



AGENDA – Engineering and Construction Committee

Thursday, August 21, 2025 6:00 PM

Committee Members

J. Fennell, Chair
N. Cuzzone
T. Noonan
F. Saverino
J. Zay

- I. Roll Call
- II. Approval of the August 21, 2025, Engineering & Construction Committee Minutes

RECOMMENDED MOTION: To approve the Minutes of the August 21, 2025, Engineering & Construction Committee Meeting of the DuPage Water Commission.

- III. Report of Status of Operations and Construction
- IV. **Resolution R-66-25:** A Resolution Awarding a Contract for the Construction of the West Transmission Main along Book Road From 75th Street to the ComEd R.O.W. (Contract TW-6/25 Section 1 (Book Road))
- V. **Resolution R-67-25:** A Resolution Approving and Ratifying Certain Change Orders for the West Transmission Main along Book Road From 75th Street to the ComEd R.O.W. (Change Order No. 001-Contract TW-6/25 Section 1 (Book Road))
- VI. **Resolution R-71-25:** A Resolution Approving Certain Work Authorization Orders Under Quick Response Contract QR-13/25 (**WAO No. 13.003 to Benchmark Construction Co., Inc. – 30" Water Main Leak Repair - \$79,403.69**)
- VII. **Resolution R-73-25:** A Resolution Approving a Second Amendment to Task Order No. 18 under a Master Contract with AECOM Technical Services, Inc. (**Increase Cost Not-To-Exceed from \$122,620 to \$139,520**)

RECOMMENDED MOTION: To recommend approval of Items 2 through 5 of the Engineering and Construction Committee Report section of the Commission meeting agenda

- VIII. Old Business
- IX. New Business

X. Executive Session

RECOMMENDED MOTION: To go into Executive Session to discuss security procedures pursuant to 5 ILCS 120/2(c)(8), to discuss matters related to personnel pursuant to 5 ILCS 120/2(c)(1) and (2), to discuss acquisition of real estate pursuant to 5 ILCS 120/2(c)(5), to discuss the setting of a price for sale or lease of property owned by the DuPage Water Commission 5 ILCS 120/2(c)(6), to discuss pending, probable, or imminent litigation pursuant to 5 ILCS 120/2(c)(11), and/or to discuss minutes of closed meetings pursuant to 5 ILCS 120/2(c)(21) (Roll Call).

RECOMMENDED MOTION: To come out of Executive Session (Voice Vote).

XI. Adjournment

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**Minutes of a Meeting
of the**

ENGINEERING & CONSTRUCTION COMMITTEE

DuPage Water Commission
600 E. Butterfield Road, Elmhurst, Illinois

August 21, 2025

Chairman Fennell called the meeting to order at 6:00 P.M.

Committee members in attendance: N. Cuzzone, J. Fennell, T. Noonan, F. Saverino and J. Zay

Committee members absent: None

Also in attendance: C. Bostick, D. Cuvalo, J. Loster, and M. Weed

Commissioner Saverino moved to approve the Minutes of the June 19, 2025, Engineering & Construction Committee Meeting of the DuPage Water Commission. Motion was seconded by Commissioner Cuzzone and unanimously approved by a Voice Vote.

Manager of Water Operations Bostick provided a report on the ongoing Operations and Maintenance activities listed in the Report of Status of Operations and Board Action Items and Engineering Manager Loster provided a report on the Status of Capital Construction, Capital Engineering and other Improvement Projects.

Regarding R-68-25, Manager of Water Operations Bostick advised the Committee that this action appears on the agenda seeking authorization to continue the High-Lift Pump Control Valve refurbishment program with the next cone valve removal and delivery to A/C Service and Repair in York, Pennsylvania at a cost not to exceed \$150,000.

Regarding R-69-25, Manager of Water Operations Bostick advised the Committee that this action appears on the agenda seeking approval of QRE-10 Work Authorization Order No. 004 to Volt Electric for annual Infrared Electrical Scanning at DuPage Pump Station and at the Tank Site 1 pump station at a cost not to exceed \$10,304.

Regarding R-70-25, Manager of Water Operations Bostick provided a brief synopsis of power loss events and activities regarding power loss studies at the DuPage Pumping Station, and the action item requests approval of the 1st Amendment to Task Order No. 02 with CDM Smith to add design services and other associated services for upgrades to the 4.16kV switchgear control circuitry.

Regarding R-54-25, Manager of Water Operations Bostick advised the Committee that this action appears on the agenda seeking ratification of a Task Order with Arcadis US to provide research into the operation of the Emergency Generator System emissions requirements and provide a response to the EPA regarding whether the Generation System exceeds maximum limits of ozone output; and reclassification would be required which would result in operational and reporting changes. Manager of Water Operations Bostick advised the Committee that Arcadis, after reviewing the operational history, determined that reclassification was not warranted and assisted Staff with the response to the EPA.

Regarding the Lexington Pump Station capital maintenance initiatives, Manager of Water Operations Bostick advised the Committee that proposals for potential installation of vibration analysis instrumentation have been under review by the Chicago Department of Water Management, and their legal and finance departments for the last eight weeks and an action item may be brought forth for Board consideration at a future Commission meeting.

Regarding the Alternate Water Source Technical Advisory Group activities, Manager of Water Operations Bostick reported that they continue engagement with potential entities regarding easement acquisition, a WIFIA Financing meeting was held with representatives from the Federal EPA, bathymetry survey work is underway and is expected to be completed by mid-September and the Technical Advisory Team is advancing completion of the Business Case Analysis, which will be presented to the Board of Commissioners in September.

Manager of Water Operations Bostick reported that a leak on a 30" steel water main located in Wheaton was repaired where it appears that when a storm sewer was installed, subsequent to the DWC installation, the sewer contractor's excavator's bucket scratched and peeled off the protective coating on the DWC pipe which has resulted in accelerated corrosion. Manager of Water Operations Bostick advised that the Work Authorization Order will be brought forth for ratification at a future Board meeting.

Regarding R-60-25, Manager of Water Operations Bostick advised the Committee that this action appears on the agenda seeking authorization for the General Manager to purchase steel pipe and butt straps from American Spiral Weld Pipe at a cost not to exceed \$30,000. The purpose of the purchase is to replenish an inventory of pipes and butt straps consumed during previous leak repair activities.

Regarding R-61-25, Manager of Water Operations Bostick advised the Committee that this action appears on the agenda to approve and ratify Change Order No. 6 to PSD-9/21 the SCADA Replacement Project for the replacement of the damaged environmental enclosure at ROV 11A, and to address an aggregation of twelve (12) discrete changes to labor and hardware through Concentric Integration.

Regarding R-62-25 Manager of Water Operations Bostick advised the Committee that this action appears on the agenda to approve and ratify Work Authorization Order No. 13.001 to Quick Response Contractor, John Neri Construction Co., Inc. for work was necessary to repair the concrete structure damaged during a traffic incident.

Regarding R-63-25 Manager of Water Operations Bostick advised the Committee that this action appears on the agenda to approve Work Authorization Order No. 13.002 to Quick Response Contractor, John Neri Construction Co., Inc. The work is necessary due to the deteriorating conditions of various types of vault structures and surrounding pavement found during routine inspections by staff.

Regarding R-65-25, Engineering Manager Loster stated that the design of a joint metering and pressure adjusting station for the Village of Lombard's fifth connection point continues to progress with the modification of the previously approved Joint Facility Agreement allowing the Village of Lombard to manage the construction phase.

Engineering Manager Loster also noted that there are multiple ongoing efforts related to cathodic protection of Commission pipelines, having recently completed work associated with the annual test

point survey in addition to the development of plans for cathodic protection improvements on the south and outer belt transmission mains.

Regarding the WaterLink Project, Engineering Manager Loster stated that the phase II effort continues and is approximately 88% complete at this time. He advised the Committee that permit submittals are ongoing, as is coordination with ComEd for technical review as well as the legal review of the proposed License Agreement terms.

Engineering Manager Loster also shared that the corrosion control study, managed by the three WaterLink communities, continues to progress and continues to look promising.

