economic growth, cultural connection, and local pride. Through strategic partnerships, support for small businesses, and community-centered events, we work to create a welcoming and thriving place for everyone. Our mission is rooted in preserving our heritage while investing in the future.

MCBD has been a proud Main Street Community since 2002.



\$102,058,543

Private Investment

72,681

Volunteer Hours

\$59,817,402

Public Investment



MCBD

(Marshalltown Central Business District)

By the Numbers

2026 COMMUNITY DATA
MARSHALLTOWN, IOWA

BUSINESS WISHLIST

Shopping & Retail

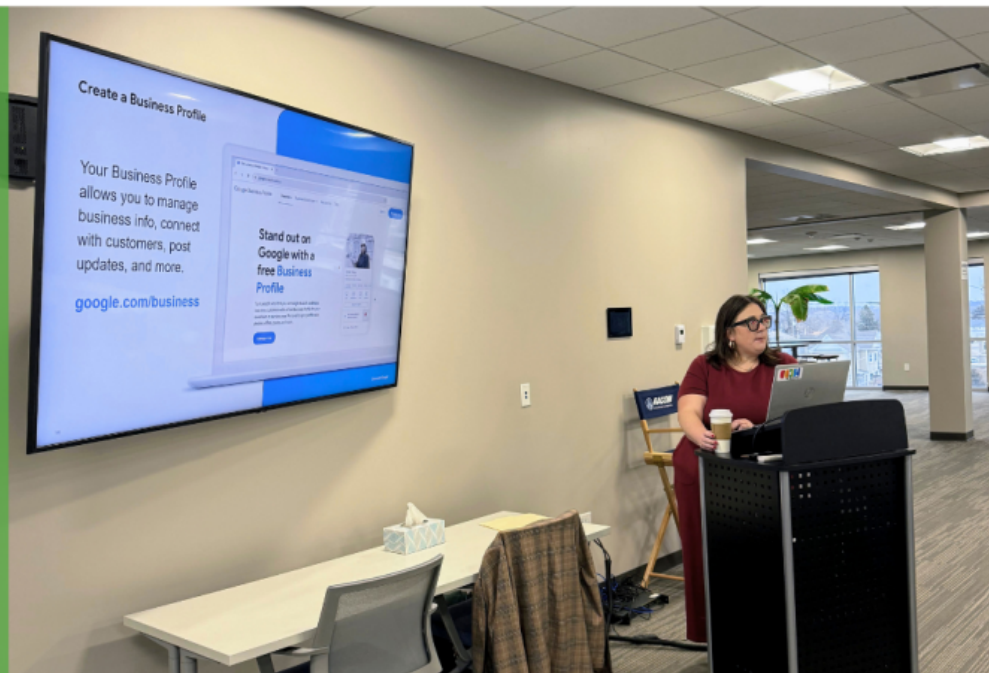
Specialty Foods Market
Kitchen, Home & Gifts
Arts, Crafts & Hobbies
Experiential Retail

Food & Drink

Deli/Sandwich Shop
Restaurant



MARSHALLTOWN
CENTRAL
BUSINESS
DISTRICT



MCBD is Helping Businesses Thrive

- Design Assistance
- Local & State Grant programs
- Community Events
- Grow with Google Partnership
- Market Data Analysis
- Marshalltown Main Event



2027 Goals:

- Sustained Community Events
- Continued Bandshell Upgrades
- Increased opportunities for businesses
- Activate vacant properties
- Continued Creative Placemaking
- Strengthen Community partnerships

REINVESTMENT STATS **FY 2026**

PRIVATE INVESTMENT

\$4,833,618

Program to Date: \$102,058,543



2 Incentive Grant
Improvements
52 Since Program Start



6 Net New Businesses
81 Since Program Start

COMMUNITY PROFILE

10 Minute Drive Time to Downtown



Population
28,287



Households
10,691



Median HH Income
\$68,627



Median Age
36



Housing Units
11,783

2

Building Projects

130 since 2002



Business Participation



Event Attendees

350

Pounds of
Litter
Removed

3

Upper Housing Completed

8

New Businesses

73K

Volunteer
Hours
since 2002

\$34K

Volunteer
Impact
in 2026

MCBD Alive

OUR STRATEGIC EVENTS
BRING VIBRANCY TO THE
DISTRICT



WHAT'S UP DOWN TOWN

MAIN STREET
REACH

10000
Attendees



OUR EVENTS SUPPORT BUSINESS, SHAPE PERCEPTIONS, & MAKE PEOPLE FALL IN LOVE WITH DOWNTOWN



**REV UP
DOWNTOWN**



**HAUNT
THE BLOCK**

**HOLIDAY
STROLL**

“We are **proud** to be a small business in **downtown Marshalltown** and excited to be a part of its **revitalization**. The support we received from the Chamber of Commerce and **MCBD** was a **significant factor** in our decision-making process. Not only was the financial support extremely helpful, but the **continual promotion of our downtown business is critical for us to remain open and prosper in the future.**”

-Michelle Burgess, Owner, Real Deals Marshalltown

Enhanced Business Retention Focus

Continued Business Growth

Strengthen Community Partnerships

Successful Community Events

Increased business support opportunities

Beautification Efforts to Activate Community Gathering Places

2027



Annual Report & Budget Report

Fiscal Year 2026

Presented to the City of Marshalltown

Honorable Mayor Mike Ladehoff, Members of the City Council, and City Administrator Carol Webb

Submitted September 10, 2026

Annual Report

Dear Honorable Mayor Ladehoff, Members of the Marshalltown City Council, and City Administrator Webb,

Executive Summary

Fiscal year 2026 (July 1, 2025 – June 30, 2026) was a year of stabilization and growth for the Marshalltown Central Business District (MCBD). Operating under consistent leadership for the first full year since the 2025 transition, MCBD resolved longstanding administrative issues, strengthened internal systems, and launched new economic-development and placemaking initiatives — all while downtown construction and softer event-sponsorship revenue continued to test the organization’s operating capacity.

Key highlights include:

- Community Gathering Spaces – Haunt the Block drew an estimated 2,000 attendees, and the 33rd Annual Holiday Stroll exceeded its fundraising goal, raising \$15,864.05.
- Business Resilience – While downtown lost two businesses during this time period, we saw many new businesses open and thrive. New businesses include: Grounded, Half Price Appliance Store, Fizz & Fiction, Lucky Friday (relocated into downtown), Big Acai (expanded into brick and mortar), American Family Insurance - Daniel McCue, La Isla Mercado, and Chineda Market.
- Organizational Growth – MCBD resolved legacy tax and payroll issues, acquired the Live After 5 concert series, participated in a Recast Your City cohort with other community partners, and maintained its national Main Street America accreditation.

Accomplishments

Community Gathering Spaces

- Ridiculous Day (July 2025) – Held during the height of streetscape construction and overlapping RAGBRAI preparations; drew an estimated 250 attendees, smaller than in past years.
- Haunt the Block (October 2025) – Drew an estimated 2,000 attendees, one of the district's most successful gatherings to date. We saw 51 businesses participate including businesses from outside the district.
- 33rd Annual Holiday Stroll (November 2025, “Snowmen at Work”) – Continued as a cornerstone tradition, with the Festival of Trees hosted at the Tallcorn Ballroom.
- Team Up to Clean Up – Held in both fall 2025 and spring 2026, drawing volunteers alongside the Department of Corrections residential facility and local businesses.
- Storybook Walk (April/May 2026) - MCBD continued its partnership with the Marshalltown Public Library to bring families downtown for a scavenger hunt.
- Live After 5 – MCBD negotiated acquisition of this concert series and relaunched it in 2026 as a sponsorship-driven event series.

- Rev Up Downtown (May 2026) – Successfully hosted, drawing an estimated 300 attendees.
- Tiny Art Walk – A new placemaking project pairing small permanent art installations in downtown berms with Arts & Culture Alliance artist grant funding.
- Beautification continued through the Veteran Tribute Banner program and downtown berm maintenance; MCBBD also began developing a new “Downtown Proud” senior banner program modeled on it.

Supporting Businesses

- Two businesses closed this year - Squish (March 2026) & Pentz Appliance (May 2026)
- MCBBD launched a quarterly business check-in program and completed the BOOMS Tracker (Building Opportunities on Main Street), a full inventory of downtown properties and businesses supporting recruitment and retention work.
- MCBBD was invited by the Marshalltown Area Chamber of Commerce Recast Your City cohort as the pilot Iowa community for small-scale manufacturing business recruitment.
- MCBBD hosted a recurring Grow with Google small-business workshop series in spring 2026.

Building a Strong Organization

- Resolved longstanding IRS payroll-tax and tax-exempt-status matters.
- MCBBD recorded 1,111 volunteer hours for an investment value of \$34,352.12. Iowa volunteer hours are valued at \$30.92 per hour.
- Friends & Investor Campaign raised \$11,215.48 for the year.
- Implemented Google Workspace and Zeffy for fee-free online giving
- Completed the Main Street America national accreditation self-assessment and completed initial coursework in the new Main Street Academy.
- Launched a new business newsletter and an internal “MCBBD Business Hub” community group.
- Began a website redesign and explored new project-management tools to strengthen internal systems.
- MCBBD's social media channels generated 1.5 million views and 3 weeks of cumulative watch time in FY2026, and the MCBBD website recorded 5,300 views.

Grant Facilitation

- Administered the Facade, Code, Safety & Security Improvements Program.
- Escape on Main's City Code Upgrade and Safety and Security Grant was finalized, improving the rear access and alley safety of the property during streetscape construction.
- A code-upgrade grant for Sports Plus remained in progress at year end.

Professional Development

In FY2026, MCBBD staff completed a range of professional development opportunities that built organizational capacity and strengthened leadership:

- Main Street Iowa Orientation
- Oskaloosa Downtown Forum
- Iowa Downtown Conference
- Main Street Iowa Fall Workshop
- Main Street Academy: Transformation Strategies Self Guided Course and Basics of Resource Management & Budgeting
- Main Street America summer webinar series, a Data Storytelling training, and a Grow with Google introductory webinar
- Smart Systems for Main Street Success training (Main Street America)
- “Unlock the Power of Your Market Snapshot” training
- Main Street Iowa Spring Workshop
- Iowa Tourism Conference
- Main Street America National Conference
- Monthly Main Street Iowa Executive Director calls

Closing

FY2026 asked MCBBD to do two things at once: resolve longstanding administrative and financial issues while expanding into new territory — acquiring Live After 5, Recast Your City, and preparing for national accreditation — against a backdrop of continued downtown construction.

With the City’s continued partnership, MCBBD enters FY2027 on firm footing and well positioned for its accreditation site visit this fall.

Respectfully submitted,
Danielle Lakin
Executive Director
Marshalltown Central Business District

Budget Report

Dear Honorable Mayor Ladehoff, Members of the Marshalltown City Council, and City Administrator Webb,

Overview

FY2026 was defined by a full year of stable leadership and continued investment in downtown infrastructure, including the Band Shell project. MCBBD closed the year with total revenue of \$129,241.13 against total expenditures of \$125,113.72 — a net operating revenue of \$4,127.41. Including other grant-related activity — \$6,982.22 in other revenue and \$17,500.00 in Band Shell grant expense funded by a grant received in a prior fiscal year — MCBBD's net revenue for the year was -\$6,390.37.

Income Summary (FY2026)

- Direct Public Support (City of Marshalltown): \$60,000.00
- Design Income (Band Shell Revenue, Veteran Banner Income): \$25,705.00
- Organization Income (Friends of MCBBD Pledges, Corporate Pledges): \$13,259.72
- Promotion Income (Holiday Stroll, Live After 5, Rev Up Downtown, Ridiculous Day, and other events): \$27,332.38
- Bank Interest: \$2,679.03
- Economic Vitality Income: \$100.00
- Services: \$165.00

Total Revenue: \$129,241.13

Other Revenue (Grant Income, Facebook Revenue): \$6,982.22

Expense Summary (FY2026)

Category	Expense	Notes
Payroll Expenses	\$58,975.25	Wages, taxes, retirement/IRA match
Design Expense	\$21,318.32	Band Shell, Veteran Banner, beautification, alleyway/walkway
Operations	\$19,738.13	Rent, insurance, marketing, overhead
Promotion Expense	\$15,786.27	Haunt the Block, Holiday Stroll, Live After 5, Rev Up Downtown, Ridiculous Day
Travel & Meetings	\$4,631.09	Conferences, meals, mileage
Organization Expense	\$2,240.32	Fundraising, volunteer

Category	Expense	Notes
		recruitment
Contract Services	\$2,400.00	Accounting fees
Economic Vitality	\$20.00	
Bank Charges	\$4.34	

Total Expenditures: \$125,113.72

Other Expenditures (Band Shell Grant): \$17,500.00 — funded by a grant received in a prior fiscal year

Net Revenue: -\$6,390.37

Respectfully submitted,
Danielle Lakin
Executive Director
Marshalltown Central Business District



**MARSHALLTOWN
MORE THAN EVER**

**Mike Ladehoff, Mayor
Carol Webb, City Administrator
24 North Center Street
Marshalltown, IA 50158
PH 641.754.5701 • FX 641.754.5717**

To: Mayor and City Council
From: Carol Webb, City Administrator
Meeting Date: September 14, 2026
Re: Public Hearing and Resolution on Urban Renewal Plan Amendment for the Marshalltown Urban Renewal Area No. 4

Strategic Plan Objective:

Former Hospital Campus Redevelopment

Recommended:

Approve the attached resolution adding the former hospital redevelopment project to Urban Renewal Area No. 4.

Budget Impact:

The proposed amendment anticipates repaying borrowed funds and/or internal advances with incremental property tax revenues in an amount not to exceed \$5,000,000, plus interest expense. The plan also states that the City intends to pursue available grants.

Description/Background:

This agenda item proposes an amendment to the existing Marshalltown Urban Renewal Area No. 4 Plan.

The project-only amendment would add the Former UnityPoint Hospital Redevelopment Project at 405 E. Main Street to the list of authorized projects within the existing urban renewal area. It does not add territory to the area.

The proposed scope includes planning, design, and engineering; environmental assessment, testing, and remediation, including underground storage tank removal and asbestos inspection, design, and abatement; demolition and/or preservation of the existing hospital building; post-demolition work; site preparation; related improvements; and any easements or rights-of-way needed to complete the project.

Attachments:

1. 2026-09-14_2026-167_Hold Hrg & Approve UR Amend no adds (Marshalltown #65 2026)
2. UR Plan Amend (Marshalltown-65 2026)

September 10, 2026

VIA EMAIL

Carol Webb
City Administrator/City Hall
Marshalltown, Iowa

Re: September, 2026 Amendment to the Marshalltown Urban Renewal Area No. 4
Our File No. 422742-65

Dear Carol:

Attached please find proceedings covering the City Council's action in holding a public hearing on and adopting a resolution to approve the September 14, 2026 urban renewal plan amendment.

We will appreciate receiving executed copies of these proceedings as soon as they are available. Please contact John Danos or me if you have any questions.

Kind regards,

Amy Bjork

Attachments

cc: Alicia Hunter
Cole O'Donnell

HEARING ON AND APPROVAL OF
AMENDMENT TO THE
MARSHALLTOWN URBAN RENEWAL
AREA NO. 4

422742-65

Marshalltown, Iowa

September 14, 2026

The City Council of the City of Marshalltown, Iowa, met on September 14, 2026, at 5:30 p.m., at the City Council Chambers, 10 West State Street, in the City, for the purpose of conducting a public hearing on a proposed urban renewal plan amendment.

The Mayor presided and the roll being called the following members of the Council were present and absent:

Present: _____

Absent: _____.

The City Council investigated and found that notice of the intention of the Council to conduct a public hearing on the urban renewal plan amendment had been published according to law and as directed by the Council and that this is the time and place at which the Council shall receive oral or written objections from any resident or property owner of the City. All written objections, statements, and evidence heretofore filed were reported to the City Council, and all oral objections, statements, and all other exhibits presented were considered.

The following named persons presented oral objections, statements, or evidence as summarized below; filed written objections or statements, copies of which are attached hereto; or presented other exhibits, copies of which are attached hereto:

(Here list all persons presenting written or oral statements or evidence and summarize each presentation.)

There being no further objections, comments, or evidence offered, the Mayor announced the hearing closed.

Council Member _____ moved the adoption of a resolution entitled “Resolution to Approve Urban Renewal Plan Amendment for the Marshalltown Urban Renewal Area No. 4,” seconded by Council Member _____. After due consideration, the Mayor put the question on the motion and the roll being called, the following named Council Members voted:

Ayes: _____

Nays: _____.

Whereupon, the Mayor declared the resolution duly adopted and signed approval thereto.

RESOLUTION NO. 2026-167

Resolution to Approve Urban Renewal Plan Amendment for the Marshalltown
Urban Renewal Area No. 4

WHEREAS, as a preliminary step to exercising the authority conferred upon Iowa cities by Chapter 403 of the Code of Iowa (the “Urban Renewal Law”), a municipality must adopt a resolution finding that one or more slums, blighted or economic development areas exist in the municipality and that the rehabilitation, conservation, redevelopment, development or a combination thereof, of such area or areas is necessary in the interest of the public health, safety or welfare of the residents of the municipality; and

WHEREAS, this City Council of the City of Marshalltown, Iowa (the “City”), by prior resolution established the Marshalltown Urban Renewal Area No. 4 (the “Urban Renewal Area”) and adopted an urban renewal plan (the “Plan”) for the governance of projects and initiatives therein; and

WHEREAS, an amendment (the “Amendment”) to the Plan has been prepared which authorizes the undertaking of a new urban renewal project (the “Project”) in the Urban Renewal Area consisting of using tax increment financing to pay the costs of planning, designing, and implementing a project to demolish and/or preserve the former UnityPoint Hospital building, including environmental assessment and remediation, site preparation, and related improvements; and

WHEREAS, notice of a public hearing by the City Council on the proposed Amendment was heretofore given in strict compliance with the provisions of Chapter 403 of the Code of Iowa, and the Council has conducted said hearing on September 14, 2026; and

WHEREAS, copies of the Amendment, notice of public hearing and notice of a consultation meeting with respect to the Amendment were mailed to Marshall County and the Marshalltown Community School District; the consultation meeting was held on August 27, 2026; and responses to any comments or recommendations received following the consultation meeting were made as required by law;

NOW, THEREFORE, It Is Resolved by the City Council of the City of Marshalltown, Iowa, as follows:

Section 1. The Amendment, attached hereto and made a part hereof, is hereby in all respects approved.