With regard to easement acquisition on the WaterLink Project, Engineering Manager Loster noted that there are two additional ordinances on the agenda, O-8-25 and O-9-25, the details of which will be discussed during closed session, along with some additional staff authority being requested regarding the negotiation of easements.

Regarding R-64-25, Engineering Manager Loster stated that this will award a contract to Stanley Consultants for the Construction Engineering Services of the Meter Station bid package. He also noted that with all other contracts awarded in June for the pipeline segments, this would be the last Construction Engineering Services contract awarded on the project.

Engineering Manager Loster requested that no action be taken on resolutions R-66-25 and R-67-25. He stated that the contract award is higher than the estimated amount for the work and, as a result, the WaterLink communities have requested that the award be delayed until the September meeting so that they can further assess total project costs and any changes to their corresponding funding requests and/or water rate increases.

Chairman Fennell inquired with the Committee if there were any further questions regarding the action items. Hearing none, Commissioner Saverino moved to recommend approval of items 2 through 7 and 10 through 12 of the Engineering and Construction Committee portions of the Commission Agenda (Items IV through IX and XII through XIV on the Engineering and Construction Committee Agenda). Seconded by Commissioner Cuzzone and unanimously approved by a Voice Vote.

Chairman Fennell asked the Committee if any other business or other items to be discussed. Hearing none, and with no other items coming before the Committee, Commissioner Saverino moved to adjourn the meeting at 6:23 P.M. Seconded by Commissioner Noonan and unanimously approved by a Voice Vote.



M E M O R A N D U M

To: Paul May – General Manager

From: Chris Bostick – Manager of Water Operations
Jeff Loster – Manager of Engineering

Mike Weed – Operations & Instrumentation Supervisor
Dariusz Panaszek – Pipeline & Remote Facilities Supervisor
Denis Cuvalo – Systems Engineer and Information Technology Supervisor

Date: 9/11/2025

Subject: Status of Operations, Engineering and Construction

Operations Overview

The Commission's sales for August 2025 were a total of 2.59 billion gallons. This represents an average daily demand of 83.7 million gallons per day (MGD), which is lower than the August 2024 average day demand of 84.0 MGD. The maximum day demand was 99.0 MGD, which is higher than the August 2024 maximum day demand of 96.8 MGD. The minimum day flow was 73.8 MGD. Peak demand for August 2025 was 109.0 MGD recorded on August 9, 2025. Peak discharge flow rate for August 2025 was 124.02 MGD, recorded on August 9, 2025, at 12:50 PM.

The recorded total precipitation for August 2025 was 5.03 inches compared to 2.60 inches for August 2024. The level of Lake Michigan for August 2025 is 578.94 (Feet International Great Lakes Datum (IGLD) 1985) compared to 579.33 (Feet IGLD 1985) for August 2024.

DuPage Operations & Instrumentation Maintenance and Construction Overview

High Lift Pump Motor (HLP) No. 3 was repaired at the motor repair shop and reinstalled. Staff continue to experience issues at motor start-ups. Repair service reports and manufacturer recommendations are under review by a qualified third party and Staff.

Annual Infrared Electrical Scanning of DuPage Pumping Station and Tank Site 1 electrical equipment was performed the week of September 15, 2025. Service report is forthcoming.

Replacement of the DuPage Pumping Station's Fire Alarm System is in process; tentative completion date is end of November 2025.

Staff continue to work with CDM Smith and Strand Associates to further evaluate the electrical issues with the medium voltage switchgear, controls and potential updating of high-lift pump motor monitoring and protective relays which are nearing the end of their useful life.

City of Chicago Water Treatment Modifications

No Change: The City of Chicago has reported as of March 31st, the transition has been completed from blended phosphate to phosphoric acid, to optimize the control of lead and copper release through household plumbing. DWC staff will continue monitoring certain water quality parameters to follow progress.

Lexington Operations and Maintenance Overview

No Change: Proposals for potential installation of vibration analysis instrumentation have been received from vendors and Quick-Response Electrical contractors and are currently under review by the Chicago Department of Water Management and may be brought forth for Board consideration at a future Commission meeting.

No Change: Chicago DWM reports that they will continue to troubleshoot their SCADA system deficiencies to identify the root cause of the ongoing issues.

Alternate Water Source

The Technical Advisory Team; Consor, Woolpert and Raftelis, continue their tasks including engagement with potential entities regarding easement acquisition. Bathymetry studies of Lake Michigan are complete. The Technical Advisory Team is preparing to present the Business Case Analysis during the September 18th Board of Commissioners meeting. A status report for the month of August is attached.

Pipeline & Remote Facilities Maintenance Overview

A leak on a 36" steel water main located in Villa Park is being investigated at the time of writing this report. The contractor is mobilizing to perform an exploratory excavation to located leak and determine the method of the repair. Additional details will be provided during the Engineering and Construction Committee meeting on September 18th.

Resolution R-71-25 appears on the agenda to approve and ratify Work Authorization Order No. 13.003 to Quick Response Contractor, Benchmark Construction Co., Inc. The work was necessary to repair a leaking 30-inch diameter steel water main located in the City of Wheaton.

Pipeline staff continue closely monitoring I-294 (SB) Tollway construction work in the vicinity of the Commission's 72-inch and 90-inch water mains and construction work along Butterfield Road between I-355 and Park Blvd in the vicinity of the Commission's 54-inch water main.

Pipeline and Remote Facilities staff continue to inspect Remote Facilities, perform maintenance and repairs on rectifiers and air release valves.

SCADA & Information Technology Overview

The SCADA Replacement Project (Contract PSD-9/21) is ongoing. The DWC campus control panel replacement has been completed, including the site acceptance testing, with only punch list items remaining that need to be coordinated with remote site upgrades. Commission and Concentric staff

completed the communication configuration bench acceptance testing and are beginning to replace the backhaul radios at all remote locations. RTU replacements are expected to begin by the end of September. During the backhaul upgrade, communication configuration and testing have taken more effort and time than originally anticipated due to several factors, including but not limited to the scale of the backhaul system, the sequencing to transition and maintain the existing infrastructure and HSQ SCADA system, and the testing and configuration required to verify the new system's redundancies and configuration. The additional effort and time it took to complete the backhaul and RTU upgrade will likely push the schedule of the project further than the originally anticipated completion date of May 31, 2026. While efforts continue on the backhaul and RTU replacement, electrical improvements to remote sites are underway, completing installations at remote sites included in the first and second batches to have their RTUs replaced. In addition, the DWC campus fiber optic system upgrade, which includes the replacement of the fiber runs throughout the campus and the commissioning of new fiber optic panels, will take place in October.

The annual Customer Meter Testing Program is ongoing and is approximately 46% complete.

Engineering & Capital Improvement Program Overview

Design of a Joint Facility (Metering Station and Pressure Adjusting Station) at Lombard's fifth connection is nearing completion. Resolution R-73-25 appears on the agenda in the form of a Task Order Amendment, which accounts for some additional effort required by the AECOM design team due to some increases to the scope of work requested by Lombard.

Cathodic Protection Improvement efforts also continue, with design work for rectifier and ribbon anode improvements on the south and outer belt transmission pipelines remaining under development. Additional geotechnical efforts will likely be required due to the unique nature of the proposed design.

WaterLink Communities (Montgomery/Oswego/Yorkville)

The Phase II engineering effort remains ongoing and is approximately 90% complete. Permit submittals continue to be coordinated, with all review comments assessed and incorporated as necessary into the design drawings by the design team. Coordination with ComEd continues to move forward, with review of the proposed pipe alignment having been completed and negotiations of the license agreement ongoing.

The corrosion control treatment study, performed by the Cornwell Engineering Group, continues to move forward with positive results. This study is required by the IEPA and the findings were presented for their review and approval earlier this week.

Efforts related to easement acquisition also continue, with Ordinance O-10-25 appearing on the agenda. This item includes Phase I (authority to negotiate) approvals.

The Book Road bid package was recently advertised, with bids opened on Tuesday, July 1st. A total of three bids were received, with the apparent low bidder being a Joint Venture between D. Construction, Inc. and Benchmark Construction Co., Inc. Resolution R-66-25 appears on the agenda, which would approve a construction contract with the Joint Venture to complete the Book Road portion of the WaterLink Pipeline Project. However, with the bids being significantly over budget,

Commission staff have worked with the design team to negotiate with the Joint Venture in an effort to reduce the overall construction cost. As a result, Resolution R-67-25 also appears on the agenda, in the form of Change Order No. 01 to the Book Road project, which represents a significant reduction in the construction cost.