Section 2. It is hereby reaffirmed by this City Council as follows:

A. The Project proposed under the Amendment conforms to the general plan for the development of the City;

B. The Project proposed under the Amendment is necessary and appropriate to facilitate the proper growth and development of the City in accordance with sound planning standards and local community objectives.

C. The Project described in the Amendment is necessary to restore the property situated in the Urban Renewal Area to its highest and best use and to prevent the spread of blighted conditions in the Urban Renewal Area; and

D. It is not intended that families will be displaced as a result of the City's undertaking under the Amendment. Should such issues arise with future projects, then the City will ensure that a feasible method exists to carry out any relocations without undue hardship to the displaced and into safe, decent, affordable and sanitary housing.

Section 3. All resolutions or parts thereof in conflict herewith are hereby repealed, to the extent of such conflict.

Passed and approved September 14, 2026.

Mayor

Attest:

City Clerk

(Attach copy of the urban renewal plan amendment to this resolution.)

• • • •

Upon motion and vote, the meeting adjourned.

Mayor

Attest:

City Clerk

STATE OF IOWA
MARSHALL COUNTY
CITY OF MARSHALLTOWN

SS:

I, the undersigned, do hereby certify that I am the duly appointed, qualified and acting City Clerk of the City of Marshalltown, Iowa and that as such I have in my possession or have access to the complete corporate records of the City and of its officers; and that I have carefully compared the transcript hereto attached with the aforesaid records and that the attached is a true, correct and complete copy of the corporate records relating to the action taken by the City Council preliminary to and in connection with approving the urban renewal plan amendment for the Marshalltown Urban Renewal Area No. 4 in the City of Marshalltown, Iowa.

WITNESS MY HAND this ____ day of _____, 2026.

City Clerk

CITY OF MARSHALLTOWN, IOWA
URBAN RENEWAL PLAN AMENDMENT
MARSHALLTOWN URBAN RENEWAL AREA NO. 4

September, 2026

The Urban Renewal Plan (the “Plan”) for the Marshalltown Urban Renewal Area No. 4 (the “Urban Renewal Area”) of the City of Marshalltown, Iowa (the “City”) is being amended for the purpose of identifying a new urban renewal project to be undertaken within the Urban Renewal Area.

1) Identification of Project. By virtue of this amendment, the list of authorized urban renewal projects in the Plan is hereby amended to include the following project description:

Name of Project: Former UnityPoint Hospital Redevelopment Project

Date of Council Approval of Project: September 14, 2026

Description of the Project and Project Site: The City will undertake a redevelopment project (the “Redevelopment Project”) for the former UnityPoint Hospital property situated at 405 E. Main Street in the Urban Renewal Area (the “Property”), including planning, design and engineering; environmental assessment, testing and remediation (including underground storage tank removal and asbestos inspection, design and abatement); demolition and/or preservation of the existing hospital building; post-demolition activities; site preparation; and related improvements, all to facilitate the future redevelopment and economic development of the Property.

Description of Properties to be Acquired in Connection with the Project: The City will acquire such easement territory and rights-of-way as are necessary to successfully undertake the Redevelopment Project.

Description of Use of TIF: It is anticipated that the City will pay for then Redevelopment Project with either borrowed funds and/or the proceeds of internal advances of City funds on hand. In any case, the City’s obligations (the “Obligations”) will be repaid with incremental property tax revenues derived from the Urban Renewal Area. It is anticipated that the City’s use of incremental property tax revenues for the Redevelopment Project will not exceed \$5,000,000, plus any interest expense incurred by the City on the Obligations.

Analysis of Use of TIF: In accordance with the requirement of Section 403.5(2)(b)(1) of the Code of Iowa, the City has analyzed its proposed use of incremental property tax revenues for the funding of the Redevelopment Project and alternative development and funding options for the Redevelopment Project. The results of that analysis are summarized as follows:

A) Alternate Development Options: The City Council has determined that a need exists for the alleviation of blighted conditions within the Urban Renewal Area. The Redevelopment Project will facilitate the remediation and redevelopment of the Property through environmental assessment and remediation, demolition and/or preservation of the existing hospital building, and site preparation activities, thereby enhancing the Property's potential for its highest and best use. The Redevelopment Project will alleviate the blighted conditions on the Property, prevent the spread of blighted conditions in the Urban Renewal Area, and is expected to promote commerce, economic growth, and development within the Urban Renewal Area.

B) Alternate Financing Options:

* Local Option Sales and Services Tax Revenues are unavailable to assist the City in paying the costs of the Redevelopment Project because such revenues have been allocated to other projects in the City.

* General Fund: The City cannot access its General Fund reserves to aid in the funding of the Redevelopment Project without risking unsound fiscal practice because the annual proceeds from the general fund levy are fully committed to maintain the operational integrity of the City.

* Capital Improvements Levy: The City does not have a Capital Improvements Levy available, and the imposition of such additional levy would require a successful referendum, which is not feasible at this time.

* Debt Service Levy: The City may use its urban renewal authority to aid in the authorization of general obligations bonds (the "Bonds") to finance the Redevelopment Project. The use of tax increment financing to pay a portion of the debt service payments on the Bonds will lessen the burden on individual taxpayers that would result from a spike in the debt service levy rate and will shift that burden onto valuation increases resulting from the City's successful economic development initiatives in the Urban Renewal Area.

* Utility Surpluses: The City does not have identified surpluses in its sewer and/or water utility funds that could aid in the funding of the Redevelopment Project.

* Grants: The City intends to apply for available grants to assist in paying the costs of the Redevelopment Project.

2) Required Financial Information. The following information is provided in accordance with the requirements of Section 403.17 of the Code of Iowa:

Constitutional debt limit of the City:	<u>\$118,981,268</u>
Outstanding general obligation debt of the City:	<u>\$ 45,480,000</u>
Proposed maximum indebtedness to be incurred in connection with this September, 2026 Amendment:	<u>\$ 5,000,000</u>

*It is anticipated that some or all of the debt incurred hereunder will be subject to annual appropriation by the City Council.



**MARSHALLTOWN
MORE THAN EVER**

**Mike Ladehoff, Mayor
Carol Webb, City Administrator
24 North Center Street
Marshalltown, IA 50158
PH 641.754.5701 • FX 641.754.5717**

To: Mayor and City Council
From: Cole O'Donnell, Finance Director
Meeting Date: September 14, 2026
Re: Resolution Authorizing Internal Advance for Funding of Urban Renewal Project

Strategic Plan Objective:

Goal 1: Expand and improve development in the community.

Recommended:

Approve and adopt the resolution.

Budget Impact:

Will allow Fund 355 Dangerous & Dilapidated to maintain a positive balance while expenses are incurred in relation to the preliminary work on the remediation of the old hospital site.

Transfer and expenses will need to be amended into the FY 27 budget. The use of tax increment financing (TIF) to repay the loan would result in approximately a \$12,938 loss to Fund 001 General Fund absent any new increment generated by the property. This is based on FY 27 property tax levies.

Description/Background:

The resolution provides for a loan from Fund 611 WPCP Revenue to Fund 355 Dangerous & Dilapidated for the purpose of funding preliminary remediation projects related to the old hospital. The loan is to be paid from tax Increment financing (TIF) in annual or semi-annual payments. Final payment must be made no later than June 1, 2037. No interest is charged on the loan. Should development occur prior to the final payment date and sufficient TIF funds are generated from the development, the loan can be pre-paid.

In order to make a loan from Fund 611, a determination of surplus in the amount of the loan (\$500,000.00) needs to be made. The determination is made as follows:

- FY 26 Gross Revenues: \$ 9,132,867
- FY 26 Operating Expenses \$ 8,493,150
- FY 26 Net Revenue \$ 639,717
- June 30, 2026 Ending Balance \$27,421,756

Attachments:

1. 2026-09-14_2026-168_Internal Advance Resolution (Marshalltown #65 2026)

September 10, 2026

Via Email

Carol Webb
City Administrator/City Hall
Marshalltown, Iowa

Re: Internal Advance
Our File No. 422742-65

Dear Carol:

We have prepared and attached an Internal Advance Resolution for use by the City Council at their meeting on September 14, 2026.

Please call John Danos or me with any questions you might have regarding this matter.

Kind regards,

Amy Bjork

Attachment

cc: Alicia Hunter
Cole O'Donnell

MINUTES PROVIDING FOR ADOPTION
OF RESOLUTION APPROVING
INTERNAL ADVANCE

422742-65

Marshalltown, Iowa

September 14, 2026

The City Council of the City of Marshalltown, Iowa met on September 14, 2026, at 5:30 p.m., at the City Council Chambers, 10 West State Street, in the City. The meeting was called to order by the Mayor, and the roll was called showing the following Council Members present and absent:

Present: _____

Absent: _____.

After due consideration and discussion, Council Member _____ introduced the following resolution and moved its adoption, seconded by Council Member _____. The Mayor put the question upon the adoption of said resolution, and the roll being called, the following Council Members voted:

Ayes: _____

Nays: _____

Whereupon, the Mayor declared the resolution duly adopted, as hereinafter set out.

• • • •

At the conclusion of the meeting and upon motion and vote, the City Council adjourned.

Mayor

Attest:

City Clerk

RESOLUTION NO. 2026-168

Resolution Authorizing Internal Advance for Funding of Urban Renewal Project

WHEREAS, the City of Marshalltown, Iowa (the “City”), has previously established the Marshalltown Urban Renewal Area No. 4 (the “Urban Renewal Area”) and has established a Tax Increment Revenue Fund (the “Tax Increment Fund”) for the Urban Renewal Area; and

WHEREAS, the City has authorized an urban renewal project (the “Project”) in the Urban Renewal Area consisting of the redevelopment of the former UnityPoint Hospital property; and

WHEREAS, certain costs (the “Project Costs”) will be incurred in connection with the carrying out of the Project; and

WHEREAS, in order to cover a portion of the Project Costs and to make such Project Costs eligible to be recouped from incremental property tax revenues, it is necessary to facilitate an internal advance of funds;

NOW, THEREFORE, IT IS RESOLVED by the City Council of the City of Marshalltown, Iowa, as follows:

Section 1. The City is hereby found to be current on all of its operations and maintenance expenses for the Municipal Sanitary Sewer Utility System (the “Sewer Utility”). Furthermore, the City is hereby found to be up-to-date and in full compliance with the covenants and requirements of all bonds, notes, pledge orders and other obligations to which the Net Revenues of said Sewer Utility have been pledged. It is hereby found and determined that a surplus of at least Five Hundred Thousand Dollars (\$500,000) exists in the Sewer Revenue Fund. The surplus calculation is shown on Exhibit A hereto.

Section 2. It is hereby directed that an amount not in excess of Five Hundred Thousand Dollars (\$500,000) (the “Sewer Fund Advance”) be advanced from the Sewer Revenue Fund (Water Pollution Control Fund) in order to pay a portion of the Project Costs. The Sewer Fund Advance shall be repaid to the Source Fund, without interest, out of incremental property tax revenues received with respect to the Urban Renewal Area.

It is intended that the Sewer Fund Advance shall be repaid to the Sewer Revenue Fund in one or more annual installments by June 1, 2037, provided, however, that repayment of the Sewer Fund Advance is subject to the determination of the City Council that there are incremental property tax revenues available for such purpose which have been allocated to or accrued in the Tax Increment Fund relative to the Sewer Fund Advance, and the City Council reserves the right to appropriate funds to the repayment of the Sewer Fund Advance, or to withhold such appropriation at its discretion.

Section 3. A copy of this Resolution shall be filed in the office of the County Auditor of Marshall County, Iowa to evidence the Sewer Fund Advance. Pursuant to Section 403.19 of

the Code of Iowa, the City Clerk is hereby directed to certify, no later than December 1, 2026, the original amount of the Sewer Fund Advance.

Section 4. All resolutions or parts thereof in conflict herewith are hereby repealed, to the extent of such conflict.

PASSED AND APPROVED this September 14, 2026.

Mayor

Attest:

City Clerk

EXHIBIT A

Sewer Revenue Fund
Surplus Calculation
(reflect below or attach)

Sewer Revenue Fund Gross Revenue and Operating Expense Listing for the Fiscal Year
Ended June 30, 2026:

	Sewer Fund June 30, 2026 Fiscal Year Amount
Gross Revenues	\$
Less: Operating Expenses	\$
Sewer Fund Net Revenues	\$

June 30, 2026 Sewer Fund Ending Cash
Balance: \$ _____



**MARSHALLTOWN
MORE THAN EVER**

Mike Ladehoff, Mayor
Carol Webb, City Administrator
24 North Center Street
Marshalltown, IA 50158
PH 641.754.5701 • FX 641.754.5717

To: Mayor and City Council
From: Ben Daleske, Engineer, Heather Thomas, Public Works Director
Meeting Date: September 14, 2026
Re: Resolution Approving Contract Change Order #4 for the Center St Viaduct Rehabilitation Project, being Iowa DOT DHM-4797(629)-8K-64 and City Project #STR21002, a Decrease of \$254,381

Strategic Plan Objective:

Within the October 2025 Goal Setting Report, the Center St Viaduct Repair project was noted as a supporting project to the overall Strategy of “Enhancing Marshalltown’s Public Image”. None of the Top or High Priority Goals identified in the 2025 Strategic Plan are related specifically to the Center Street Viaduct Project; however, a High Priority Goal was to determine the allocation of remaining bond proceeds, of which the Center Street Viaduct project is utilizing Bond Funds.

Recommended:

Recommend approving Change Order #4 with Boulder Construction for the Iowa DOT BHM-4797(629)--8K-64, Center St Viaduct rehabilitation project, STR21002, a Decrease for \$254,381

Budget Impact:

Expenses:

Item	Vendor	Cost	Notes
Conceptual Engineering	Stanley	\$ 121,400.00	Contract Completed / Paid 12/14/21
Design Engineering	Stanley	\$ 222,400.00	
UP RR Preliminary Reimbursement Agreement	UP Railroad	\$ 25,000.00	
Material for Temporary Finger Joint Welding	Central Iowa Machine	\$ 6,036.00	Contract Completed - Paid 03/10/23

Design Engineering Amend	Stanley	\$ 33,500.00	Executed 05/29/24
UPRR Permit	UP Railroad	\$ 1,000.00	Agreement executed 10/17/25
UPRR Construction Reimbursement Agreement	UP Railroad	\$ 90,000.00	Estimate Council Approved 10/27/25. UPRR bills actual.
Construction Engineering Assistance	Stanley	\$ 104,600.00	Limited Construction Engineering Support Scope
Steel Fabrication Inspection	Pennoni	\$ 55,922.86	Invoice Cost
Gradation Testing	DOT	\$500.00	In Process
Outside Construction Engineering, Inspection, UPRR Additional Expenses, and Testing Materials	TBD	\$238,200.00	City staff will do what we can to minimize outside consultants. Number shown is a placeholder.
Electrical Disconnect/Reconnect	Marshalltown	\$5,000.00	Conduit Removal & Replacement
Railing Safety Touch Up	Marshalltown City Staff	\$ 10,000.00	Estimated Material Costs
Construction	Boulder Construction	\$4,049,299.00	Payments to Date
Change Order #1	Boulder Construction	\$160,461.00	Additional Concrete Repairs
Change Order #2	Boulder Construction	\$76,844.25	Additional Concrete Repairs
Change Order #3	Boulder Construction	\$87,970.70	Class A Deck Repairs
Change Order #4	Boulder Construction	(\$254,381.00)	Removal of Railing Work
Construction Contingency	TBD	\$319,812.19	
TOTAL		\$ 5,353,565.00	

Revenue:

Fund / Source	Revenue	Notes
Fund 110 – Road Use Tax (FY21)	\$ 60,700.00	
Fund 110 – Road Use Tax (FY22)	\$ 60,700.00	
Fund 363 – 2021 GO Bond	\$ 218,592.03	11/03/21 Bond Sale, w several bond swaps
Fund 354 – Police & Fire Bond	\$ 62,272.00	Bond Swaps to Utilize P/F Bond
Fund 365 – 2023 GO Bond	\$ 3,451,300.97	Bond Swaps & Additional allocation provided from SIP
City Bridge Grant Funds	\$ 1,500,000.00	
TOTAL	\$ 5,353,565.00	

Description/Background:

During the City Council discussion at the July 27th City Council meeting, city staff were directed to do the following in relation to the Center St railing:

- Request a change order to remove blast cleaning & painting of the existing pedestrian railing from the current contract.
- Direct city staff to further explore options for chain link materials that may have been procured or began production. Return with a recommendation to Council.
- Direct city staff to spot address sharp/exposed metal edges. Addressing would include a rubberized filler material and sealant. Rust and flaking paint would remain.
- Council Strategic Planning & Community priority discussions in the next few years to provide city staff direction on railing replacement project. Program a railing replacement project in conjunction with superstructure painting in the next Center St Viaduct phase project. Timing to be reviewed annually with bridge & railing inspections.

City staff have further explored options for chain link materials that were procured and production was begun, in addition to the request from the Contractor to resolve work completed after a previous discussion where direction was given to proceed with replacing the existing railing with black vinyl chain link fence. An initial request from a subcontractor (Taves), attached, requested payment of \$70,000. Through negotiations, city staff recommends the following resolution:

- Become the owner of 100 pieces of 3-1/2" Dia, 12'-6" Sched40 Black Vinyl Coated Posts at a delivered price of \$26,719. City staff will further explore repurposed use or resale of the material.

- Settle on a city contribution of \$9,000 towards restocking or reuse of materials that had been in production.

Change Order #4 has been prepared based on this recommendation and the removal of painting/sandblasting of the existing railing from the contract.

Attachments:

1. Resolution Approving CO4 - STR21002
2. STR21002 Center St Viaduct Change Order 4
3. STR21002 Subcontractor Taves Request

RESOLUTION APPROVING CONTRACT CHANGE ORDER #4 FOR THE CENTER ST VIADUCT REHABILITATION PROJECT, BEING IOWA DOT BHM-4797(629)--8K-64 AND CITY PROJECT NO. STR21002, A DECREASE OF \$254,381

WHEREAS, the City of Marshalltown, Iowa, has heretofore entered into a contract with Boulder Contracting, LLC. for the Center St Viaduct Rehabilitation Project, #STR21002; and

WHEREAS, a change that results in a decrease in contract amount is requested for items to complete the project.

NOW, THEREFORE, BE IT RESOLVED BY THE COUNCIL OF THE CITY OF MARSHALLTOWN, IOWA:

Section 1. That the contract Change Order #4 for the Center St Viaduct Rehabilitation Project, #STR21002, in the decreased amount of \$254,381.

Passed this 14th day of September 2026, and signed this _____ day of September 2026.

CITY OF MARSHALLTOWN, IOWA

Mike Ladehoff, Mayor

ATTEST:

Alicia Hunter, CMC, City Clerk



City of Marshalltown STR21002

Change Order Details

64-4797-629

Description	BHM-4797(629)--8K-64, Letting Date- January 21, 2026
Prime Contractor	BOULDER CONTRACTING, LLC. 606 E. 1ST ST Grundy Center, IA 50638
Change Order	4
Status	Pending
Date Created	06/23/2026
Type	Non-Substantial
Change Order Description	Remove 130, 140 for removing painting of existing railing. Add 8030, & 8040 to remove the payment for painting of the railing in the contract. Add 8050 for cost of material unused and 8060 for a restocking fee.
Awarded Project Amount	\$4,049,299.00
Authorized Project Amount	\$4,374,574.95
Change Order Amount	-\$254,381.00
Revised Project Amount	\$4,120,193.95

B - Reason for change:

0130 - Remove item 2508-0805000 Blast cleaning of Structural Steel as City is removing painting the existing railing from the contract.

0140 - Remove item 2508-0970000 Containment as City is removing painting the existing railing from the contract..

Add 8030 item 2508-0805000 Blast cleaning of Structural Steel LS needed to be revised to reflect change of scope.

Add 8040 item 2508-0970000 Containment LS needed to be revised to reflect change of scope.

Add 8050 item 6100-1109010 Unincorporated Materials as City has decided to forgo doing any replacing the existing fencing with chain-link and these materials were unable to be reused by manufacturer.

Add 8060 item 2599-9999010 ('Lump Sum' Item) – Restocking Fee as City was going to be unable to reuse some of the material by the manufacturer and a restocking fee was required.

C - Settlement for cost(s) of change as follows with items addressed in Sections F and/or G:

0130 - Remove Blast cleaning of Structural Steel for -\$280,000

0140 - Remove Containment for -\$255,000

8030 - Add LS Blast cleaning of Structural Steel for \$140,000

8040 - Add LS Containment for \$104,900

8050 - Add LS Unincorporated Materials for \$26,719

8060 - Add ('Lump Sum' Item) – Restocking Fee for \$9,000

D - Justification for cost(s) (See I.M. 6.000 Attachment D, Chapter 2.36, for acceptable justification):

Reduce per Contract Unit Price.

Reflects cost given by contract for removing of painting of fencing to the contract by \$290,100.

Cost of Unincorporated Materials is \$26,719 via invoice

Cost of Restocking Fee is \$9,000 via invoice

Increases/Decreases

Line Number	Item ID	Unit	Unit Price	Current		Change		Revised	
				Quantity	Amount	Quantity	Amount	Quantity	Amount
Section: 0001 - BHM-4797(629)--8K-64, ITEMS FOR A 1434'-0 X 36'-0 STEEL BEAM BRIGDE WITH TWO 4'-6 SIDEWALKS									
0130	2508-0805000	LS	\$280,000.000	1.000	\$280,000.00	-1.000	-\$280,000.00	0.000	\$0.00
BLAST CLEANING OF STRUCTURAL STEEL									
			Funding Details						
64-4797-629-CAT-1 64-4797-629-CAT-1 64-4797-629				1.000	\$280,000.00	-1.000	-\$280,000.00	0.000	\$0.00
64-4797-629-CAT-2 NON-PARTICIPATING				0.000	\$0.00	0.000	\$0.00	0.000	\$0.00
64-4797-629-CAT-3 64-4797-629-CAT-3 64-4797-629				0.000	\$0.00	0.000	\$0.00	0.000	\$0.00
0140	2508-0970000	LS	\$255,000.000	1.000	\$255,000.00	-1.000	-\$255,000.00	0.000	\$0.00
CONTAINMENT									
			Funding Details						
64-4797-629-CAT-1 64-4797-629-CAT-1 64-4797-629				1.000	\$255,000.00	-1.000	-\$255,000.00	0.000	\$0.00
64-4797-629-CAT-2 NON-PARTICIPATING				0.000	\$0.00	0.000	\$0.00	0.000	\$0.00
64-4797-629-CAT-3 64-4797-629-CAT-3 64-4797-629				0.000	\$0.00	0.000	\$0.00	0.000	\$0.00
2 items			Totals		\$535,000.00		-\$535,000.00		\$0.00

New Items

Line Number	Item ID	Unit	Quantity	Unit Price	Extension
Section: 0001 - BHM-4797(629)--8K-64, ITEMS FOR A 1434'-0 X 36'-0 STEEL BEAM BRIGDE WITH TWO 4'-6 SIDEWALKS					

Line Number	Item ID	Unit	Quantity	Unit Price	Extension
8030	2508-0805000	LS	1.000	\$140,000.000	\$140,000.00
BLAST CLEANING OF STRUCTURAL STEEL:		Funding Details			
	64-4797-629-CAT-1 64-4797-629-CAT-1 64-4797-629		1.000	\$140,000.000	\$140,000.00
8040	2508-0970000	LS	1.000	\$104,900.000	\$104,900.00
CONTAINMENT:		Funding Details			
	64-4797-629-CAT-1 64-4797-629-CAT-1 64-4797-629		1.000	\$104,900.000	\$104,900.00
8050	6100-1109010	LS	1.000	\$26,719.000	\$26,719.00
{EXTRA WORK} UNINCORPORATED MATERIALS:		Funding Details			
	64-4797-629-CAT-1 64-4797-629-CAT-1 64-4797-629		1.000	\$26,719.000	\$26,719.00
8060	2599-9999010	LS	1.000	\$9,000.000	\$9,000.00
('LUMP SUM' ITEM):		Funding Details			
	64-4797-629-CAT-1 64-4797-629-CAT-1 64-4797-629		1.000	\$9,000.000	\$9,000.00
4 items					Total: \$280,619.00

Funding Summary

Fund Package	Original Amount	Authorized Amount	Pending Change	Revised Amount
64-4797-629-CAT-1 64-4797-629-CAT-1 64-4797-629	\$3,912,107.00	\$4,237,382.95	-\$254,381.00	\$3,983,001.95
64-4797-629-CAT-3 64-4797-629-CAT-3 64-4797-629	\$133,692.00	\$133,692.00	\$0.00	\$133,692.00

Fund Package	Original Amount	Authorized Amount	Pending Change	Revised Amount
64-4797-629-CAT-2 NON-PARTICIPATING	\$3,500.00	\$3,500.00	\$0.00	\$3,500.00
3 fund packages	\$4,049,299.00	\$4,374,574.95	-\$254,381.00	\$4,120,193.95

Mike Ladehoff

City of Marshalltown

Mayor

Title

Date

SETTLEMENT CLAIM & COST BREAKDOWN

Date: August 12, 2026

To: City Project Management & Procurement Department

Regarding: Contract Settlement and Cost Claim – Fencing Scope Removal

Dear Project Management and Procurement Committee,

We submit this formal cover letter and accompanying cost breakdown following the City's decision to remove the fencing scope from the project after issuing the Notice to Proceed, and the subsequent complete cancellation of our contract.

As a specialized, growing enterprise, a project of this duration represents a significant portion of our operational pipeline. The sudden elimination of a 2-3 month workload—which had been planned and scheduled for months—creates immediate, severe disruptions to our labor allocation and financial forecasting. In the fencing industry, project opportunities cannot be instantly replaced. Fencing is traditionally the final trade on a job site; consequently, our bidding cycle requires precise, long-term scheduling to balance strict project timelines with crew availability.

To minimize the financial impact on the City, we have leveraged our strong, long-standing vendor relationships to their absolute limit. Our primary objective throughout this process has been aggressive cost mitigation, not inflation. Through extensive negotiations, we secured deep concessions based entirely on our vendors' confidence in our future business volume. For instance, the Specialized Custom Bridge Component Manufacturer fully waived all incurred fees due to our excellent standing and our agreement to provide specialized technical consulting to future general contractors who purchase their products but lack the necessary installation expertise.

From the inception of this project, our team demonstrated complete transparency regarding the budgetary requirements of the original design. When budget constraints arose, we acted in good faith to engineer and present fully functional, cost-effective alternatives. Furthermore, even after mobilization had begun, we remained highly responsive and agile, generating multiple estimations for various ornamental railing configurations to help the City navigate its options.

We advanced this project with the reasonable contractual expectation that the scope would move forward in some capacity. While we have successfully minimized the direct material and vendor damages through rigorous negotiation, the complete cancellation leaves our company to absorb the severe operational fallout of lost capacity and displaced labor. Our total consolidated claim for this project settlement is **\$70,000.00**, representing a highly mitigated cost that protects the City's budget while addressing immediate unrecoverable expenses.

Respectfully submitted,

Taves Contracting Team

Comprehensive Itemized Cost Breakdown

1. Vendor Settlement: Stephens Pipe & Steel (SPS)

The original material order for the project totaled **\$108,408.48**. Because the contract was cancelled after production, the City faced full exposure for custom, unrecoverable materials. We successfully negotiated a flat cancellation fee that saves the City **\$58,408.48**.

- **Custom, Non-Resellable Inventory:** \$53,801.00
 - 2-1/2" x 8'6" BLK VNL Sch40 Domestic Pipe: \$4,481.40
 - 3" x 6'6" BLK VNL Sch40 Domestic Pipe: \$26,285.60
 - 3.5" x 12'6" BLK VNL Sch40 Domestic Pipe: \$23,034.00
- **Standard Restocked Materials:** \$54,557.48 (Returned to vendor stock at no cost to City)
- **SPS Final Negotiated Settlement Cost: \$50,000.00**

2. Subcontractor Settlement: Taves Contracting

Following the official Notice to Proceed (NTP) on May 27th, 2026, labor was mobilized, pre-construction engineering was executed, and compressed timelines were worked to accommodate City deadlines. While direct unrecoverable costs and emergency scheduling fees total over \$27,000, Taves Contracting has agreed to accept a reduced flat settlement of **\$20,000.00**.

Pre-Notice to Proceed & Engineering:

- *Original Estimate & Site Planning:* \$1,800.64 (32 hours @ \$50/hr + 2 site visits totaling 264 miles @ \$0.76/mi)
- *Budget-Driven Re-Design:* \$1,700.32 (32 hours @ \$50/hr + 1 site visit of 132 miles @ \$0.76/mi)

Post-Notice to Proceed & Mobilization (May 27th, 2026):

- *Dedicated Project Labor:* \$15,240.00 (Additional skilled workers hired specifically to meet this project's timeline)
- *Backend Office Prep:* \$800.00 (16 hours @ \$50/hr)

Urgent Scope Changes & Estimation Requests:

- *Welded Wire Fence Pricing:* \$1,000.00
- *Ornamental Railing Direct Estimating:* \$3,000.00 (Includes extended evening and weekend labor to hit strict 1-week deadline for board meeting)

Post-Cancellation Mitigation Costs:

- *Emergency Private Sector Marketing:* \$5,000.00 and counting (Expedited spending to fill sudden 2-3 month autumn schedule gap)
- *Public Sector Bidding Acceleration:* \$2,000.00 and counting (Rapidly bidding alternative municipal jobs to absorb displaced capacity)
- *Opportunity Cost (Displaced Backlog):* \$238,000.00 (Total value of alternative commercial projects passed over to reserve capacity for the City - *Absorbed fully by us*)

• Taves Contracting Final Requested Settlement Cost: \$20,000.00

3. Settlement Summary Table

Category	Actual Value / Cost Incurred	Cost Saved / Absorbed	Final Settlement Claim
SPS Material Order	\$108,408.48	\$58,408.48	\$50,000.00
Taves Contract & Prep	\$27,040.96+	\$7,040.96+	\$20,000.00
Opportunity Cost	\$238,000.00	\$238,000.00	\$0.00
TOTALS	\$373,449.44+	\$303,449.44+	\$70,000.00



P.O. Box 618 / 2224 E Hwy 619
Russell Springs, KY 42642-7928
(270) 866-3331
Sales Fax: (270) 866-4412
Sales Phone: (800) 451-2612

Remit Payment to:
Stephens Pipe & Steel, LLC
P.O. Box 618
Russell Springs, KY 42642

Visit our website:
<https://SPSfence.com>

QUOTATION #: 01-440433 Pg 1 of 1
Billing Date : 3/30/2026
Customer Acct: 55727
Payment Terms: NET-30
Customer PO #:
Sales Person : R.WILKERSON
Made By User : ryanwilkerson
SPS Order # : 0-0
Shipped Via : OT
Contact Name : TREVOR TAVES
Cust Mobile : 3195409542 Trevor
Alt Phone : 3193186131

*** Quote valid 5 days. Expires: 4/4/2026 ***

Sold To: TAVES CONTRACTING SERVICES LLC
201 LIBERTY DR SE
CEDAR RAPIDS, IA 52403-1832

Ship To: TAVES CONTRACTING SERVICES LLC
(319) 318-6131
1650 COMMERCIAL DRIVE UNIT 203
WALFORD, IA 52351-5478

**** Send Invoice by EMAIL ONLY.**

CUSTOMER MUST FIELD VERIFY ALL MATERIALS. SPS IS NOT RESPONSIBLE FOR FINAL QUANTITIES OR TAKEOFFS!

Ordered	Shipped	BackOrder	Unit	Product Item Description	Price	Amount
				** Your signature means you received all ** items accurately. Please verify all items ** at the time of receipt. **		
2850	2850	0	ft	BLK VNL 2B 2x8(9core)x48in KK 50ft/rl	4.0233	11,466.41
800	800	0	ft	BLK VNL 2B 2x8(9core)x120in KK 50ft/rl ** VERIFY SELVAGE	10.06	8,048.00
4410	4410	0	ft	BLK VNL 1-5/8" x 21' x SPSch40-DOM x 210pc	5.5155	24,323.36
60	60	0	pc	BLK VNL 2-1/2" x 8'6" x SPSch40-DOM	74.69	4,481.40
290	290	0	pc	BLK VNL 3" x 6'6" x SPSch40-DOM	90.64	26,285.60
100	100	0	pc	BLK VNL 3-1/2" x 12'6" x SPSch40-DOM	230.34	23,034.00
30	30	0	ea	BLK VNL TENSION BAR 48"x5/8"	4.117	123.51
8	8	0	ea	BLK VNL DOM TENSION BAR 120"x3/16"x3/4"	11.47	91.76
50	50	0	ea	BLK VNL TENSION BAND 3-1/2in	5.1504	257.52
100	100	0	ea	BLK VNL DOM TENSION BAND 3in 14ga x 3/4	1.04	104.00
50	50	0	ea	BLK VNL BRACE BAND 3-1/2in	3.4334	171.67
150	150	0	ea	BLK VNL DOM BRACE BAND 3in 12ga x 3/4	1.5736	236.04
350	350	0	ea	BLK PLY DOM PS LOOP CAP 3x1-5/8in	4.8108	1,683.78
150	150	0	ea	BLK PLY DOM PS RAIL END COMBO 1-5/8in	3.219	482.85
8	8	0	ea	BLK VNL PS DOME CAP 3-1/2in	11.358	90.86
28	28	0	ea	BLK PLY DOM PS DOME CAP 3in	2.9794	83.42
1100	1100	0	ea	BOLT/NUT 3/8x2-1/2in	0.2572	282.92
400	400	0	ea	BLK VNL B&N 5/16x1-1/4in RUSPERT	0.1646	65.84
7000	7000	0	ea	BLK VNL ALUM TIE 9gax9-1/2in	0.2616	1,831.20
1200	1200	0	ea	BLK VNL ALUM TIE 9gax12in	0.305	366.00
30	30	0	ea	BLK VNL TRUSS ROD TIGHTENER	4.3635	130.91
200	200	0	set	BLK VNL BLVD CLAMP 3-1/2x1-5/8in	13.446	2,689.24
200	200	0	ea	BLK PLY DOM SLEEVE 1-5/8in	2.1168	423.36
30	30	0	ea	BLK VNL DOM TRUSS ROD 3/8"x15'	12.215	366.46
350	350	0	set	BLK VNL DOM BLVD CLAMP 3x1-5/8in	3.5382	1,238.37

Accepted By: _____, Date __/__/__ I HAVE REVIEWED
AND DO ACCEPT THIS ORDER AS QUOTED. Use Reference P.O # _____
Instructions:

108,358.48
Fuel Charge 50.00
6.0% Tax 6,501.50

Total Order 114,909.98

Acceptance of quote confirms your approval of materials as quoted.

Review all items. Any discrepancies MUST BE noted on original delivery document and VERIFIED BY DRIVER. Buyer agrees to pay all applicable taxes. Invoices not paid within terms will be charged a 1.5% monthly service charge. If payment made with credit card, a 3% convenience fee will be added. PRICES MAY CHANGE WITHOUT NOTICE! Returns subject to 15-50% Restock Fee.