Board Action Items

- Resolution R-66-25:** A Resolution Awarding a Contract for the Construction of the West Transmission Main along Book Road From 75th Street to the ComEd R.O.W. (Contract TW-6/25 Section 1 (Book Road))
- Resolution R-67-25:** A Resolution Approving and Ratifying Certain Change Orders for the West Transmission Main along Book Road From 75th Street to the ComEd R.O.W. (Change Order No. 001-Contract TW-6/25 Section 1 (Book Road))
- Resolution R-71-25:** A Resolution Approving Certain Work Authorization Orders Under Quick Response Contract QR-13/25 (**WAO No. 003 to Benchmark Construction Co., Inc. – 30” Water Main Leak Repair - \$79,403.69**)
- Resolution R-73-25:** A Resolution Approving a Second Amendment to Task Order No. 18 under a Master Contract with AECOM Technical Services, Inc. (**Increase Cost Not-To-Exceed from \$122,620 to \$139,520**)

Attachments

1. DuPage Laboratory Bench Sheets for August 2025
2. Water Sales Analysis 01-May-2020 to 31-August-2025
3. WaterLink Status Report
4. Alternate Water Source Report

DU PAGE WATER COMMISSION
WATER SALES ANALYSIS

01-May-92 TO 31-Aug-25
PER DAY AVERAGE 77,822,292

MONTH	SALES TO CUSTOMERS (GALLONS)	PURCHASES FROM CHICAGO (GALLONS)	GALLONS BILLED %	BILLINGS TO CUSTOMERS	BILLINGS FROM CHICAGO	DOCUMENTED COMMISSION WATER USE (2)	DOCUMENTED COMMISSION WATER USE %	TOTAL ACCOUNTED FOR %	DWC OPER. & MAINT. RATE (3)	CHGO RATE
May-22	2,276,513,000	2,344,221,635	97.11%	\$11,792,337.34	\$9,648,816.25	5,698,667	0.24%	97.35%	\$5.18	\$4.116
Jun-22	2,682,480,000	2,772,533,130	96.75%	\$13,895,246.40	\$11,982,888.19	690,925	0.02%	96.78%	\$5.18	\$4.322
Jul-22	2,804,661,000	2,892,532,635	96.96%	\$14,528,143.98	\$12,501,526.05	883,858	0.03%	96.99%	\$5.18	\$4.322
Aug-22	2,688,224,000	2,772,533,130	96.96%	\$13,925,000.32	\$11,982,888.19	906,806	0.03%	96.99%	\$5.18	\$4.322
Sep-22	2,415,535,000	2,474,643,822	97.61%	\$12,512,471.30	\$10,695,410.60	1,021,063	0.04%	97.65%	\$5.18	\$4.322
Oct-22	2,153,410,000	2,220,050,683	97.00%	\$11,154,663.80	\$9,595,059.05	2,891,786	0.13%	97.13%	\$5.18	\$4.322
Nov-22	1,919,552,000	1,979,550,491	96.97%	\$9,943,279.36	\$8,555,617.22	1,008,092	0.05%	97.02%	\$5.18	\$4.322
Dec-22	2,071,113,000	2,123,449,660	97.54%	\$10,728,365.34	\$9,177,549.43	552,389	0.03%	97.56%	\$5.18	\$4.322
Jan-23	2,014,750,000	2,060,255,805	97.79%	\$10,436,405.00	\$8,904,425.59	337,423	0.02%	97.81%	\$5.18	\$4.322
Feb-23	1,835,597,000	1,883,158,917	97.47%	\$9,508,392.46	\$8,139,012.84	529,206	0.03%	97.50%	\$5.18	\$4.322
Mar-23	1,971,974,000	2,026,257,691	97.32%	\$10,214,825.32	\$8,757,453.41	306,690	0.02%	97.34%	\$5.18	\$4.322
Apr-23	1,962,197,000	2,010,451,747	97.60%	\$10,164,180.46	\$8,689,172.45	349,596	0.02%	97.62%	\$5.18	\$4.322
May-23	2,474,377,000	2,540,440,833	97.40%	\$13,336,892.03	\$10,979,785.28	684,441	0.03%	97.43%	\$5.39	\$4.322
Jun-23	2,971,436,000	3,043,540,086	97.63%	\$16,016,040.04	\$13,814,628.45	678,930	0.02%	97.65%	\$5.39	\$4.539
Jul-23	2,567,425,000	2,639,887,376	97.26%	\$13,838,420.75	\$11,982,448.80	1,047,600	0.04%	97.29%	\$5.39	\$4.539
Aug-23	2,708,945,000	2,773,069,509	97.69%	\$14,601,213.55	\$12,586,962.50	832,992	0.03%	97.72%	\$5.39	\$4.539
Sep-23	2,406,858,000	2,471,708,096	97.38%	\$12,972,964.62	\$11,219,083.05	753,904	0.03%	97.41%	\$5.39	\$4.539
Oct-23	2,071,291,000	2,116,545,770	97.86%	\$11,164,258.49	\$9,607,001.25	1,034,131	0.05%	97.91%	\$5.39	\$4.539
Nov-23	1,902,725,000	1,957,768,374	97.19%	\$10,255,687.75	\$8,886,310.65	809,342	0.04%	97.23%	\$5.39	\$4.539
Dec-23	1,972,754,000	2,031,158,416	97.12%	\$10,633,144.06	\$9,219,428.05	2,329,064	0.11%	97.24%	\$5.39	\$4.539
Jan-24	2,058,390,000	2,131,445,175	96.57%	\$11,094,722.10	\$9,674,663.60	730,427	0.03%	96.61%	\$5.39	\$4.539
Feb-24	1,868,175,000	1,916,869,806	97.46%	\$10,069,463.25	\$8,700,672.05	268,834	0.01%	97.47%	\$5.39	\$4.539
Mar-24	1,927,795,000	1,971,770,225	97.77%	\$10,390,815.05	\$8,949,831.10	340,529	0.02%	97.79%	\$5.39	\$4.539
Apr-24	1,951,120,000	1,992,959,991	97.90%	\$10,516,536.80	\$9,046,045.40	426,636	0.02%	97.92%	\$5.39	\$4.539
May-24	2,285,252,000	2,331,031,384	98.04%	\$12,751,706.16	\$10,580,551.45	964,148	0.04%	98.08%	\$5.58	\$4.539
Jun-24	2,558,136,000	2,613,555,125	97.88%	\$14,274,398.88	\$12,265,414.20	669,121	0.03%	97.91%	\$5.58	\$4.693
Jul-24	2,577,734,000	2,637,750,416	97.72%	\$14,383,755.72	\$12,378,962.70	5,976,667	0.23%	97.95%	\$5.58	\$4.693
Aug-24	2,723,982,000	2,791,119,391	97.59%	\$15,199,819.56	\$13,098,723.30	5,570,100	0.20%	97.79%	\$5.58	\$4.693
Sep-24	2,607,811,000	2,668,243,213	97.74%	\$14,551,585.38	\$12,522,065.40	887,220	0.03%	97.77%	\$5.58	\$4.693
Oct-24	2,256,800,000	2,311,304,709	97.64%	\$12,592,944.00	\$10,846,953.00	715,430	0.03%	97.67%	\$5.58	\$4.693
Nov-24	1,872,414,000	1,918,174,238	97.61%	\$10,448,070.12	\$9,001,956.60	517,416	0.03%	97.64%	\$5.58	\$4.693
Dec-24	2,003,025,000	2,053,944,598	97.52%	\$11,176,879.50	\$9,639,162.00	465,013	0.02%	97.54%	\$5.58	\$4.693
Jan-25	2,084,797,000	2,142,229,363	97.32%	\$11,633,167.26	\$10,053,482.40	295,500	0.01%	97.33%	\$5.58	\$4.693
Feb-25	1,882,269,000	1,935,765,374	97.24%	\$10,503,061.00	\$9,084,546.90	225,910	0.01%	97.25%	\$5.58	\$4.693
Mar-25	1,991,703,000	2,037,452,909	97.75%	\$11,113,702.74	\$9,561,766.50	307,123	0.02%	97.77%	\$5.58	\$4.693
Apr-25	2,007,784,000	2,062,448,476	97.35%	\$11,203,434.72	\$9,679,070.70	4,167,787	0.20%	97.55%	\$5.58	\$4.693
May-25	2,375,691,000	2,438,182,271	97.44%	\$13,779,007.80	\$11,442,389.40	864,737	0.04%	97.47%	\$5.80	\$4.693
Jun-25	2,581,750,000	2,650,830,953	97.39%	\$14,974,150.00	\$12,938,705.88	1,033,008	0.04%	97.43%	\$5.80	\$4.881
Jul-25	2,657,585,000	2,731,622,698	97.29%	\$15,413,993.00	\$13,333,050.39	779,447	0.03%	97.32%	\$5.80	\$4.881
Aug-25	2,585,750,000	2,649,626,669	97.59%	\$14,997,350.00	\$12,932,827.77	940,653	0.04%	97.62%	\$5.80	\$4.881
TOTALS (1)	947,564,221,798	974,722,321,434	97.21%	\$2,496,278,024.60	\$2,199,458,225.99	895,888,250	0.09%	97.31%	\$2.63	\$2.257

- (1) - SINCE MAY 1, 1992
(2) - REPRESENTS DU PAGE PUMP STATION, METER TESTING AND CONSTRUCTION PROJECT USAGE
(3) - DOES NOT INCLUDE FIXED COST PAYMENTS

YTD

Aug-24	10,145,104,000	10,373,456,316	97.80%	56,609,680	48,323,652				\$5.58	\$4.658
Aug-25	10,200,776,000	10,470,262,591	97.43%	59,164,501	50,646,973				\$5.80	\$4.837
	55,672,000	96,806,275		\$2,554,820	\$2,323,322					
	0.5%	0.9%		4.5%	4.8%					
Month										
Aug-24	2,723,982,000	2,791,119,391	97.59%	15,199,820	13,098,723				\$5.58	\$4.693
Aug-25	2,585,750,000	2,649,626,669	97.59%	14,997,350	12,932,828				\$5.80	\$4.881
	(138,232,000)	(141,492,722)		(\$202,470)	(\$165,896)					
	-5.1%	-5.1%		-1.3%	-1.3%					
Aug>July										
	(71,835,000)	(81,996,029)		(416,643)	(400,223)					

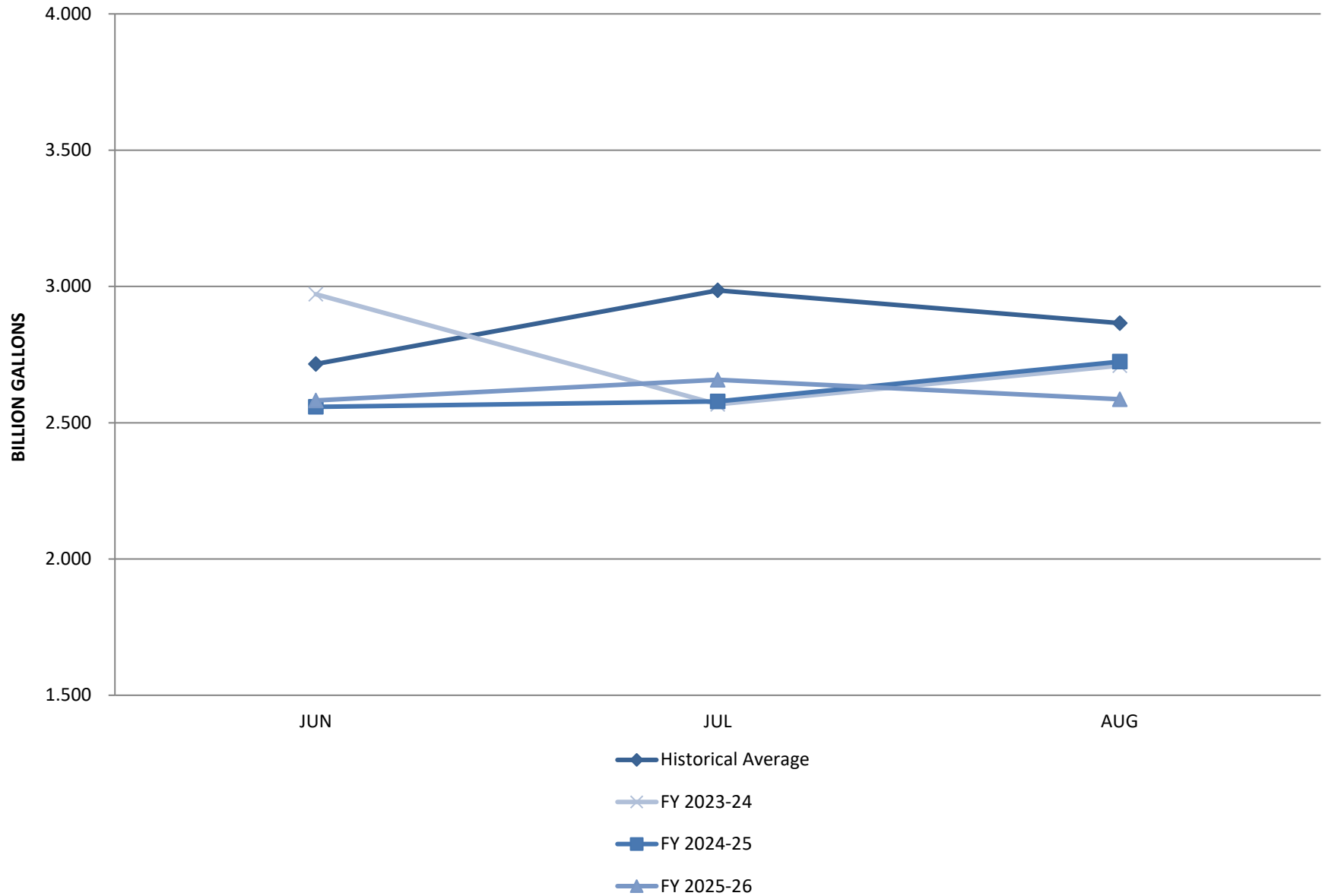
DUPAGE WATER COMMISSION
PWS FACILITY ID# - IL435400
MONTHLY OPERATIONS REPORT
DUPAGE WATER COMMISSION LABORATORY BENCH SHEET RESULTS
AUGUST 2025