300 East Locust St. Carter Lake, IA 51510 531-329-4429 r.clausen@palmSHIELDlouver.com

Date:	4/14/2026		
Customer:	Taves Contracting Services	319-414-3499	
Representative:	Lee Ott	tavesestimating@gmail.com	
Project:	City of Marshalltown - Steel Beam Bridge Post Replacement REV. 1		
Project Scope:	Custom Metals Account 6000 & 6001	62) 2" (2.5" OD) schedule 40 steel posts x 48" tall with welded post plates. 124) 1/16" galvanized shims 572) side mount galvanized brackets for 3" OD posts (2 each). 360) side mount galvanized brackets for 3.5" OD posts (4 each). BABA domestic steel. IDOT galvanized (galv. holes not plugged). IDOT black powder coat. Excludes all anchor bolts.	
Elevation:		Unless stated herein, fabrication is estimated to be set on level plane. No changes in elevation.	
Hardware:	Custom Metals Account 6000	Not include. If required, please advise prior to acceptance of proposal.	
Coatings:	Paint Account 4000 & 4999	IDOT black powder	
Media Blasting:	Blasting Account 7001 & 7000	Included	
Galvanizing:	Custom Metals Account 6000	IDOT galvanizing (galv. Holes not plugged)	
Freight:		Unless stated otherwise, product is FOB manufacturer. If included, freight is estimated at time of quote. Actual freight costs will be calculated and applied at time of shipment. Customer is responsible for providing means for unloading materials in a timely manner. Damage must be reported to us and freight provider at time of unloading to file for claim.	\$ 1,000.00
Terms:		This proposal is good for 30 days. 50% down at time of order. Balance due at time of shipment. We impose a surcharge of 3% on all credit cards that is not greater than our cost of acceptance. We require photographs of the installed project within 30 days of receipt of order to enact warranty. No retention to be held or compliance to paid when paid terms.	
Not Included:		If specifically not stated herein, not included. There is no engineering or delegated design. There is no overtime or expedited fabrication unless specifically stated. We do not warranty this system for fit and function to any situation. No Installation. Taxes. Pipe Sleeves. Operators. Mock-Ups. Anchor Bolts. Embeds. Locks or padlocks.	
Lead Time:		Lead times will vary based on date of received approval and subsequent backlog. Please allow a minimum of one week for production drawings and seven weeks for production upon receipt of approved drawings.	
Field Verification:		Project estimated to be constructed per contract drawings. No field verification by Patriot Custom Metals or to be received by others included.	
Fabrication Drawings:		One set of fabrication drawings included. Revisions as the result of design changes, changes in site conditions or contract drawings to be billed hourly.	
Total Price:			\$ 45,651.45

Taves Contracting Services 319-414-3499

Patriot Custom Metals LLC. / PalmSHIELD

(Signature)

(Date)

(Signature)

(Date)

(Printed Name & Title)

(Printed Name & Title)

America's Gate Company For Over 50 Years



**MARSHALLTOWN
MORE THAN EVER**

**Mike Ladehoff, Mayor
Carol Webb, City Administrator
24 North Center Street
Marshalltown, IA 50158
PH 641.754.5701 • FX 641.754.5717**

To: Mayor and City Council
From: Clayton Ender, Assistant Director, Housing & Community Development
Meeting Date: September 14, 2026
Re: Public Hearing and Ordinance 15127 to Amend the Official Zoning Map for 707 E Linn Street and 205 S 8th Avenue - Second Reading

Strategic Plan Objective:

Strategy 1: Expand and improve development in the community.

Recommended:

The Planning and Zoning Commission recommends approval of the rezoning ordinance as drafted, which includes conditions pertaining to prohibited uses.

Budget Impact:

Cost of publication.

Description/Background:

City Staff Contact: Clayton Ender, AICP

Assistant Director of Housing and Community Development

Phone: 641-754-5756

Email: cender@marshalltown-ia.gov

Applicant / Marshalltown Company

Property Owner: POB 738

Marshalltown IA 50158

Recommendation: The Planning and Zoning Commission recommends approval of the rezoning ordinance as drafted, which includes conditions pertaining to prohibited uses.

Current Future Land Use Designation:

Current Comprehensive

Plan Future Land Use Designation, Current adopted comprehensive plan identifies the parcels as Low Density Residential, but the draft comprehensive plan update which will be considered at this same meeting as the first reading of this ordinance identifies the parcel as industrial.

Current Zoning District & Current Usage:

-
Low Density Residential – Current Plan

“Single-family detached and two-family residential development at a density of 4-

6 units per acre.”

Light Industrial – Draft Plan

“Industrial businesses that are cleaner and less intense, with more office and showroom, clean manufacturing or processing, less trucking, warehousing or heavy manufacturing.”

Current: Zoning:

RM, Medium Density Residential Zoning District

Current Usage:

70E Linn Street – Vacant Parcel

205 S 8th Avenue – Vacant Parcel

**Proposed
Comprehensive
Plan Future Land
Use Designation,
Proposed Zoning
District &
Proposed Usage:**

Proposed Zoning:

GI, General Industrial Zoning District With Conditions

Proposed Usage:

Off-street parking facilities

Review Criteria:

In determining whether to approve, approve with conditions, or deny a zone change, the review bodies shall consider the following review criteria:

1. **The request complies with the applicable standards of this Zoning Ordinance, the City Code of Ordinances, and any applicable county, state, or federal requirements.**

The proposed rezoning complies with applicable local, state, and federal laws or administrative rules.

2. **The request substantially conforms to any associated prior approval for the development, including, but not limited to, a special use permit, Master Development Plan, or Site Plan.**

The proposed rezoning does not conflict with past approvals for the subject properties.

3. The administrative body has considered the recommendation of staff.

Staff recommends approval of the comprehensive plan amendment and the rezoning application as outlined in the recommendation section of this staff report.

4. The request is consistent with applicable policies of the Comprehensive Plan and applicable utility plans and capital improvements plans; or, if it addresses a topic that is not contained or not fully developed in the Comprehensive Plan, the request does not impair the implementation of the Comprehensive Plan.

Provided the city also adopts the draft comprehensive plan update the rezoning will be in compliance with the comprehensive plan.

5. The request promotes the purposes of this Zoning Ordinance as established in § 156.A.002, Purposes, and in other applicable purpose statements in this chapter.

§ 156.A.002(C)(1) “Encourage a diverse and stable economy with employment opportunities, particularly those that have meaningful multiplier effects in the local economy, by promoting the vitality and development of commercial and industrial districts”

§ 156.A.002(C)(2) “Enable and encourage entrepreneurship and local business growth”

§ 156.A.002(C)(3) “Enable retention and sensitive expansion of local businesses.”

6. Adequate facilities, including public or private utilities, solid waste service, roads, drainage, and other improvements are present or are planned to be provided.

The subject property has adequate access to existing public streets, water, sanitary sewer, storm sewer and other utilities.

- 7. The request demonstrates compatibility with surrounding conforming and permitted land uses and structures and with the general character of the area.**

Proposed parking facility construction and expansion will be required to comply with applicable design standards of the zoning code. Furthermore, the proposed conditions on the rezoning to prohibit certain land uses will support compatibility with existing adjacent residential land uses.

- 8. The dimensions of the subject property to accommodate reasonable development that complies with the requirements of this ZO, including parking, open space, and buffering requirements.**

The subject properties are of sufficient size and dimension to allow for construction of the proposed improvements along with applicable buffering standards.

- 9. The pace of development and the amount of vacant land currently zoned for comparable development in the vicinity of the subject property.**

The Marshalltown Company main campus is within an established neighborhood with limited vacant land for expansion. The company is in the process of several facility expansions which will utilize existing vacant land. Due to the limited vacant land being used for facility expansion the property owner has had to look towards acquisition of parcels in the vicinity to accommodate off-street parking requirements. This will require rezoning to be compliant with the zoning ordinance.

- 10. A comparison of the hardship to the applicant with the relative gain to the public health, safety, and welfare.**

The proposed development will support economic growth with the community.

11. **The proposed zone change is consistent with the Comprehensive Plan or Future Land Use Map and increase the likelihood of advancing the goals, objectives, and policies of the Comprehensive Plan Land Use Map, or another adopted area plan, including but not limited to redevelopment plans.**

See review criteria #4 regarding future land use map.

Land use General Goal 1: Maximize the potential of the community of Marshalltown as a thriving center for business and healthy recreation, while maintaining and enhancing its livability as a residential community.

Land use industrial Goal 1: Retain and expand Marshalltown's industrial land uses to ensure a diverse tax base and local employment opportunities.

The proposed rezoning will work to advance the goals of the comprehensive plan, including those called out above, by supporting the expansion of an existing industrial business, Marshalltown Company. This expansion will increase the local tax base and support local employment opportunities.

12. **The range of uses allowed by the proposed zoning district will be compatible with the properties in the immediate vicinity of the subject property.**

Staff is recommending that this rezoning be subject to conditions

restricting land usage beyond the standard land use restrictions. The purpose for the restrictions would be to support compatibility of permitted land uses within the rezoned area with those of the existing adjacent residential uses and residential zoned areas.

The complete list of prohibited uses is included within the draft ordinance. The property owners will need to agree to these conditions in writing prior to close of a public hearing at city council.

13. The suitability of the subject property for the zoned purposes.

The applicant has provided a site development concept drawing showing how the subject properties are intended to be used for off-street parking facilities. Initial staff review indicates that the subject properties are suitable for the intended development.

14. The character of the surrounding area is transitioning or being affected by other factors, such as traffic, a new school, adjoining uses, or environmental issues.

Generally, to the south and west of the proposed rezoning area the surrounding area is composed of an established residential neighborhood. East of S 8th Avenue is presently used for industrial development, mainly Marshalltown Company's main campus.

15. Nearby property owners are in support of, or do not oppose, the proposed map amendment.

Notice of the proposed rezoning, including meeting dates and times, has been mailed to all property owners within 250 feet of the rezoning boundary + width of any intersecting street. Signs have also been posted advertising the rezoning.

As of publication of this staff memo no public comments have been

received.

Attachments:

1. Ordinance 15127
2. Aerial Vicinity Map

ORDINANCE 15127

AN ORDINANCE TO AMEND THE OFFICIAL ZONING MAP FOR 707 E LINN STREET AND 205 S 8TH AVENUE FROM MEDIUM DENSITY RESIDENTIAL ZONING DISTRICT TO GENERAL INDUSTRIAL ZONING DISTRICT

WHEREAS, the owner of record for 707 E Linn Street and 205 S 8th Avenue has petitioned to have their properties rezoned from RM, Medium Density Residential Zoning District to GI, General Industrial Zoning District; and,

WHEREAS, certain conditions further restricting land uses within the rezoning area are justified to ensure compatibility of development with existing adjacent residential development; and,

WHEREAS, the owner of the subject properties within the area of the official zoning map amendment have agreed to the conditions of the official zoning map amendment in writing; and,

WHEREAS, the Planning and Zoning Commission has reviewed this petition at their regular meeting on August 13, 2026 and following a public hearing has made a recommendation to approve the official zoning map amendment petition; and,

NOW THEREFORE BE IT ORDAINED BY THE COUNCIL OF THE CITY OF MARSHALLTOWN, IOWA:

Section 1. Official Zoning Map Amendment. The following legally described property is hereby rezoned from RM, Medium Density Residential Zoning District to GI, General Industrial Zoning District:

Lot Three in Block Two of Binford & Webster's Addition to the Town of Marshall, Marshall County, Iowa

AND

Lot One, except the North Ninety feet thereof, in Block Two in Binford & Webster's Addition to the Town of Marshall, Marshall County, Iowa

AND

To the centerline of adjacent public right-of-way

Section 2. Conditions. The official zoning map amendment outlined in Section No. One of this ordinance shall be subject to the following conditions:

A. Prohibited Land Uses. The following land uses shall be prohibited:

1. All Group Living Uses

2. Airport or Heliport Uses
3. Correctional Facility Uses
4. Solar Panel Array Uses (Principal Use)
5. Ground Mounted Solar Panel Array Uses (Accessory Use)
6. Adult Entertainment Business Uses
7. All Heavy Industrial Uses
8. All Waste-Related Service Uses, Excluding Recycling Facility Uses

Section 3. Severability Clause. If any section, provision, or part of this ordinance shall be adjudged invalid or unconstitutional, such adjudication shall not affect the validity of the ordinance as a whole or any section, provision or part thereof not adjudged invalid or unconstitutional.

Section 4. When Effective. This ordinance shall be in full force and effect after its final passage, approval and publication as provided by law.

Passed this _____ day of _____ 2026 and signed this _____ day of _____ 2026.

Signatures on following pages.

CITY OF MARSHALLTOWN, IOWA

Mike Ladehoff, Mayor

ATTEST:

Alicia Hunter, City Clerk

I, Alicia Hunter, City Clerk of the City of Marshalltown, Iowa, do hereby certify that the foregoing ORDINANCE was passed and approved by the City Council of the City of Marshalltown, Iowa, on the ____ day of _____ 2026, and was published in the Marshalltown Times-Republican, a newspaper of general circulation in the City of Marshalltown, Iowa, on the ____ day of _____ 2026.

Alicia Hunter, City Clerk

MARSHALLTOWN COMPANY

Joe Mathern

SIGNATURE

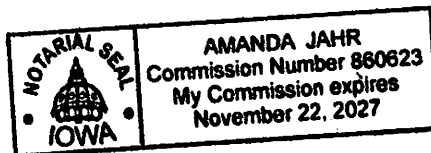
Joe Mathern Corporate Facilities Director

PRINT NAME AND TITLE

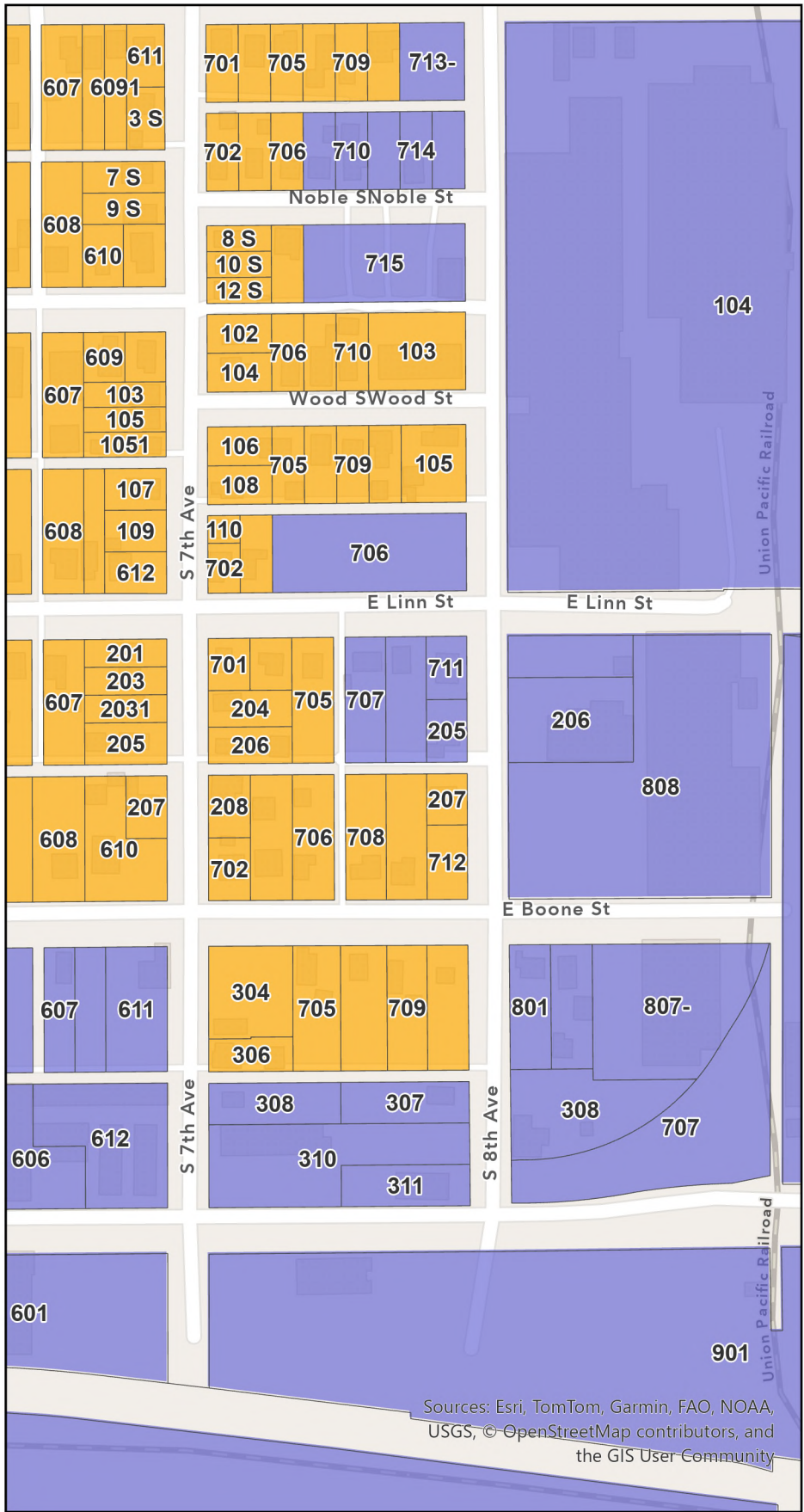
On this 17 day of August, 2026 before me, the undersigned, a notary in public in and for the State of Iowa, personally appeared Joe Mathern, to me known to be the identical person(s) named in the foregoing instrument and who executed the same as his/her/their/ voluntary act and deed.

Amanda Jahr

Notary Public in and for the State of Iowa



Marshalltown Zoning



Legend

- City Limits
- Parcels

Zoning Districts

- Agricultural (AG)
- Rural Residential (RR)
- Low-Density Residential (RL)
- Medium-Density Residential (RM)
- High-Density Residential (RH)
- Mixed-Use (MU)
- Urban Core (UC)
- General Commercial (GC)
- General Industrial (GI)
- Planned Unit Development (PUD)
- Public and Institutional (PI)
- Recreation (REC)
- City Limits
- Parcels



0 95 190 380
US Feet



Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Aerial Vicinity Map





**MARSHALLTOWN
MORE THAN EVER**

**Mike Ladehoff, Mayor
Carol Webb, City Administrator
24 North Center Street
Marshalltown, IA 50158
PH 641.754.5701 • FX 641.754.5717**

To: Mayor and City Council
From: Carol Webb, City Administrator, Gary Thompson, Councilor
Meeting Date: September 14, 2026
Re: Ordinance 15128 Amending the Code of Ordinances of the City of Marshalltown, Iowa, by Repealing and Replacing Section 50.027(B) Collection Vehicles - Second Reading

Strategic Plan Objective:

N/A

Recommended:

Councilor Thompson requested this ordinance change.

Budget Impact:

No direct City fiscal impact has been identified. Any additional inspection or enforcement activity is expected to be incidental and handled within existing resources unless experience under the amended standard indicates otherwise.

Description/Background:

Issue

Whether to amend City Code Section 50.027(B) to allow licensed garbage and refuse haulers to use pickup trucks or other non-compacting vehicles for scheduled routine collection while requiring each licensee to use at least one packer-type truck and comply with the City's existing vehicle sanitation and containment requirements.

Background

Area Sanitation's current Garbage and Refuse License expires September 30, 2026. The license includes a special-use provision allowing non-compacting vehicles to be used in conjunction with compacting vehicles while the City evaluated possible changes to its solid waste collection system.

The City Council concluded that broader system discussion on April 27, 2026, and determined that no changes would be made to the current collection system. On June 5, 2026, staff

prepared notice to Area Sanitation that the special-use provision would not continue with the license renewal effective October 1, 2026.

Councilor Gary Thompson subsequently requested an ordinance amendment that would allow Area Sanitation to continue using pickup trucks for garbage collection. Because Section 50.027 applies to all licensed haulers, the proposed amendment would apply uniformly to every licensee rather than only to Area Sanitation.