DATE	LEXINGTON P.S. SUPPLY			DUPAGE P.S. DISCHARGE							ANALYST INT.
	FREE Cl2 (mg/L)	TURBIDITY (ntu)	O-PO4 (mg/L)	FREE Cl2 (mg/L)	TURBIDITY (ntu)	TEMP (°F)	pH	Fluoride (mg/L)	O-PO4 (mg/L)	P.A.C. (LBS/MG)	
1	1.29	0.07	2.23	1.11	0.07	68	7.2	0.6	2.32	0	KD
2	1.18	0.07	2.08	1.03	0.07	70	7.2	0.6	2.15	0	RC
3	1.25	0.05	2.16	1.09	0.06	71	7.2	0.6	2.16	0	RC
4	1.21	0.04	2.26	1.12	0.05	71	7.2	0.6	2.26	0	KD
5	1.20	0.05	2.27	1.07	0.06	71	7.1	0.5	2.32	0	KD
6	1.33	0.05	2.26	1.09	0.07	72	7.3	0.6	2.20	0	RC
7	1.22	0.06	2.22	1.16	0.07	72	7.2	0.5	2.29	0	RC
8	1.28	0.06	2.19	1.11	0.07	72	7.3	0.5	2.26	0	RC
9	1.22	0.05	2.26	1.11	0.07	73	7.2	0.5	2.29	0	KD
10	1.31	0.06	2.28	1.09	0.07	73	7.2	0.5	2.32	0	KD
11	1.14	0.05	2.20	1.11	0.06	73	7.2	0.6	2.25	0	RC
12	1.20	0.07	2.19	1.29	0.09	72	7.2	0.6	2.20	0	RC
13	1.29	0.06	2.25	1.23	0.06	72	7.2	0.6	2.25	0	KD
14	1.25	0.05	2.22	1.37	0.07	71	7.2	0.6	2.28	0	KD
15	1.23	0.05	2.24	1.28	0.05	71	7.2	0.6	2.27	0	KD
16	1.30	0.06	2.21	1.44	0.07	68	7.2	0.6	2.22	0	RC
17	1.37	0.06	2.21	1.21	0.06	68	7.3	0.5	2.22	0	RC
18	1.34	0.05	2.23	1.45	0.06	66	7.3	0.6	2.21	0	RC
19	1.34	0.06	2.19	1.36	0.06	66	7.2	0.6	2.30	0	KD
20	1.36	0.05	2.18	1.35	0.06	66	7.2	0.6	2.16	0	RC
21	1.39	0.05	2.18	1.38	0.06	66	7.2	0.6	2.19	0	RC
22	1.22	0.05	2.16	1.26	0.13	67	7.3	0.6	2.22	0	RC
23	1.20	0.05	2.21	1.28	0.09	66	7.2	0.6	2.19	0	AM
24	1.29	0.06	2.33	1.31	0.07	66	7.2	0.6	2.20	0	AM
25	1.30	0.05	2.18	1.33	0.06	71	7.2	0.6	2.17	0	RC
26	1.31	0.05	2.19	1.36	0.06	71	7.3	0.5	2.16	0	RC
27	1.23	0.05	2.07	1.25	0.06	67	7.2	0.7	2.20	0	AM
28	1.19	0.06	2.18	1.20	0.06	67	7.2	0.6	2.28	0	AM
29	1.27	0.05	2.23	1.26	0.06	68	7.2	0.6	2.17	0	AM
30	1.18	0.05	2.26	1.30	0.06	67	7.2	0.6	2.20	0	JS
31	1.31	0.06	2.28	1.33	0.07	69	7.2	0.6	2.22	0	JS
AVG.	1.26	0.05	2.21	1.24	0.07	69	7.2	0.6	2.23	0	
MAX.	1.39	0.07	2.33	1.45	0.13	73	7.3	0.7	2.32	0	
MIN.	1.14	0.04	2.07	1.03	0.05	66	7.1	0.5	2.15	0	

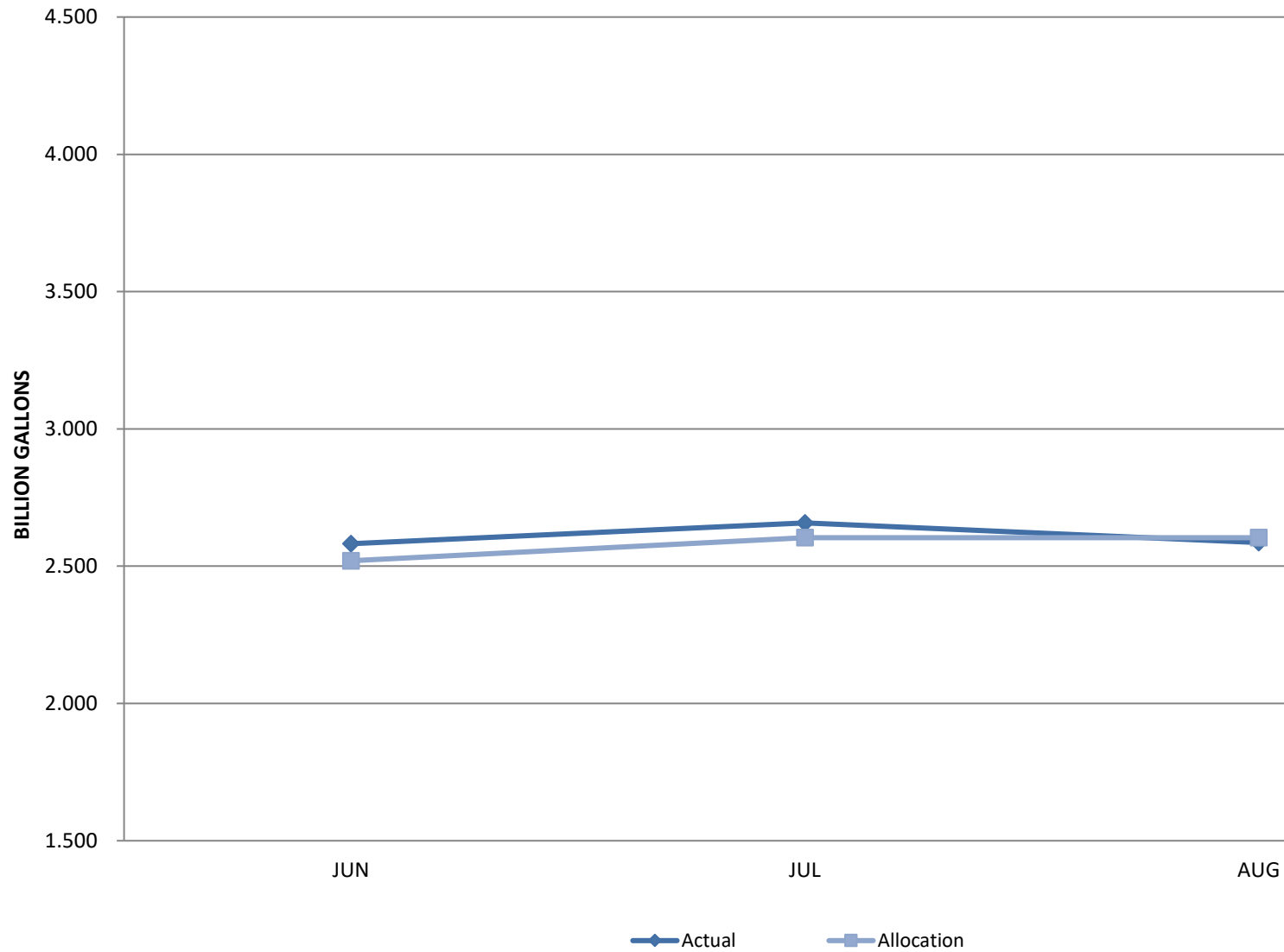
Mike Weed, Operations Supervisor
Illinois ROINC # 186860234

9/5/25
Date

DU PAGE WATER COMMISSION SALES FY 2025-26, 2024-25 & 2023-24 VS. HISTORICAL AVERAGE



DU PAGE WATER COMMISSION SALES FY 2025-26 VS. ALLOCATION





MONTHLY STATUS REPORT

LAN PROJECT #: 128-10031-001

PROJECT: DuPage Water Commission WaterLink Extension Phase II

REPORT DATE: September 8, 2025

MEETING DATE: September 18, 2025

I. Progress through September 8, 2025

A. Field data collection and surveying.

1. Supplemental topography completed along Hill Rd to accommodate revised Montgomery #1 Delivery site configuration. Additional topographic survey completed at proposed chlorination building / future pump station site is complete.
2. Boundary and topographic survey completed at proposed chlorination building site.
3. Additional topographic survey was completed along IL Route 34 and Kendall Point Drive to collect Oswego utility field-locates for requested realignment.
4. Final cadastral surveying work complete.
5. Existing structure rim/invert data collection complete.
 - a) Total of approximately 1,097 structures located with rim/inverts surveyed.
 - b) Rim/invert data collection for 38 additional structures for Fox River re-route to be completed in August/September.
 - c) Awaiting JULIE utility atlases and water/sewer utility atlases from IAWC.
6. Processing of collected Aerial LIDAR data is complete. Additional LIDAR processing for Fox River area and Polo Crossing re-routes is complete.
 - a) 100% of original scope complete. Overall width of data processing increased to facilitate design drawing set-up and minimize future re-work. Increased width processing complete.
 - 1) Additional processing along Wolf's Crossing Rd and Douglas Rd complete.
 - 2) Additional topo processing west of Ogden Falls Blvd. due to ComEd alignment changes complete.
 - 3) Supplemental topo to be conducted along west edge of Polo Crossings development in Oswego for 36-inch re-route south of Wolf's Crossing. Crops prevented traditional topo – processed more aerial IDAR instead.





MONTHLY STATUS REPORT

7. Subsurface Utility Locates

- a) SUE field activities completed.
- b) Scope of additional SUE for Fox River re-route TBD upon receiving processed LIDAR data and utility info from IAWC.

8. Utility Potholing Locates

- a) Additional potholes completed on Naperville electrical duct bank along 75th Street for TW-6 S1.
- b) Over 440 potholes completed along ComEd corridors 100% complete.
- c) Scope of additional potholing for Fox River re-route TBD upon receiving processed LIDAR data and utility info from IAWC.

9. Geotechnical

- a) Total of 193 borings (95%) completed to date in Phase 2 through July, Draft geotechnical report was received end of July.
- b) Additional 15 borings at Kendall Point realignment, Montgomery #1, US30/34, Fox River re-route are pending.
- c) Additional geotechnical borings for Fox River re-route pending final alignment.

10. Cathodic Protection

- a) Soil resistivity testing along project routes complete for cathodic protection design.
- b) Final field data report provided for TW-6 S1.
- c) Draft reports for TW-6 S2 & S3 complete.
- d) AC Mitigation modeling report(s) for ComEd corridor in progress.
- e) Remaining report(s) in progress.

B. Data Collection (as-builts, GIS, design drawings).

- 1. WaterLink Delivery Point proposed site layouts.
- 2. Design team has set initial priority parcels to move to the plat preparation stage.

C. Ongoing Coordination with ComEd.

- 1. Drawings submitted to ComEd 1/23/25 to initiate legal and real estate appraisal process.
 - a) Comments received from ComEd. Regular weekly meetings to discuss and re-confirm the alignment are underway.





MONTHLY STATUS REPORT

2. Draft license agreement sent to DWC for review.
 - a) Negotiations ongoing between DWC and ComEd Real Estate group on license agreement terms.
3. KMZ of alignment and license areas sent to ComEd on 8/7 for real estate process.
4. Final pipeline alignment has received ComEd approval.
 - a) Final drawing submittal in progress to close out ComEd technical review.

D. Land Acquisition

1. 227 of 232 Titles Received
2. 160 total parcels for easement preparation
3. Easement legal descriptions & exhibits
 - a) 130 total prepared to date (81%)
 - b) 60 Appraisal Packages and 40 property negotiations underway.
 - c) School District 308 easement approvals complete after final action July 28.

E. Contract TW-6 Section 1 (Book Rd) in progress.

1. Project advertised for bid on 5/23/35.
2. Pre-bid meeting held on 6/3/25.
3. Bids received on 7/1/25.
4. IEPA construction permit received 2/28/2025.
 - a) Subsequent sampling plan approved to amend the requirement for sampling every 1,200 feet.
 - b) No supplemental permit application is required due to value engineering changes during negotiations. Current construction permit is sufficient.
5. Permit applications with USACE, IDNR, DuPage County Stormwater, City of Naperville, and Naperville Township submitted.
 - a) Comments received from City of Naperville. Comment responses and revised drawings were prepared, including ROV electrical. Revisions resubmitted to the City.
 - 1) Permit resubmittal to Naperville occurred 9/8/25.
 - b) Plans resubmitted to DuPage County DOT on 5/23/25.
 - c) Permits received from USACE, Will County Stormwater, and two Soil & Water Conservation Districts.
 - d) Authorization on bid set design received from DuPage Stormwater. Discussion regarding design changes occurred 8/27/25.





MONTHLY STATUS REPORT

- 1) DuPage Stormwater agreed that design changes are not significant. Revised drawings will be resubmitted to DuPage Stormwater and a permit amendment will be issued after review.
 6. Value engineering redesign to remove/shorten tunnels and remove 48-inch valves on existing pipe has concluded.
- F. Contract TW-6 Section 2 & 3 in progress.
1. Additional section breaks for Sections 2A, 2B, 2C, 3A, 3B, and 3C have been confirmed.
 2. Water transmission main plan and profile design ongoing.
 - a) Revisions in progress to address new ComEd comments.
 - b) Revisions in progress near US 30 crossing.
 3. DWC review comments received and revisions are in progress.
 - a) Revisions complete for Sections 2A and 2B.
 4. 100% Submittal drawings for TW-6 Sections 2A & 2B submitted for DWC review on 9/5/25.
 - a) Project scheduled to advertise for bids on 9/26/25.
 5. Trenchless crossings have been re-evaluated and value engineered similar to the design revisions in progress for TW-6 Section 1.
 6. Drawings submitted to ComEd 1/23/25 to initiate legal and real estate appraisal process.
 - a) Wetlands reports subsequently submitted to ComEd environmental reviewer.
 - 1) Reviews completed by Capacity Planning, Vegetation, and Economic Development w/ no comments.
 - 2) Review comments from Transmission group have been addressed. Drawings addressing additional comments provided on 8/7/25.
 - 3) Revised plan and profile drawings for ComEd final engineering and environmental review are being prepared.
 7. TW-6 Section 3 alignment revisions in progress at Route 34 and Kendall Point Drive.
 - a) Oswego notified design team and DWC of high profile proposed development along pipeline and requested alignment change.
 - b) Oswego field-located existing village utilities in area of alignment change for design team to survey and evaluate route options.
 - c) Design underway. Final design pending geotechnical investigation.





MONTHLY STATUS REPORT

8. Fox River realignment (Section 3C) design is in progress.
 - a) Final alignment pending completion of field work, utility data collection, and geotechnical work.
 - 1) Additional wetlands delineation and environmental surveys are required, including updates to various environmental reports.
9. Permit applications / design submittals are being prepared for various agencies, including IDOT and railroads.
 - a) IDOT District 1 plan review applications have been submitted and IDOT has responded without comment.
 - 1) Contractor will need to submit bonds in accordance with IDOT response letter.
 - b) TW-6 Section 2 City of Naperville plan review submitted and comments received from the City. Work is ongoing to address the City of Naperville comments.
 - 1) Resubmittal to Naperville for Sections 2A and 2B has been made.
 - c) Plan review submittals made to four gas pipeline companies (west of 95th & Wolf's Crossing).
 - 1) Received confirmation of receipt, comments, and/or questions from all four.
 - d) Permit submittal to CN Railroad has been submitted and received.
 - 1) CN license agreement approved and received.
 - e) Permit application to BNSF Railroad has been submitted.
 - 1) BNSF Railroad returned comments and resubmittal has been made on 6/2/25.
 - f) Permit application to OmniTrax/Illinois Railway has been submitted.
 - 1) OmniTrax returned comments on 6/23/25 requesting additional documents. Ongoing coordination to provide Certificate of Insurance from DWC. Draft license agreement received for review.
 - g) Construction permit received from IEPA.
 - 1) A supplemental IEPA construction permit application will be submitted to reflect the ComEd changes. IEPA noted that this review time would be approximately 10 days.
 - h) US Fish and Wildlife have given us a tree clearing restriction from April 1 – September 30. Requirements will be added to the plans/specs. Exceptions can be requested on a case by case basis. USFWS will likely require a survey of trees to be removed by exception to ensure no bats are living in the tree. Likelihood of exception being granted increases further from Fox River.





MONTHLY STATUS REPORT

G. Contract FW-1 Section 1 & 2 in progress.

1. 90% Submittal Drawings submitted to DWC 12/13/24.
2. Water transmission main plan and profile design 98% complete and have gone through internal QAQC.
 - a) Easement through Polo Crossings development.
 - 1) Met with developer & Oswego Aug 6 – appears that easement donation along west property line will work for 36-inch water main there.
 - 2) Awaiting final CAD drawings from Developer to complete pipeline design through the development.
 - b) Collins Rd alignment west of Oswego #2.
 - 1) Resubmitted to Kendall County on 5/19/25 and alignment approval received on 6/18/25 from Fran Klass.

H. Contract FW-1 Section 3 in progress.

1. Water transmission main plan and profile design ongoing.
2. 90% Submittal Drawings Submitted to DWC 12/22/24.
3. Ongoing coordination with IDOT District 3 on IL Route 71 project overlap.
4. IDOT District 3 comments received in June.
 - a) The most pressing comment is the direction that work cannot proceed until the Route 71 widening project is complete in Spring 2027. Further discussion with IDOT needed.
 - b) Meeting occurred Monday 8/11/25 with IDOT District 3 to discuss comments.