Current Code

Section 50.027(B) currently requires licensed haulers to use packer-type trucks for scheduled routine garbage or refuse collection and requires the packing or compressing device to be operated during collection and disposal. Other safeguards in Section 50.027 would remain unchanged. Subsection (A) requires every collection vehicle to be sanitary and safe, constructed to prevent leakage in transit, and wholly enclosed and covered; it also authorizes City inspection. Subsection (D) makes the responsible hauler liable for refuse lost in the City and, when applicable, for the City's cleanup costs.

Proposed Ordinance

The attached draft would repeal and replace subsection (B) to require each licensee to use at least one packer-type truck in its scheduled routine collection operations; expressly allow non-compacting vehicles, including pickup trucks; require those vehicles to satisfy subsection (A); clarify when a packer truck's mechanical device must be operated; and retain the periodic washing requirement.

Policy Considerations

- Operational flexibility. Pickup trucks may be useful for smaller routes, limited-access locations, or lower-volume collections and may reduce equipment burden for a smaller hauler.
- Public health, litter, and appearance. Non-compacting vehicles have different capacity and containment considerations; the existing enclosure, cover, leakage-prevention, inspection, and cleanup provisions would continue to apply.
- Administration. The draft gives staff an explicit pickup-truck standard, but compliance would still depend on each vehicle's configuration, condition, loading, and use.
- Uniform application. The same vehicle options would be available to all current and future licensees.

Attachments:

1. Ordinance Amending 50.027 Collection Vehicles

AN ORDINANCE AMENDING THE CODE OF ORDINANCES OF THE CITY OF MARSHALLTOWN, IOWA, BY REPEALING AND REPLACING SECTION 50.027(B), COLLECTION VEHICLES

WHEREAS, Section 50.027(B) currently requires licensed garbage and refuse haulers to use packer-type trucks for scheduled routine collection; and

WHEREAS, the City Council desires to allow licensed haulers to use non-compacting vehicles, including pickup trucks, for scheduled routine collection while retaining packer-truck capacity and the City's existing sanitation, containment, inspection, and cleanup requirements.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF MARSHALLTOWN, IOWA:

Section 1. Section 50.027(B) of the Code of Ordinances of the City of Marshalltown, Iowa, is hereby repealed and replaced to read as follows:

(B) All persons licensed under the terms of this chapter shall use at least one packer-type trucks as part of their scheduled routine garbage or refuse collection operations. A licensee may also use non-compacting vehicles, including pickup trucks, for scheduled routine garbage or refuse collection, provided that each vehicle complies with subsection (A) of this section. Each packer-type truck shall include a mechanical device for packing or compressing garbage or refuse. The mechanical device shall be used and operated whenever the packer-type truck is used in the collection or disposal of garbage or refuse and shall be kept in good working order. All truck bodies used for the collection or disposal of garbage or refuse shall be washed out periodically to minimize odors.

Section 2. Repealer. All ordinances or parts of ordinances in conflict with the provisions of this Ordinance are hereby repealed.

Section 3. Severability. If any section, provision, or part of this Ordinance is adjudged invalid or unconstitutional, such adjudication shall not affect the validity of this Ordinance as a whole or any section, provision, or part not adjudged invalid or unconstitutional.

Section 4. When Effective. This Ordinance shall be in full force and effect after its final passage, approval, and publication as provided by law.

Passed this ____ day of _____, 2026, and signed this ____ day of _____, 2026.

CITY OF MARSHALLTOWN, IOWA

Mike Ladehoff, Mayor

ATTEST:

Alicia Hunter, CMC, City Clerk

I, Alicia Hunter, City Clerk of the City of Marshalltown, Iowa, do hereby certify that the foregoing Ordinance was passed and approved by the City Council of the City of Marshalltown, Iowa, on the ____ day of _____, 2026, and was published in the Marshalltown Times-Republican, a newspaper of general circulation in the City of Marshalltown, Iowa, on the ____ day of _____, 2026.

Alicia Hunter, CMC, City Clerk



**MARSHALLTOWN
MORE THAN EVER**

**Mike Ladehoff, Mayor
Carol Webb, City Administrator
24 North Center Street
Marshalltown, IA 50158
PH 641.754.5701 • FX 641.754.5717**

To: Mayor and City Council
From: Heather Thomas, Public Works Director
Meeting Date: September 14, 2026
Re: Marshall Gun Club Lease

Strategic Plan Objective:

During the 2026-2028 Goal Setting Report, Strategy 4 noted partnering with citizens, for-profit, non-profit, and others to improve quality of life

Recommended:

Review request from Marshall Gun Club regarding a request for less than fair market rent for their lease of 7.42 acres of city-owned property near the Marshalltown Municipal Airport.

Budget Impact:

Lease payments are deposited into the General Fund.

Description/Background:

The City of Marshalltown currently leases property to the Marshall Gun Club near the Marshalltown Municipal Airport. The current lease, attached, was approved in August of 2017 for a period of three years, with two-year automatic renewals. The lease rate was established in the amount of \$75/acre for 7.42 acres of property [\$556.50/year].

Marshalltown City Council adopted a new lease policy in 2025, attached. City staff are in the process of updating the lease with Marshall Gun Club to align with the new policy. During discussions with Marshall Gun Club, there was a request by the Club to hold the lease rate the same as existing, which falls below fair market rate. In accordance the policy, fair market rent shall be paid unless and to the extent a public benefit offset can be clearly demonstrated.

The leased ground is adjacent to city-owned agricultural leased property with a current flex rental arrangement of \$235 - \$310 / acre annually. [Base rent of \$235/acre with flex lease of 40% soybean yield / 35% corn yield to a flex cap of \$75/acre additional.] For the determination of fair market rent, city staff feel \$235/acre would be considered fair market rent.

Allen Huseboe will be present to discuss the public benefit he feels the Marshall Gun Club provides.

- Most notable is their Central Iowa Straight Shooters Program with 45-55 area youth that compete in local and state Scholastic Clay Target Program (SCTP) events. This program runs from April through June and is open to students in area schools, including East Marshall, West Marshall, Marshalltown, and BCLUW, with a very low financial burden/entry point. The youth program hosts 2 tournaments annually at the facility with approximately 250 kids participating.
- In addition to youth programming, the facility, which operates annually from April through September, opens to area employers to utilize for team building, employee engagement, and hosts registered shoots drawing visitors to our community.

Allen also has a wealth of historical knowledge regarding how the current lease payment came to be and past discussions with the city regarding proximity to the airfield, required land maintenance for maximum vegetation height, past facility impact to agricultural production, and mining lead deposits from the fall zone.

Following council direction on lease rate, city staff will continue to work with Marshall Gun Club to prepare a new lease in accordance with City Policy.

Attachments:

1. 08-14-2017_2017-163_Signed Res and Lease _ Marshall Gun Club Airport
2. 2025-06-09_2025-116_Marshalltown_Lease_Policy_FINAL

2017-163

RESOLUTION APPROVING AGREEMENT WITH THE MARSHALL GUN CLUB, INC.,
RELATING TO LEASE OF REAL ESTATE NEAR THE MARSHALLTOWN AIRPORT, FOR
A PERIOD OF THREE YEARS,
IN THE AMOUNT OF \$75.00 PER ACRE.

WHEREAS the Council previously approved a lease on January 26, 1981, for lease of real estate;
and

WHEREAS the Council has fully examined and found the agreement is in the best interest of
the city of Marshalltown, Iowa, and that the agreement should be approved and accepted.

THEREFORE, IT IS HEREBY RESOLVED BY THE COUNCIL OF THE CITY OF
MARSHALLTOWN, IOWA AS FOLLOWS:

Section 1. The agreement with the Marshall Gun Club, Inc., providing for lease of real estate in
airport and is hereby fully approved in all respects and particulars and the Mayor and City Clerk
are hereby authorized and directed to execute same.

Section 2. The Mayor and City Clerk are hereby authorized and directed to execute said
Agreement on behalf of the City of Marshalltown.

Passed on this 14 day of August, 2017, and signed on this 16 day of August, 2017.

CITY OF MARSHALLTOWN, IOWA

James L. Lowrance
James L. Lowrance, Mayor

ATTEST:

Shari L. Coughenour
Shari L. Coughenour, CMC, City Clerk

8-14-17
2017-163

**Non-Production Land Lease Between the City of
Marshalltown, Iowa, and The Marshall Gun Club, Inc.**

THIS LEASE AGREEMENT is made between: The City of Marshalltown (hereinafter called Lessor), and Marshall Gun Club, a/k/a The Marshall Gun Club, Inc. (hereinafter called Lessee).

The parties agree as follows:

Section 1: In consideration of annual rent of \$75 per acre, per year (the total annual rent is \$556.50) payable in one installment due on July 1 during each year this lease is in effect, Lessor rents to Lessee the land shown in the attached aerial photo, consisting of approximately 7.42 acres, located off of Reed Avenue and Southwest of the Marshalltown Municipal Airport. If Lessee's use of the property is disallowed as a result of airport usage by the Lessor, rental shall be prorated for that period of time in which use is denied.

Section 2: The term of this lease shall begin on July 1, 2017, and shall end on June 30, 2020. Lessee shall notify Lessor at least one month prior to lease expiration if the Lessee desires to enter into a new Lease Agreement, Lessee agrees that any new Lease Agreement may provide for additional rent and additional terms.

07/01/2020- 06/30/2022	If neither party wishes to enter into a new Lease Agreement this lease shall continue for automatic renewals of two years until such time as one party shall give the other party notice in writing of the termination of the Lease on the desire to enter into a new Lease. Any such notice shall provide that the party giving notice intends to terminate the Lease Agreement at the end of the current Lease period.
07/01/2022- 06/30/2024	
07/01/2024- 06/30/2026	

Section 3: Lessee agrees to use the leased premises to provide a zone for shot from shotgun shells to fall, and Lessee shall not allow shot to fall beyond the leased premises.

Section 4: Lessee agrees that this lease is subject to any and all existing and future, statutes, ordinances, rules, regulations and grant agreements promulgated by Lessor, the City of Marshalltown, the Federal Aviation Administration or any other authority with jurisdiction over the airport.

Section 5: Lessee shall not sell, assign, transfer or convey its interest in this lease without the written consent of the Lessor.

Section 6: Lessee accepts the land in its "as is" condition; further, Lessee accepts the disclaimer of Lessor as to any warranty, either express or implied, as to the condition of the land; Lessee shall not make any additions or modifications to the property without Lessor's written permission.

Section 7: Lessee shall keep the land in good condition. Lessee shall furnish any equipment necessary to maintain the land. All mowing is the responsibility of the Lessee and grass must be kept below a maximum of 12 inches in height. No ground cover other than grass shall be allowed. Lessee shall not be allowed to use the land for any production.

Section 8: Lessee assumes all responsibility for the removal of lead deposits on the land. Removal of deposited shot shall be the responsibility of the Lessee. Removal of lead deposits shall be accomplished at least once every three years, and shall be completed at the termination of this Lease.

Section 9: Lessee agrees to indemnify, defend and hold Lessor, its officers, agents and employees harmless against any and all liability or loss resulting from claims arising directly or indirectly out of the acts of Lessee and/or Lessee's guests. This indemnification specifically includes the payment of reasonable attorney fees and costs incurred by Lessor in defending any such claims. Lessee shall maintain liability insurance with Lessor as named insured in an amount not less than \$1,000,000.00.

Section 10: Lessee acknowledges receipt of a copy of this lease. Lessee agrees that it shall be bound by any and all Rules and Regulations promulgated by the City of Marshalltown Iowa during the term of this Lease.

Section 11: Upon the termination or expiration of this Lease, Lessee shall surrender the leased premises to Lessor in as good a condition as when said premises were received by Lessee, reasonable use and wear expected. Lessee shall repair any damage to the premises occasioned by its use or by removal of Lessee's fixtures, furnishing or equipment. If Lessee fails to make such repairs, Lessor shall make such repairs as are necessary and the cost thereof shall be paid by Lessee.

Section 12: If Lessee fails to pay the rent due hereunder in a timely manner or is in default of any term under this Lease, Lessor may provide Lessee written notice of the default and Lessee shall have 30 days within which to cure the default. If either party should commence an action for a breach or default of any terms in this Lease, the Court may award attorney fees to the successful party.

Section 13: Either party may terminate this Lease Agreement upon 30 days written notice.

Each party to this Agreement has caused same to be executed at Marshalltown, Iowa, on the 14 day of August, 2017.

City of Marshalltown, Iowa

by James L. Lawrence
Mayor.

Marshall Gun Club

by Alan Huseboe
Alan Huseboe, President

Attest:

Shari L. Conkense
City Clerk

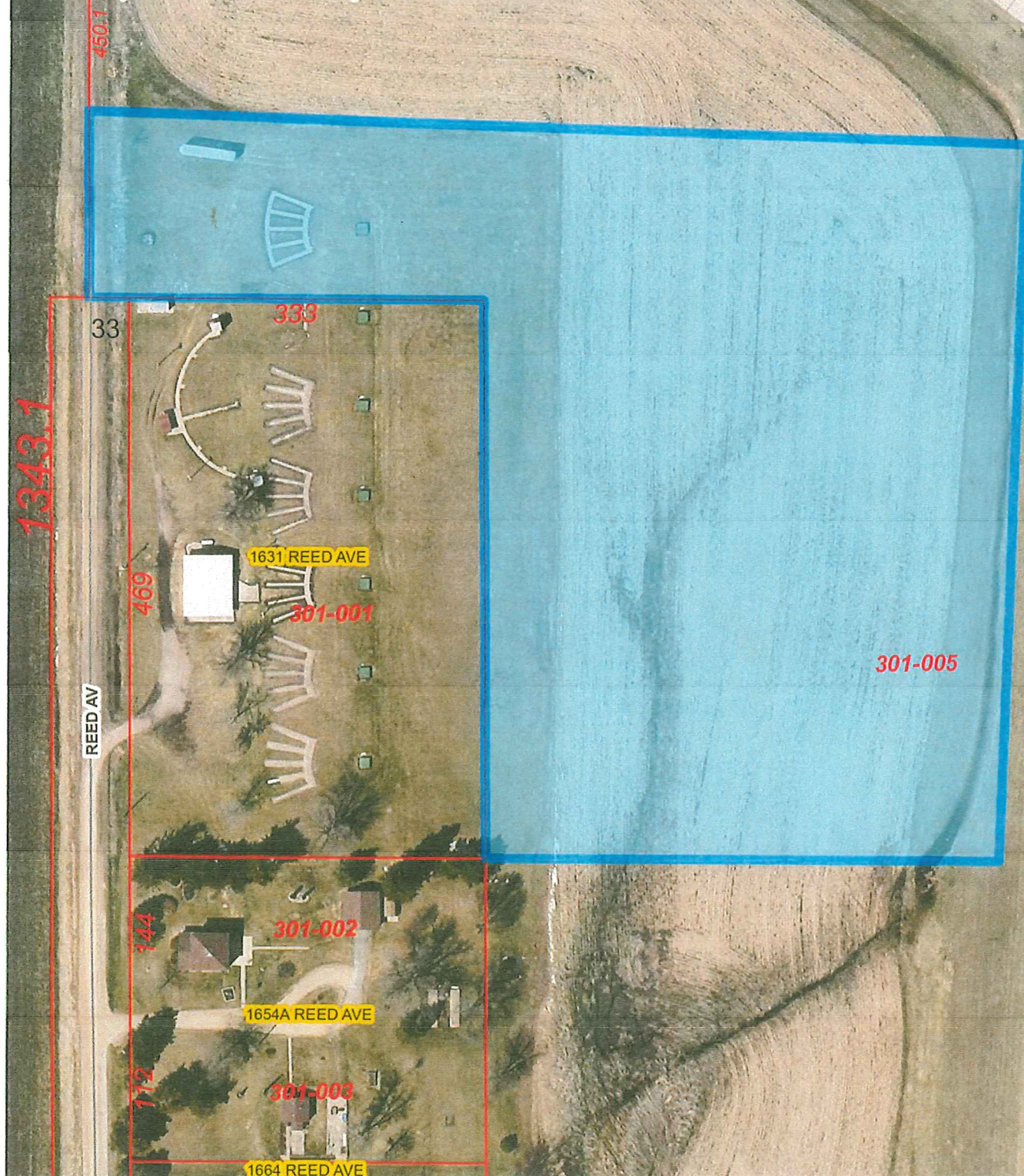
Leased land from City of Marshalltown
Iowa to Marshall Gun Club, Inc.

Drawn: April 3rd, 2017

323,214.67 SF; 7.42 Acres



1 inch = 120 feet



Lease Agreement Policy

Purpose

The purpose of this policy is to provide consistent criteria for evaluating, establishing, and renewing lease agreements between the City of Marshalltown and external parties. This ensures that all lease terms are in the public interest, legally compliant, and financially responsible.

Governing Law

In accordance with Iowa Code §364.7, a city may not dispose of real property—including by lease for a term exceeding three years—without following the public hearing and resolution process. The law further prohibits disposal of real property by gift, except to another governmental body for a public purpose. This has been interpreted to include leasing property for less than fair market value.

Applicability

This policy applies to all leases of City-owned real property or improvements (such as bare land, buildings, or storage spaces) to third-party tenants, including non-profits, community organizations, clubs, and private parties.

General Policy and Criteria

When evaluating lease proposals or renewals, the following criteria shall be considered:

Public Benefit

The City may apply a public benefit offset, in its discretion, under circumstances where the lessee commits to providing services or benefits to the public aligned with City goals and objectives, including the provision of recreational or education opportunities, economic advancement, and/or public safety that compliment or supplement city-provided services or opportunities. A public benefit offset acknowledges the value of these public benefits as consideration for the lease of City-owned property. The allowance and extent of any public benefit offset shall be determined by the City in its discretion considering all relevant factors including but not limited to the following: the number of residents benefitted, associated costs to residents, economic benefit, exclusivity of use, avoidance of maintenance expense, and the degree to which the public benefit provided relieves the City from providing similar benefits at public expense.

Fair Market Rent

The City shall seek rental payments that approximate fair market value unless or to the extent a public benefit offset can be clearly demonstrated.

Lease Term Limits

Standard leases shall not exceed 3 years. Leases up to 10 or 20 years may be considered with justification. All leases over three years require a public hearing and City Council approval.

Exclusive vs. Shared Use

Exclusive use must be justified by need, risk, or public service outcomes.

Liability and Insurance

All lessees must maintain the minimum insurance requirements per City Ordinance §10.009, naming the City as an additional insured. High-risk activities may require higher coverage to be determined on a case-by-case basis.

Lease Agreement Elements

All lease agreements shall include the following:

- Legal description of the premises
- Lease term and renewal conditions
- Rental rate and payment terms
- Maintenance and utility responsibilities
- Indemnity and insurance provisions
- Termination and default clauses
- Use restrictions and compliance with laws
- Public purpose or service justification (if reduced rent is proposed)

Lease Renewal or Amendment

Leases may be renewed if the lessee has maintained good standing and the rental rate has been reviewed for alignment with fair market value and/or demonstration of a sufficient public benefit. Amendments must follow the same review process.

MARSHALLTOWN

I O W A

Mike Ladehoff, Mayor
Carol Webb, City Administrator
Alicia Hunter, City Clerk
24 North Center Street
Marshalltown, IA 50158-4911
Tel - (641) 754-5701

TO: Mayor and City Council
FROM: Heather Thomas, Public Works Director
Cole S. O'Donnell, Finance Director
DATE: September 14, 2026
RE: Discussion – Street Improvement Program – Pavement Management Presentation & Recommendations from Street Steering Committee

Strategic Plan Objective: The 2026-2028 Goal Setting Report included Strategy 3: Continually improve and sustain the City's infrastructure, organization, and services with a Year One goal of "Create Street/Road Improvement Plan"

Recommendation: Provide city staff direction on a five-year funding commitment for the development of a five-year Street Improvement Program and begin identifying/planning for 2027 construction season projects.

Budget Impact: Dependent on Council Direction

Description/Background: City staff are in the process of creating a 5-Year Street Improvement Program. To aid in data analysis and informed decision-making, the city has worked with HR Green on a Pavement Management Study to help analyze various budget-based scenarios. The city's street steering committee has been working in parallel to help guide direction on the various inputs needed for the Pavement Management Study.

At tonight's city council meeting, we will be presenting background and modeling scenarios, providing a recommendation from the street steering committee to establish a \$35M Street Improvement Program for the next five years, and receiving input from the city's finance director on possible funding of such a program. The Finance Director has attached to this memo some additional information on a funding option.

The presentation slides are included in the Council agenda packet.

CITY COUNCIL

Sue Cahill, Melisa Fonseca, Mark Mitchell, Greg Nichols,
Jeff Schneider, Gary Thompson, Marco A. Yopez-Gomez





**MARSHALLTOWN
MORE THAN EVER**

TO: Mayor and Council

CC: Carol Webb
Heather Thomas

FROM: Cole S. O'Donnell

DATE: September 10, 2026

RE: Street Bonding Projections

Attached as part of the packet is a spreadsheet estimating the impact of annually bonding for \$10 million. Of the annual proceeds, \$7 million is to be committed to annual street improvement projects (SIP). The remaining \$3 million is for all other bonding needs, including certain street infrastructure projects not part of the SIP.

The estimates were completed with the following parameters:

- All future debt issued is calculated with a 3.9% interest rate based on current rates other communities are receiving for debt issuance.
- The transfer from local option sales tax (LOST) is based on the FY 27 budget with a 1.1% annual increase. As LOST revenues have not had a steady increase over several years, the projection may be liberal. However, with new retail box stores opening, the projection could very well be achieved.
- Taxable valuations are projected with a 1.5% annual increase. FY 28 does not factor any losses from the property tax reform. Those loss will decrease the taxable valuations and increase the debt service levy necessary to meet obligations.
- The 100% valuations, necessary to calculate our debt limit, are calculated at a 3% annual increase.

Borrowing on this level significantly increases the projected debt service levy. For FY 28, the increase will 46.31% over FY 27. The percent change then ranges from -3.3% in FY 31 to 27.13% in FY 29. It should be noted that a \$10 million issuance is planned for FY 28 for two years of projects.

The annual debt limit is not significantly affected by the borrowing. An internal limit of 70% of the constitutional limit has been adopted and the projected percent of limit only slightly exceeds 50% in FY 32.

Cole S. O'Donnell
Director of Finance
24 N Center St
Marshalltown, IA 50158
codonnell@marshalltown-ia.gov
O: (641)-754-5791 F: (641)754-5717

The Debt Policy from 2021 has the following sections that must be considered in this discussion:

2. Debt shall be managed in such a way that the City's debt service property tax levy shall be maintained at a fairly consistent level, avoiding wide movement either up or down.

5. Furthermore, the Council has elected to control the tax rate relating to debt service retirement to an amount not to exceed \$5.00 per 1,000 dollars of valuation.

Section 2 of the policy will not be adhered to, though Council could justify the changes due to public need. Section 5 will be met through FY 32, but exceeded in FY 33 should any bonding continue beyond FY 32, which is likely.

Issue	Outstanding 6/30/2026	Principle FY 27	Outstanding 6/30/2027	Principle FY 28	Interest FY 28	Outstanding 6/30/2028	Principle FY 29	Interest FY 29	Outstanding 6/30/2029	Principle FY 30	Interest FY 30	Outstanding 6/30/2030	Principle FY 31	Interest FY 30	Outstanding 6/30/2031	Principle FY 32	Interest FY 32
2016A	\$ 1,105,000	\$ 175,000	\$ 930,000	\$ 220,000	\$ 18,600	\$ 710,000	\$ 230,000	\$ 14,200	\$ 480,000	\$ 235,000	\$ 9,600	\$ 245,000	\$ 245,000	\$ 4,900	\$ -		
2016B	\$ 1,480,000	\$ 485,000	\$ 995,000	\$ 495,000	\$ 19,900	\$ 500,000	\$ 500,000	\$ 10,000	\$ -			\$ -			\$ -		
2017	\$ 9,500,000	\$ 360,000	\$ 9,140,000	\$ 375,000	\$ 274,200	\$ 8,765,000	\$ 390,000	\$ 262,475	\$ 8,375,000	\$ 915,000	\$ 251,250	\$ 7,460,000	\$ 950,000	\$ 223,800	\$ 6,510,000	\$ 990,000	\$ 195,300
2018	\$ 1,205,000	\$ 385,000	\$ 820,000	\$ 400,000	\$ 24,600	\$ 420,000	\$ 420,000	\$ 12,600	\$ -			\$ -			\$ -		
2019	\$ 2,495,000	\$ 650,000	\$ 1,845,000	\$ 650,000	\$ 36,900	\$ 1,195,000	\$ 600,000	\$ 23,900	\$ 595,000	\$ 595,000	\$ 11,900	\$ -			\$ -		
2020A	\$ 4,370,000	\$ 1,305,000	\$ 3,065,000	\$ 310,000	\$ 20,000	\$ 2,755,000	\$ 420,000	\$ 16,900	\$ 2,335,000	\$ 415,000	\$ 12,700	\$ 1,920,000	\$ 425,000	\$ 8,550	\$ 1,495,000	\$ 430,000	\$ 4,300
2020B	\$ 1,395,000	\$ 220,000	\$ 1,175,000	\$ 225,000	\$ 13,675	\$ 950,000	\$ 230,000	\$ 11,425	\$ 720,000	\$ 235,000	\$ 9,010	\$ 485,000	\$ 240,000	\$ 6,308	\$ 245,000	\$ 245,000	\$ 3,308
2021	\$ 6,400,000	\$ 740,000	\$ 5,660,000	\$ 755,000	\$ 113,200	\$ 4,905,000	\$ 775,000	\$ 98,100	\$ 4,130,000	\$ 795,000	\$ 82,600	\$ 3,335,000	\$ 810,000	\$ 66,700	\$ 2,525,000	\$ 825,000	\$ 50,500
2022A	\$ 8,520,000	\$ 440,000	\$ 8,080,000	\$ 460,000	\$ 326,760	\$ 7,620,000	\$ 635,000	\$ 308,360	\$ 6,985,000	\$ 660,000	\$ 282,960	\$ 6,325,000	\$ 685,000	\$ 256,560	\$ 5,640,000	\$ 710,000	\$ 229,160
2020B	\$ 265,000	\$ 130,000	\$ 135,000	\$ 135,000	\$ 6,480	\$ -			\$ -			\$ -			\$ -		
2023	\$ 9,105,000	\$ 515,000	\$ 8,590,000	\$ 540,000	\$ 347,013	\$ 8,050,000	\$ 565,000	\$ 325,413	\$ 7,485,000	\$ 959,000	\$ 302,813	\$ 6,526,000	\$ 625,000	\$ 279,013	\$ 5,901,000	\$ 655,000	\$ 254,013
2027			\$ 10,000,000	\$ 503,133	\$ 390,000	\$ 9,496,867	\$ 522,756	\$ 370,378	\$ 8,974,111	\$ 543,143	\$ 349,990	\$ 8,430,968	\$ 564,326	\$ 328,808	\$ 7,866,642	\$ 586,334	\$ 306,799
2028			\$ -			\$ 10,000,000	\$ 503,133	\$ 390,000	\$ 9,496,867	\$ 522,756	\$ 370,378	\$ 8,974,111	\$ 543,143	\$ 349,990	\$ 8,430,968	\$ 564,326	\$ 328,808
2029			\$ -			\$ -			\$ 10,000,000	\$ 503,133	\$ 390,000	\$ 9,496,867	\$ 522,756	\$ 370,378	\$ 8,974,111	\$ 543,143	\$ 349,990
2030			\$ -			\$ -			\$ -			\$ 10,000,000	\$ 503,133	\$ 390,000	\$ 9,496,867	\$ 522,756	\$ 370,378
2031			\$ -			\$ -			\$ -			\$ -			\$ 10,000,000	\$ 503,133	\$ 390,000
2032																	
2033																	
2034																	
2035																	
Total	\$ 45,840,000		\$ 50,435,000	\$ 5,068,133	\$ 1,591,328	\$ 55,366,867	\$ 5,790,889	\$ 1,843,751	\$ 59,575,978	\$ 6,378,032	\$ 2,073,201	\$ 63,197,946	\$ 6,113,358	\$ 2,285,007	\$ 67,084,588	\$ 6,574,692	\$ 2,482,556
LOST Transfer			\$ 3,431,250			\$ 3,468,994			\$ 3,507,153			\$ 3,545,731			\$ 3,584,734		
DS Required			\$ 3,228,211			\$ 4,165,646			\$ 4,944,080			\$ 4,852,633			\$ 5,472,513		
Debt Levy	\$ 2.10955	\$ 3.08551	46.26%			\$ 3.92267	27.13%		\$ 4.58690	16.93%		\$ 4.43552	-3.30%		\$ 4.92820	11.11%	
Taxable Valuation	\$ 1,030,785,962	1.50%	\$ 1,046,247,751			\$ 1,061,941,468			\$ 1,077,870,590			\$ 1,094,038,649			\$ 1,110,449,228		
100% Valuation	\$ 2,370,531,789	3.00%	\$ 2,441,647,743			\$ 2,514,897,175			\$ 2,540,046,147			\$ 2,616,247,531			\$ 2,642,410,006		
GO Debt Limit	\$ 118,526,589		\$ 122,082,387			\$ 125,744,859			\$ 127,002,307			\$ 130,812,377			\$ 132,120,500		
% Used	38.67%		41.31%			44.03%			46.91%			48.31%			50.78%		

Marshalltown City Council Discussion Street Improvement Program (CY 2027 – CY 2031)

*Pavement Management Presentation
Recommendations from Street Steering Committee*

Heather Thomas, PE – Public Works Director
September 14, 2026

“There is only one way to eat an elephant: a bite at a time.” – Desmond Tutu

Objectives for Tonight's Discussion

EDUCATE / DISCUSS



Brief Overview of Pavement Management

Update on Pavement Management Study Underway

Review of Existing Pavement Condition & Treatment Strategies

Modeling Scenarios – Performance & Budget

STREET STEERING COMMITTEE
RECOMMENDATIONS



UNDERSTAND POSSIBLE FUNDING OPTION



Requested Discussion Outcome

5-Year Funding Commitment

to begin building

5-Year Street Improvement Program

(CY 2027 – CY 2031)





Building Communities.
Improving Lives.

Marshalltown Pavement Management Plan

Pavement Conditions and Analysis Review

September 14th, 2026



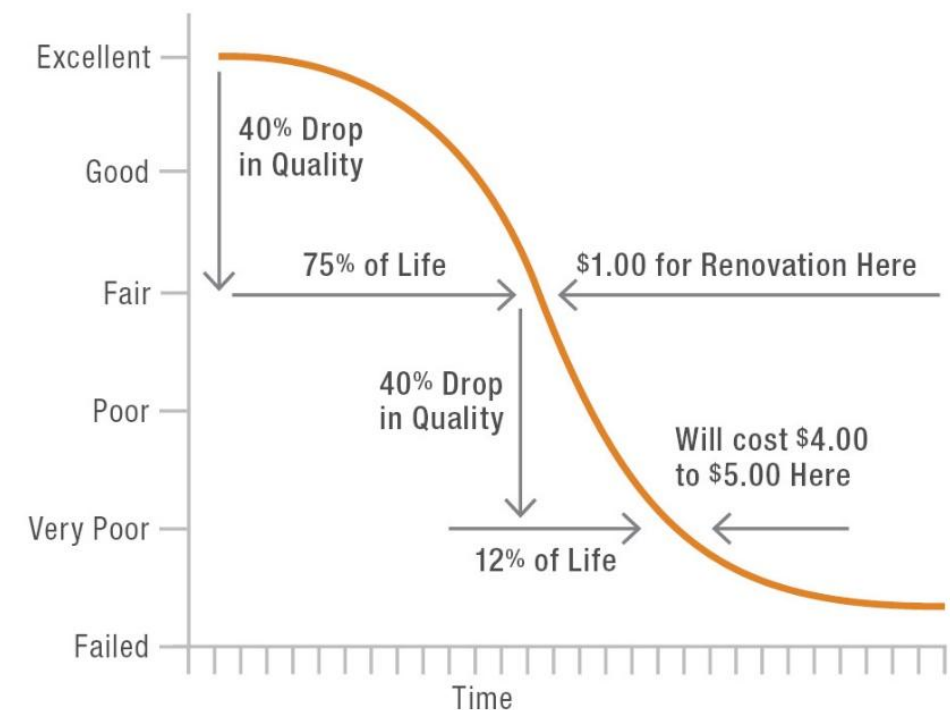
What is Pavement Management?

- ▶ Pavement Management is the systematic process of evaluating pavement conditions, prioritizing needs, and optimizing maintenance and rehabilitation strategies to maximize the performance of a roadway network over time.
- ▶ To do the *right* treatment to the *right* pavement at the *right* time.



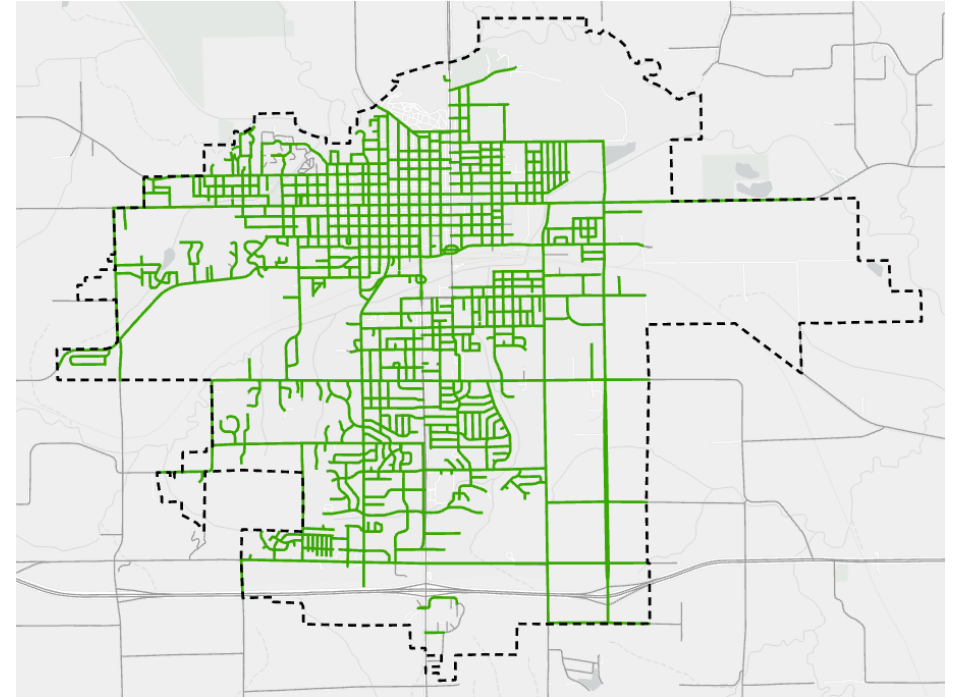
What is Pavement Management?