I. Contract FW-1 Section 4 in progress.

1. Water transmission main plan and profile design ongoing.
2. 90% Submittal Drawings submitted to DWC 12/13/24.
3. IEPA and Kendall County permit submittals in progress.
4. Permit submittal made to BNSF Railroad on 4/9/25.
 - a) Resubmittal to address comments made on 6/2/25.
 - b) DWC reviewing draft license agreement.





MONTHLY STATUS REPORT

J. Contract MS-22 Meter Stations in progress.

1. Design ongoing.
2. 90% Submittal drawings submitted to DWC 4/18/25.
 - a) Addressing 90% comments from DWC and Burns & McDonnell.
3. Site plan updates ongoing to account for revised WaterLink site layouts.
4. Montgomery requested the building permit applications for meter stations be prioritized.
5. Oswego requested coordination on any updates to incorporate into their design documents.
6. Various options for short-term replacement of chemical feed building under discussion.
7. New relocated/updated site plan for chemical feed building underway based on newly identified site.

II. Scope Changes – Phase II (to date)

A. Design of Additional Architectural Treatments for WaterLink Meter Stations.

1. Fee: Pending (to be submitted to DWC for review/approval).

B. ComEd revisions based on unexpected new comments.

1. Fee: Pending (to be submitted to DWC for review/approval).

C. Fox River Crossing alternate route.

1. Fee: Pending (to be submitted to DWC for review/approval).

D. Permit Fees

1. Fee: Pending (fees being tracked and submitted w/ invoices).

III. Financials

A. Total Phase II Contract: \$19,956,942

1. Fee Expended through August 31, 2025:

a) Total: \$17,911,586 (89.8%)

- 1) Basic Services: \$11,846,002 (59.4%)
- 2) Additional Services: \$6,065,584 (30.4%)





MONTHLY STATUS REPORT

IV. Completed Workshops, Meetings and Visits (August -September)

- A. ComEd Comment Review and Technical Discussion Meetings – Various
- B. IDOT District 3 meeting – August 11, 2025
- C. TW-6/25 Section 1 Negotiation Meeting Benchmark – August 11, 2025
- D. Bid Packages Meeting - August 18, 2025
- E. WaterLink Workshop – August 21, 2025
- F. Aurora Coordination Meeting – August 26, 2025
- G. DuPage Stormwater Addendum Discussion – August 27, 2025
- H. Bid Packaging Follow-Up Meeting – August 28, 2025
- I. Pump Station Review Meeting – September 3, 2025
- J. WaterLink Workshop – September 8, 2025

V. Upcoming Tasks & Meetings

- A. Finalize ComEd alignment modifications, including alternate river crossing route.
- B. Monthly Progress Meeting – September 18, 2025
- C. TW-6/25 Section 2A+2B Advertise for Bid – September 26, 2025
- D. TW-6/25 Section 2A+2B Pre-Bid Meeting – October 14, 2025
- E. Weekly Check-In Meetings – Various
- F. Schedule Coordination with Burns & McDonnell – Various
- G. ComEd Coordination Meetings – As Needed
- H. Phase II geotechnical field work – As Needed
- I. Permit submittals to various review agencies.



DuPage Water Commission WaterLink Extension Phase II Design Schedule																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
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					May 27	May 4	May 11	May 18	May 25	Jun 1	Jun 8	Jun 15	Jun 22	Jun 29	Jul 6	Jul 13	Jul 20	Jul 27	Aug 3	Aug 10	Aug 17	Aug 24	Aug 31	Sep 7	Sep 14	Sep 21	Sep 28	Oct 5	Oct 12	Oct 19	Oct 26	Nov 2	Nov 9	Nov 16	Nov 23	Nov 30	Dec 7	Dec 14	Dec 21	Dec 28	Jan 4	Jan 11	Jan 18	Jan 25	Feb 1	Feb 8	Feb 15	Feb 22	Mar 1	Mar 8	Mar 15	Mar 22	Mar 29	Apr 5	Apr 12	Apr 19	Apr 26	May 3	May 10	May 17	May 24	Jun 7	Jun 14	Jun 21	Jun 28	Jul 5	Jul 12	Jul 19	Jul 26																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
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Cash Flow/Invoicing Forecast_ Phase II Services
DuPage Water Commission
WaterLink Extension
September 2025

	Activity through April 26, 2024	Activity through May 31, 2024	Activity through June 30, 2024	Activity through July 31, 2024	Activity through August 31, 2024	Activity through September 30, 2024	Activity through October 31, 2024	Activity through November 30, 2024	Activity through December 31, 2024	Activity through January 31, 2025	Activity through February 28, 2025	Activity through March 31, 2025	Activity through April 30, 2025	Activity through May 31, 2025	Activity through June 30, 2025	Activity through July 31, 2025	Activity through August 31, 2025	Planned	Planned	Planned	Planned	Planned	Planned				
Description	May 2024	June 2024	July 2024	August 2024	September 2024	October 2024	November 2024	December 2024	January 2025	February 2025	March 2025	April 2025	May 2025	June 2025	July 2025	August 2025	September 2025	October 2025	November 2025	December 2025	January 2026	February 2026	March 2026				
Basic Services	\$ 625,960	\$ 876,344	\$ 980,607	\$ 1,011,525	\$ 994,029	\$ 993,016	\$ 999,176	\$ 1,117,315	\$ 1,116,854	\$ 745,163	\$ 499,762	\$ 498,028	\$ 378,063	\$ 258,692	\$ 254,130	\$ 248,300	\$ 248,197	\$ 258,397	\$ 258,397	\$ 133,205	\$ 8,013	\$ 8,013	\$ 8,013				
Additional Services	\$ 545,788	\$ 1,126,706	\$ 586,700	\$ 561,317	\$ 594,996	\$ 64,786	\$ 149,871	\$ 438,311	\$ 350,417	\$ 283,233	\$ 83,116	\$ 205,871	\$ 183,722	\$ 253,965	\$ 236,036	\$ 198,526	\$ 203,231	\$ 318,942	\$ 318,942	\$ 318,942	\$ 318,942	\$ 47,692	\$ 47,692				
MONTHLY SUBTOTAL	\$ 1,171,748	\$ 2,003,050	\$ 1,567,307	\$ 1,572,842	\$ 1,589,025	\$ 1,057,802	\$ 1,149,047	\$ 1,555,626	\$ 1,467,271	\$ 1,028,396	\$ 582,878	\$ 703,899	\$ 561,785	\$ 512,657	\$ 490,166	\$ 446,826	\$ 451,428	\$ 577,339	\$ 577,339	\$ 452,147	\$ 326,955	\$ 55,705	\$ 55,705				
SUBTOTAL	\$6,314,947				\$5,351,501				\$8,290,495																		
IGA ESCROW DEPOSITS	\$7,764,000				\$5,532,000				\$6,660,942																		
TOTAL PHASE II CONTRACT																	\$						19,956,942				



Progress Report

Date: Sept 3, 2025
Project: Lake Michigan Water Supply Initiative
To: Paul May, General Manager, DuPage Water Commission
Ramesh Kanapareddy, Executive Director, NSMJAWA
From: Pete Mulvaney, Consor
Reviewed By: Guy Carpenter, Woolpert
Re: July progress

Scope of Work

DuPage Water Commission and the Northwest Suburban Municipal Joint Action Water Authority have directed their technical advisors to complete a comprehensive plan for execution of the Lake Michigan Water Supply Initiative, inclusive of:

1. Business Case Analysis
2. Communications Plan
3. Risks Assessment tools
4. Governance examples
5. Project Delivery approach
6. Program Management approach

In addition, the advisory team will further refine the project boundaries.