Pavement Life-Cycle



Study Goals

- ▶ Audit/verify the GIS street inventory
- ▶ Evaluate current roadway conditions
- ▶ Review and update Marshalltown's Pavement Management software model (dTIMS)
- ▶ Determine rehabilitation and reconstruction alternatives for use in the data analysis and projections.
- ▶ Create budget scenarios evaluate the effects of various budgets
- ▶ Develop 5-Year Capital Improvement Plan



Existing Conditions

- ▶ Distress Data
 - ▶ Automated data collection provided by the Iowa Pavement Management Program (IPMP)
- ▶ Condition Thresholds
 - ▶ Based on distress data, a Pavement Condition Index (PCI) is given to each street segment on a scale from 0-100

Condition Category	PCI Score
Very Good	81-100
Good	61-80
Fair	41-60
Poor	21-40
Very Poor	1-20



Very Good (82/100)



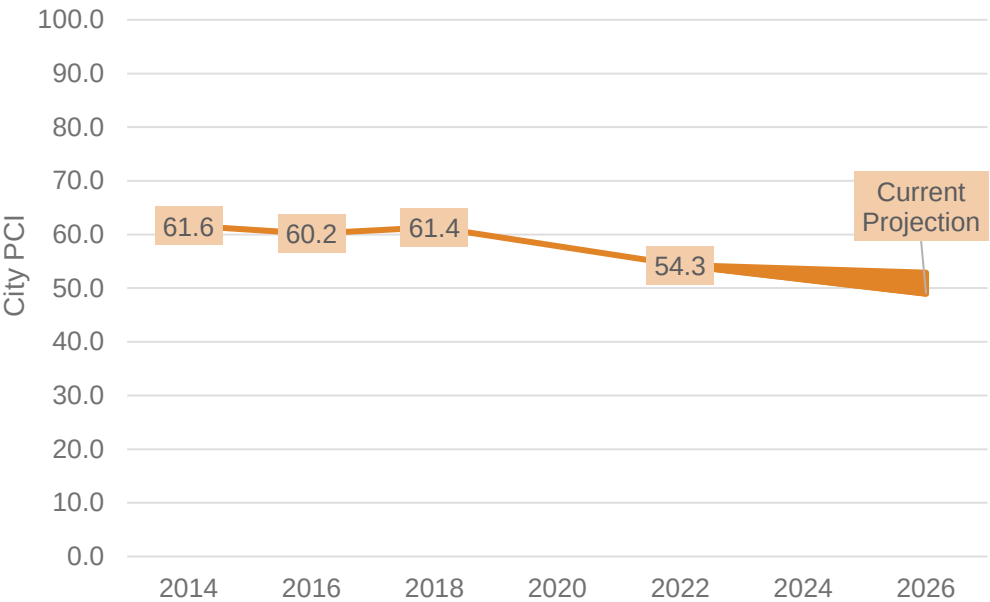
Fair (60/100)



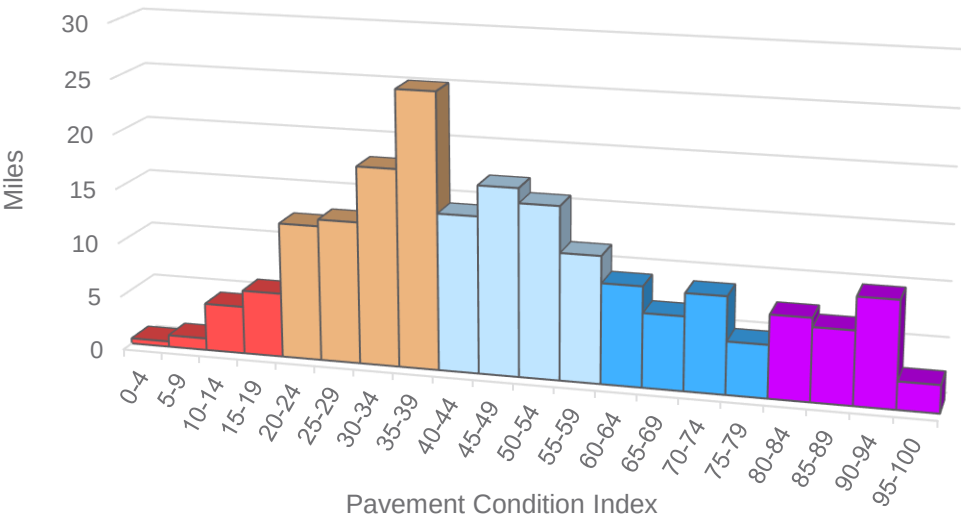
Very Poor (17/100)

Latest Pavement Conditions

- ▶ Most recent pavement data collection was from 2022
- ▶ Pavement Management Model was used to estimate pavement conditions today
- ▶ Average PCI in 2022 was 54.3

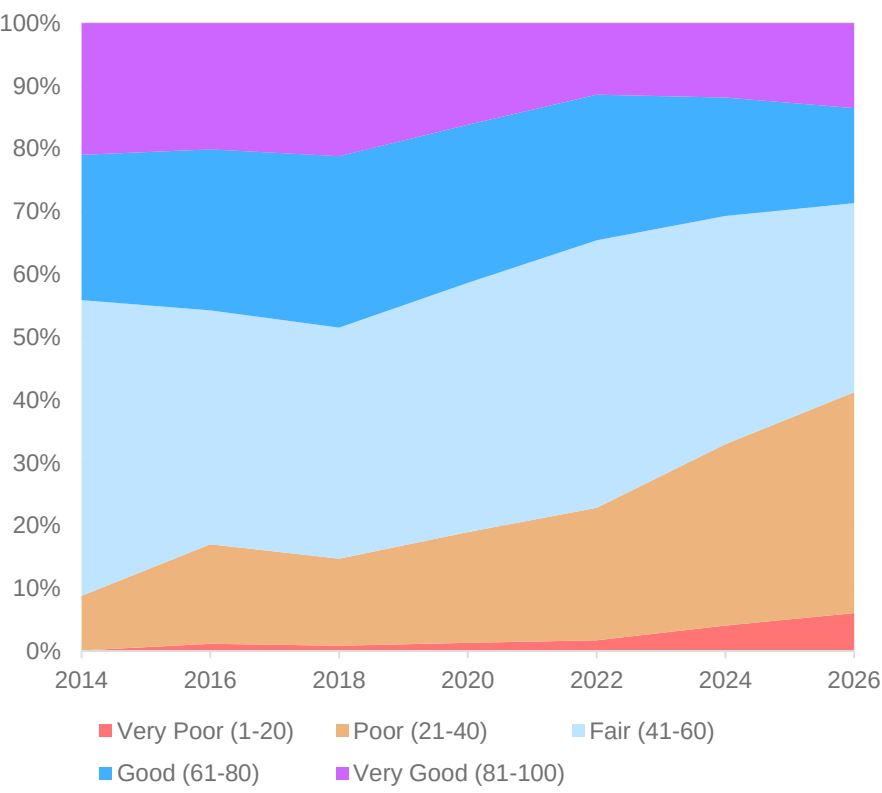


Average Annual PCI Deterioration			
Pavement Type/Function Classification	Arterial	Collector	Local
ACC	-1.94	-1.85	-1.45
COM	-2.59	-2.30	-1.95
PCC	-1.21	-1.23	-1.07

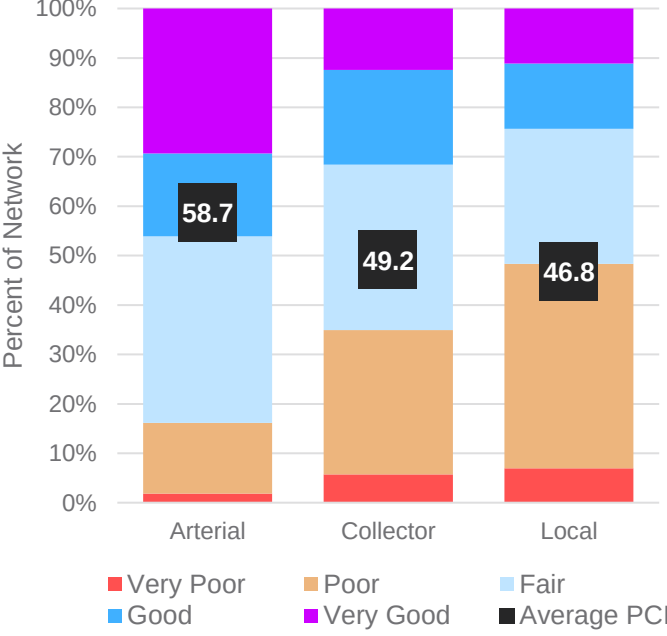


Latest Pavement Conditions

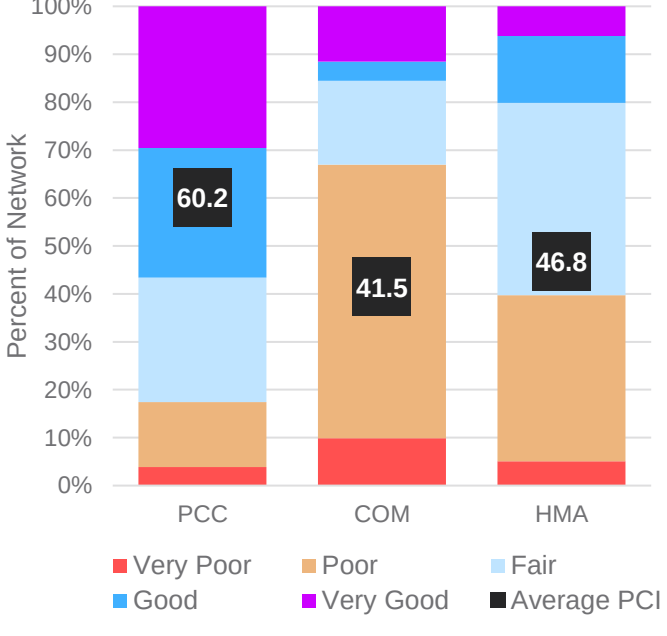
Overall Condition Category Trends



Condition by Functional Class



Condition by Pavement Type



Treatment Strategies

- Toolbox of Treatments created with input from City Staff
 - Reconstruction
 - Major Rehabilitation
 - Minor Rehabilitation
 - Preservation

Table 6: Toolbox of Treatments

Category	Treatment	Description	Cost	Trigger
Reconstruction	Reconstruction	The complete reconstruction of a roadway and all associated improvements. This assumes new PCC pavement, but full-depth HMA may be considered based on relevant design criteria.	\$265/sy	PCI =Poor OR Very Poor
Major Rehabilitation	Crack and Seat with Overlay	Asphalt Overlay, at least 3 inches thick, with preparation including cracking existing pavement which creates a new structural base for the asphalt surface.	\$72/sy	PCI =Poor OR Fair, Surface = PCC, Low Spalling
	Mill and Overlay	1.5 to 3 inches of asphalt pavement is milled off and then replaced with 3 inches of asphalt, including Interlayer on Collector and Arterial streets. Repairs surface issues and improves structural character.	\$58/sy	PCI =Poor OR Fair, Surface = HMA, Moderate Alligator Cracking, Low Patching
	Thick Overlay	Sometimes called a "Structural Overlay." 3 inches of Asphalt that adds enough thickness to increase the durability of the roadway and provides a new wearing surface. Interlayer, a highly polymerized asphalt, is added as an intermediate lift to further increase the structural integrity of the pavement.	\$54/sy	PCI =Poor OR Fair, Surface = PCC, Low Spalling, Low Patching
	Major PCC Restoration	Portions of the concrete street in bad repair are torn out and replaced (approximately 20% of a street). This may include patching, full panel replacement, and full depth repairs at joints. Improves overall condition and helps extend life by addressing problem areas before they spread	\$68/sy	PCI = Fair, Surface=PCC, Low Patching
Minor Rehabilitation	Thin Overlay	A "non-structural" overlay. High Performance Thin Lift (HPTO) can be considered under this heading as well. Laid on top of existing pavement, typically, 1-2 inches of asphalt. Improves smoothness and extends the life of roads in good to fair condition.	\$29/sy	PCI = Fair OR Good, Low D Crack, Low Spalling, Low Alligator Cracking, Low Patching, Low Rutting, Local only
	Minor PCC Restoration	Portions of the concrete street in bad repair are torn out and replaced (approximately 10% of a street). This may include patching, full panel replacement, and full depth repairs at joints. Slightly improves overall condition and helps extend life by addressing problem areas before they spread	\$34/sy	PCI = Good, Surface=PCC, Low Patching
Restoration/ Preservation	Diamond Grinding	Top ¼" to ½" of PCC pavement is ground off and textured. This is only done on rough pavements with good structure to improve ride smoothness and increase vehicle traction. Can be used following PCC Restorations to further enhance the effectiveness of the treatment.	\$9/sy	PCI = Good or Very Good, Surface = PCC, Low Patching
	Surface Treatment (Microsurfacing/ Seal Coat/ Slurry Seal)	Seal Coat – Slurry seals, chip seals, cape seals, etc. Applications of finer aggregate and binder to affordably extend life of existing pavements. Type is condition and location specific	\$6/sy	PCI = Good or Very Good, Surface = HMA, Low alligator cracking, Low Patching, Low Rutting, Local Only
		Microsurfacing - Thin asphalt polymer that seals the pavement from weather effects and corrects for minor irregularities. Typically used as a preventative measure, rather than a corrective one.	\$10/sy	
	Crack Sealing	Sealant on cracks and joints to prevent spreading and moisture from getting into the pavement structure. Deteriorated cracks may be routed or sawed out to provide better bond. Best when applied once every 3-5 years.	N/A	No trigger assigned
	Pavement Patching	Asphalt placed at spot locations. Used primarily on good pavements with minor failures, or as a stopgap on poor pavements until a better, more permanent, solution is applied.	N/A	No trigger assigned

Modeling Scenarios

► Performance-based Scenarios

► Investigates costs to reach and maintain different average Target PCIs

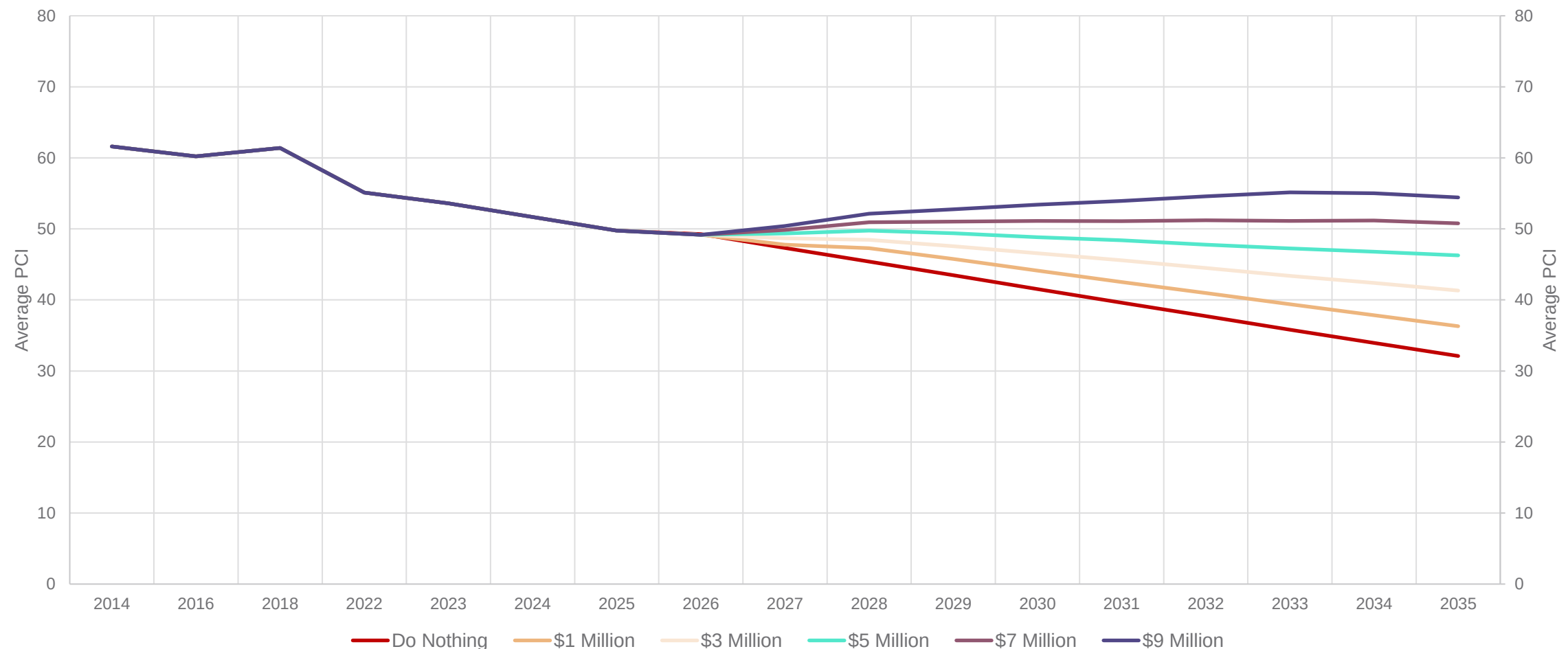
- What is the cost to maintain current PCI?
- What are the costs to increase PCI to higher levels?
- What are the costs to maintain the difference functional classifications?

► Budget-based Scenarios

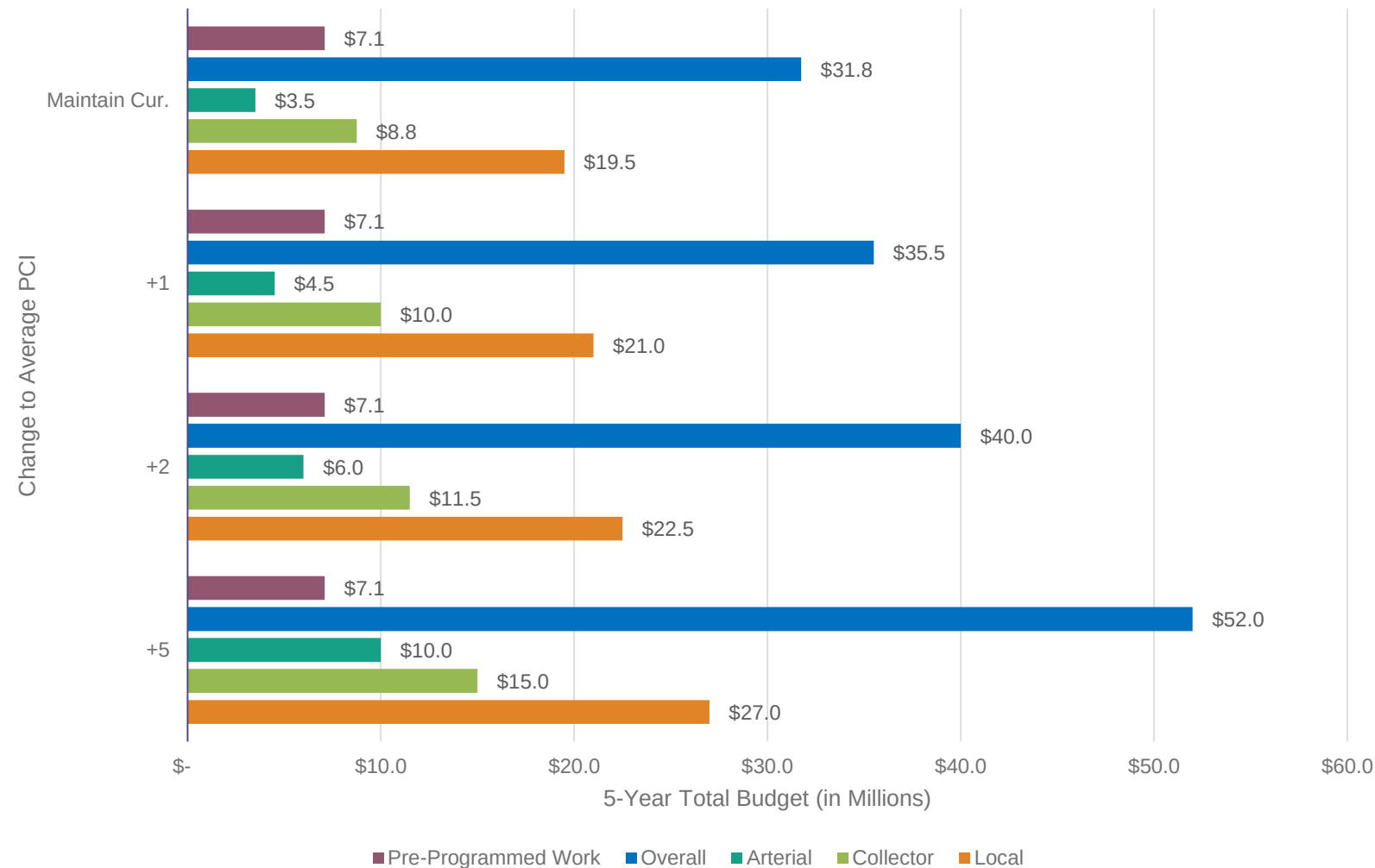
► Investigate the effects to overall PCI based on various funding scenarios

- What happens if nothing is spent on street maintenance?
- What happens at the current funding level?
- What happens with higher levels of funding?

Budget-Based Scenario



Performance-Based Scenario



Recommended Capital Improvement Plan (CIP)

- ▶ dTIMS is capable of recommending specific projects to optimize funding
- ▶ Projects are prioritized based on pavement condition, treatment timing, cost, and network goals
- ▶ Balances short-term needs with long-term overall performance, instead of simply recommending worst roads first
- ▶ This Pavement Management Project will conclude with the creation of a recommended 5-Year CIP
 - ▶ Recommendations are most accurate when using a realistic budget

Questions?



Caleb Jansen, PE

Direct 319-841-4351
cjansen@hrgreen.com



Larry Stevens, PE

Direct 515-657-5273
lstevens@hrgreen.com

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or the latest industry insights.

► [HRGREEN.COM](https://www.hrgreen.com)

Street Steering Committee

Committee Members

Mike Ladehoff, Mayor
Mark Mitchell – City Council Representative
Greg Nichols – City Council Representative

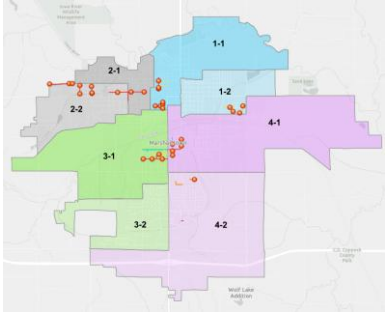
Mark Eaton
Teri Gibson
Robert Proffitt

City Staff Advisory Group

Carol Webb, City Administrator
Heather Thomas, Public Works Director
Ben Daleske, Civil Engineer II



Committee Direction for Scenarios



~ While all wards of the city will have work, street selection will be city-wide and not focused on distributing funding equally or making PCI conditions equal across all wards.

~ Resulting PCI can have a higher average at lower cost if only preservation and rehab work is done w/o any reconstruction. However, all are important. Initial target for expenditure of funds will be 5% preservation, 75% rehabilitation, & 20% reconstruction.

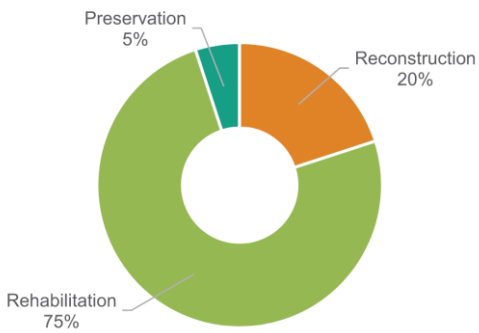
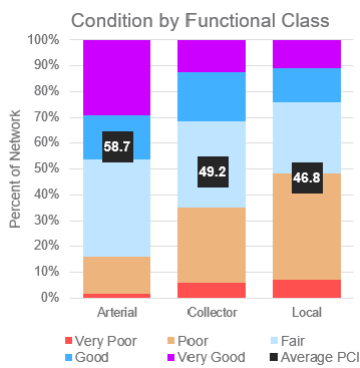


Figure 39: Proposed Budget Proportions

~ Distribute projects to maintain/adjust PCI based on functional class (arterial, collector, and local streets).



ie – not just focus on local residential streets
ie – not just focus on higher-traffic streets

Committee Recommendations



~ Establish Five-Year Funding Commitment

~ Funding Commitment is for **work on existing streets**, not utility, bridge, or streetscape projects.

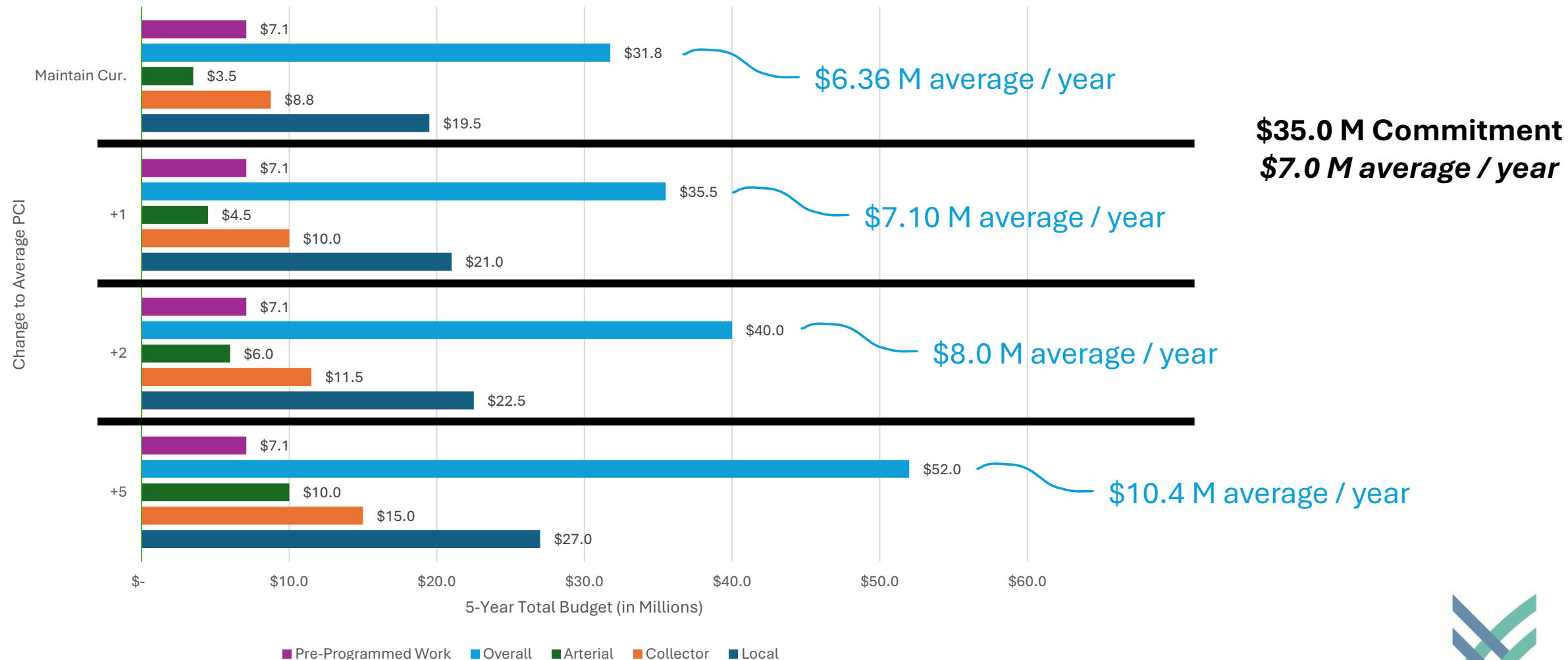
~Requested Funding Commitment is separate from three notable upcoming projects that have elements beyond just street improvements:

- Highland Acres Road (Lincoln Way to Main St); Est Project Cost = \$5,675,000
~5,600 ft x 22 ft existing; ~5,600 ft x 24 ft w/ 6-ft shoulders; includes road widening
- Main St (5th Ave to 12th Ave); Est Project Cost = \$5,600,000
~2,970 ft x avg 35 ft; estimate includes storm sewer (city); excludes water main (pd by MWW)
- W Main St (3rd St to Center St); Est Project Cost = \$6,240,000
~1,230 ft x 2 blocks of 52 ft; 1 block slightly less; includes streetscape, storm sewer, and water main (reimbursed by MWW)

“pre-programmed work”



Committee Recommendation



Funding a Street Improvement Program

Cole S. O'Donnell
Finance Director

Possible Funding Sources

Road Use Tax

- Fund Balance Allocated to Two Large Pre-Programmed Projects
- Supports Operating, In-House Maintenance, & Capital Equipment

Council Designated LOSST

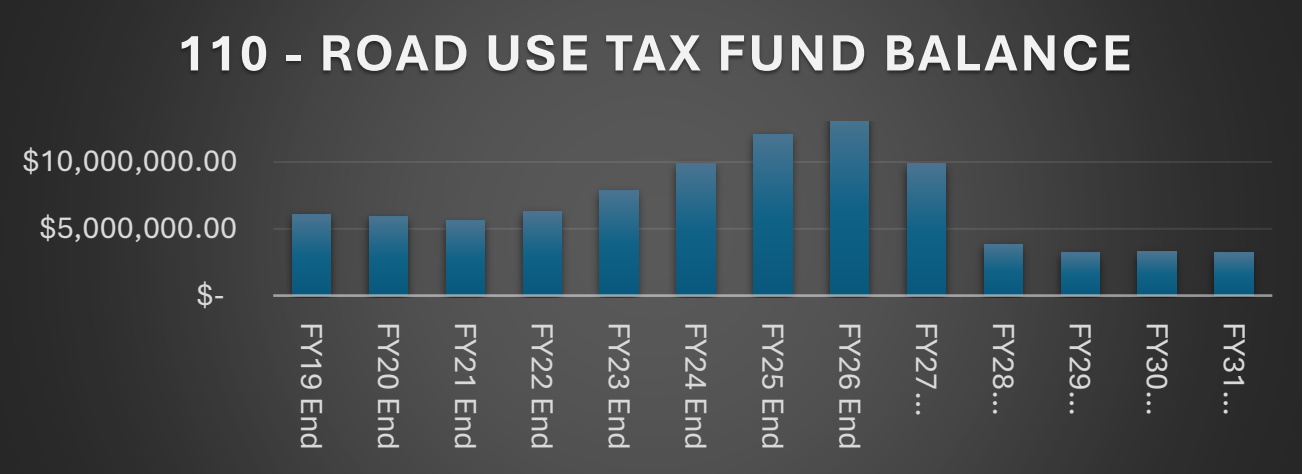
- Anticipated Other Uses

Franchise Fee

- Not In Effect, Possible Other Uses

General Obligation Bonding

- Most Likely, Available Funding Mechanism



General Obligation Bonding

Supports Capital Improvement Projects and Equipment Purchases Throughout the City as Debt Service

If \$7 M is to be committed annually from GO Bonding and we target no more than \$10 M per year GO Bonding, a maximum amount of \$3 M would be available for all other bonding needs, including certain street infrastructure projects not part of the Street Improvement Program (Downtown Phase 3 – W Main St).

Possible Projects/Purchases Requesting Bonding / Debt Proceeds in the next five years:

Bridge Projects

Library Sidewalk

West End Park – Restroom & Parking

Levee Work

Tornado Siren Upgrade

Anson Park Shelter

Coliseum Tuckpointing

Sidewalk Gap Projects

Dredging Recreational Retention Basins

Airport Runway & Taxiway

Library Solar

Fire Truck

Library Roof Replacement

City Hall HVAC & Building

Future Phases of Downtown
Implementation Plan –
Reconstruction, Utility, & Streetscape

Riverview Park – Phase 2

City Wayfinding & Entryway Signage

P&R Building Masonry Repair

Storm Water / Sewer Improvements

Center St Viaduct – Phase 2



MARSHALLTOWN
MORE THAN EVER

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General Obligation Bonding

Estimated Impact of Bonding Annually for \$10 M for the Next Five Years

Refer to Council Memo for estimate assumptions and debt policy considerations and the spreadsheet

Issue	Outstanding 6/30/2026	Principle FY 27	Outstanding 6/30/2027	Principle FY 28	Interest FY 28	Outstanding 6/30/2028	Principle FY 29	Interest FY 29	Outstanding 6/30/2029	Principle FY 30	Interest FY 30	Outstanding 6/30/2030	Principle FY 31	Interest FY 30	Outstanding 6/30/2031	Principle FY 32	Interest FY 32
2016A	\$ 1,105,000	\$ 175,000	\$ 930,000	\$ 220,000	\$ 18,600	\$ 710,000	\$ 230,000	\$ 14,200	\$ 480,000	\$ 235,000	\$ 9,600	\$ 245,000	\$ 245,000	\$ 4,900	\$ -		
2016B	\$ 1,480,000	\$ 485,000	\$ 995,000	\$ 495,000	\$ 19,900	\$ 500,000	\$ 500,000	\$ 10,000	\$ -			\$ -			\$ -		
2017	\$ 9,500,000	\$ 360,000	\$ 9,140,000	\$ 375,000	\$ 274,200	\$ 8,765,000	\$ 390,000	\$ 262,475	\$ 8,375,000	\$ 915,000	\$ 251,250	\$ 7,460,000	\$ 950,000	\$ 223,800	\$ 6,510,000	\$ 990,000	\$ 195,300
2018	\$ 1,205,000	\$ 385,000	\$ 820,000	\$ 400,000	\$ 24,600	\$ 420,000	\$ 420,000	\$ 12,600	\$ -			\$ -			\$ -		
2019	\$ 2,495,000	\$ 650,000	\$ 1,845,000	\$ 650,000	\$ 36,900	\$ 1,195,000	\$ 600,000	\$ 23,900	\$ 595,000	\$ 595,000	\$ 11,900	\$ -			\$ -		
2020A	\$ 4,370,000	\$ 1,305,000	\$ 3,065,000	\$ 310,000	\$ 20,000	\$ 2,755,000	\$ 420,000	\$ 16,900	\$ 2,335,000	\$ 415,000	\$ 12,700	\$ 1,920,000	\$ 425,000	\$ 8,550	\$ 1,495,000	\$ 430,000	\$ 4,300
2020B	\$ 1,395,000	\$ 220,000	\$ 1,175,000	\$ 225,000	\$ 13,675	\$ 950,000	\$ 230,000	\$ 11,425	\$ 720,000	\$ 235,000	\$ 9,010	\$ 485,000	\$ 240,000	\$ 6,308	\$ 245,000	\$ 245,000	\$ 3,308
2021	\$ 6,400,000	\$ 740,000	\$ 5,660,000	\$ 755,000	\$ 113,200	\$ 4,905,000	\$ 775,000	\$ 98,100	\$ 4,130,000	\$ 795,000	\$ 82,600	\$ 3,335,000	\$ 810,000	\$ 66,700	\$ 2,525,000	\$ 825,000	\$ 50,500
2022A	\$ 8,520,000	\$ 440,000	\$ 8,080,000	\$ 460,000	\$ 326,760	\$ 7,620,000	\$ 635,000	\$ 308,360	\$ 6,985,000	\$ 660,000	\$ 282,960	\$ 6,325,000	\$ 685,000	\$ 256,560	\$ 5,640,000	\$ 710,000	\$ 229,160
2020B	\$ 265,000	\$ 130,000	\$ 135,000	\$ 135,000	\$ 6,480	\$ -			\$ -			\$ -			\$ -		
2023	\$ 9,105,000	\$ 515,000	\$ 8,590,000	\$ 540,000	\$ 347,013	\$ 8,050,000	\$ 565,000	\$ 325,413	\$ 7,485,000	\$ 959,000	\$ 302,813	\$ 6,526,000	\$ 625,000	\$ 279,013	\$ 5,901,000	\$ 655,000	\$ 254,013
2027			\$ 10,000,000	\$ 503,133	\$ 390,000	\$ 9,496,867	\$ 522,756	\$ 370,378	\$ 8,974,111	\$ 543,143	\$ 349,990	\$ 8,430,968	\$ 564,326	\$ 328,808	\$ 7,866,642	\$ 586,334	\$ 306,799
2028			\$ -			\$ 10,000,000	\$ 503,133	\$ 390,000	\$ 9,496,867	\$ 522,756	\$ 370,378	\$ 8,974,111	\$ 543,143	\$ 349,990	\$ 8,430,968	\$ 564,326	\$ 328,808
2029			\$ -			\$ -			\$ 10,000,000	\$ 503,133	\$ 390,000	\$ 9,496,867	\$ 522,756	\$ 370,378	\$ 8,974,111	\$ 543,143	\$ 349,990
2030			\$ -			\$ -			\$ -			\$ 10,000,000	\$ 503,133	\$ 390,000	\$ 9,496,867	\$ 522,756	\$ 370,378
2031			\$ -			\$ -			\$ -			\$ -			\$ 10,000,000	\$ 503,133	\$ 390,000
2032																	
2033																	
2034																	
2035																	
Total	\$ 45,840,000		\$ 50,435,000	\$ 5,068,133	\$ 1,591,328	\$ 55,366,867	\$ 5,790,889	\$ 1,843,751	\$ 59,575,978	\$ 6,378,032	\$ 2,073,201	\$ 63,197,946	\$ 6,113,358	\$ 2,285,007	\$ 67,084,588	\$ 6,574,692	\$ 2,482,556
LOST Transfer			\$ 3,431,250			\$ 3,468,994			\$ 3,507,153			\$ 3,545,731			\$ 3,584,734		
DS Required			\$ 3,228,211			\$ 4,165,646			\$ 4,944,080			\$ 4,852,633			\$ 5,472,513		
Debt Levy		\$ 2.10955		\$ 3.08551	46.26%		\$ 3.92267	27.13%		\$ 4.58690	16.93%		\$ 4.43552	-3.30%		\$ 4.92820	11.11%
Taxable Valuation	\$ 1,030,785,962	1.50%	\$ 1,046,247,751			\$ 1,061,941,468			\$ 1,077,870,590			\$ 1,094,038,649			\$ 1,110,449,228		
100% Valuation	\$ 2,370,531,789	3.00%	\$ 2,441,647,743			\$ 2,514,897,175			\$ 2,540,046,147			\$ 2,616,247,531			\$ 2,642,410,006		
GO Debt Limit	\$ 118,526,589		\$ 122,082,387			\$ 125,744,859			\$ 127,002,307			\$ 130,812,377			\$ 132,120,500		
% Used	38.67%		41.31%			44.03%			46.91%			48.31%			50.78%		

\$ 2.10955

\$ 3.08551

\$ 3.92267

\$ 4.58690

\$ 4.43552

\$ 4.92820

Debt Service Levy

Requested Discussion Outcome

5-Year Funding Commitment

to begin building

5-Year Street Improvement Program

(CY 2027 – CY 2031)