Progress

Progress in August consists of:

- Weekly status meetings with DWC General Manager and NSMJAWA Executive Director
 - Prepared ppt for August DWC Board Meeting (not presented)
 - Prepared and presented overview and progress ppt to NSMJAWA board of directors
 - Prepared ppt for September DWC Board Meeting
 - Business Case Tool updates
 - Initial BCA runs and results
 - Completed initial stakeholder interview and summary report (available through ED Paul May)
 - Communications Final draft:
 - o Five things to know
-



- Fact sheet
 - Frequently Asked Questions
- Drafted case studies of large program governance models
- Prepared and populated risk register with impact, likelihood, and mitigation strategies
- Developed draft scope of work for Program Manager
- Completed project delivery technical memorandum recommending collaborative delivery
- Seaworks completion of field work to collect marine survey data of intake location
- Scoping easement and ROW database development

Forecast

In September, tasks associated with the Comprehensive Plan will include:

- Advance and present the Business Case Analysis (BCA)
 - Provide results of analysis for select scenarios
 - Update BCA for additional scenarios as needed
- Communications Framework
 - Prepare for additional opinion research
 - Conduct additional interviews as directed
 - Release communications materials as directed
- Risk and Delivery Approach
 - Limited activity until after direction from September Board and EC meetings
- Governance
 - Limited activity until after direction from September Board and EC meetings
- Draft findings from Seaworks marine survey



Resolution #: R-66-25

Account: 01-80-852010

Approvals: *Author / Manager / Finance / Admin*

JL JML CAP PDM

REQUEST FOR BOARD ACTION

Date: 8/14/2025

Description: **Award of a Contract for the Construction of the West Transmission Main along Book Road From 75th Street to the ComEd R.O.W. (Contract TW-6/25 Section 1 (Book Road))**

Agenda Section: Engineering & Construction

Originating Department: Engineering

WaterLink design efforts continue to progress with the goal of advertising for bid each of the five pipeline construction packages along with another for the construction of the meter stations by the end of the 2025 calendar year.

The design for the first such construction package, TW-6/25 Section 1 (Book Road), was completed earlier this summer and consists of approximately three miles of 54" pipeline along Book Road in Naperville, from a connection to the existing Commission distribution network at 75th Street to a point just south of 95th Street near Frontier Park. The project was advertised for bid on May 23rd, with the corresponding bid opening held on July 1st. A total of three bids were received with the Joint Venture of Benchmark Construction Co., Inc. and D. Construction, Inc. (Joint Venture) identified as the apparent low bidder. The summary of the bid results can be seen in the table below:

BID ALTERNATES	D. Construction, Inc. & Benchmark Construction Co, Inc.	NPL Construction Co.	Precision Pipeline, LLC.
Alternate A (54-inch Steel) Total Bid Price:	\$69,149,230.00	\$82,439,906.00	\$254,371,642.14
Alternate B (54-inch PCCP) Total Bid Price:	\$67,148,000.00	*	*
Alternate C (48-inch Steel) Total Bid Price:	\$68,856,910.00	\$81,697,906.00	\$249,102,700.14
Alternate D (48-inch PCCP) Total Bid Price:	\$66,258,510.00	*	*

Based on the results of the bid opening, installation of 54-inch PCCP has been identified as the desirable alternative. Unfortunately, the bids submitted were all in excess of the project estimate, due in large part to the cost of the trenchless portions of the work (tunnels were designed at three creek crossings as well as four intersections). Because of this budget overage, Commission Staff and the design team of LAN/Stanley/Robinson have conducted negotiations with the apparent low bidder to

re-design portions of the work in order to convert trenchless installation locations to open-cut installations (where feasible) and to minimize the depth of any trenchless installation locations that could *not* be converted. Because these potential changes impact the maintenance of traffic at the aforementioned intersections, additional coordination with City of Naperville Staff was also conducted to ensure that they are in support of the proposed changes.

As a result of the post-bid negotiations and coordination with the City of Naperville, Change Order No. 01 has been developed and is brought forward for Board approval under Resolution R-67-25 (submitted under separate cover) which will propose to significantly reduce the contract scope and associated cost. However, prior to approving Change Order No. 01, an initial contract with the Joint Venture must first be approved by the Board. Resolution R-66-25 would approve a contract with the Joint Venture for the construction of the TW-6/25 Section 1 (Book Road) Project in the amount of \$67,148,000.00.

The Commission has worked with Benchmark Construction on a significant number of projects over the years and the two parties maintain a positive working relationship. Though the Commission has not previously worked with D. Construction, they *have* previously worked with the WaterLink Communities who have provided positive feedback.

Recommended Motion:

To adopt Resolution R-66-25.

DUPAGE WATER COMMISSION

RESOLUTION NO. R-66-25

A RESOLUTION AWARDING A CONTRACT FOR THE CONSTRUCTION OF
THE TW-6/25 SECTION 1 (BOOK ROAD) CONTRACT

WHEREAS, the Commission was formed and exists pursuant to the Water Commission Act of 1985, 70 ILCS 3720/0.01 et seq., and Division 135 of Article 11 of the Illinois Municipal Code, 65 ILCS 5/11-135-1 et seq., for the purpose of securing an adequate source and supply of water for its customers; and

WHEREAS, the Village of Montgomery (“Montgomery”), the Village of Oswego (“Oswego”) and the United City of Yorkville (“Yorkville”) (Oswego, Montgomery and Yorkville are collectively referred to herein as the “Municipalities”) desire to supply Lake Michigan water to their residents by connecting to the Commission’s waterworks system;

WHEREAS, the Commission and the Municipalities previously entered into intergovernmental agreements related to the funding of the required connection facilities; and

WHEREAS, pursuant to Article VIII, Section 5 of the Commission’s By-Laws, the DuPage Water Commission (the “Commission”) invited proposals for the Construction of the TW-6/25 Section 1 (Book Road) Contract; and

WHEREAS, bids for Contract TW-6/25 Section 1 (Book Road) were received on July 1, 2025; and

WHEREAS, the Commission has reviewed the proposals received and determined that the proposal of the Joint Venture of Benchmark Construction Co., Inc. and D. Construction, Inc. (Joint Venture) was the most favorable to the interests of the Commission; and

NOW, THEREFORE, BE IT RESOLVED by the Board of Commissioners of the DuPage Water Commission as follows:

SECTION ONE: The foregoing recitals are hereby incorporated herein and made a part hereof as findings of the Board of Commissioners of the DuPage Water Commission.

SECTION TWO: The Board of Commissioners of the DuPage Water Commission hereby approves the Contract for the Construction of the TW-6/25 Section 1 (Book Road) Project in the amount of \$67,148,000.00, attached hereto as Exhibit A, conditioned upon the receipt of all contractually required documentation, and authorizes the Chairman to execute the agreement on behalf of the DuPage Water Commission and to take whatever steps necessary to effectuate the terms of said agreement.

SECTION THREE: This Resolution shall be in full force and effect from and after its adoption.

	Aye	Nay	Absent	Abstain
Cuzzone, N.				
Fennell, J.				
Greaney, S.				
Honig, A.				
Noonan, T.				
Novotny, D.				
Pruyn, J.				
Romano, K.				
Russo, D.				
Saverino, F.				
Suess, P.				
Van Vooren, D.				
Zay, J.				

ADOPTED THIS _____ DAY OF _____, 2025.

James F. Zay, Chairman

ATTEST:

Danna Mundall, Clerk

Board/Resolutions/2025/R-66-25.docx

EXHIBIT A

DuPage Water Commission

Contract for the Construction of:

West Transmission Main Along Book Road

From 75th Street to ComEd R.O.W.

Contract TW-6/25 Section 1 (Book Road)



VOLUME I

CONTRACT DOCUMENTS

DuPAGE WATER COMMISSION
CONTRACT FOR THE CONSTRUCTION OF
CONTRACT TW-6/25 SECTION 1 (BOOK ROAD)

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3. Schedule of Prices
4. General Conditions of Contract
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6. Contract Drawings
7. Specifications
8. Form of Performance Bond
9. Form of Labor and Material Payment Bond
10. Form of Maintenance/Warranty Bond
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**CONTRACT AGREEMENT BETWEEN
DuPAGE WATER COMMISSION
AND
D. CONSTRUCTION, INC. &
BENCHMARK CONSTRUCTION CO., INC.
FOR THE CONSTRUCTION OF
CONTRACT TW-6/25 SECTION 1 (BOOK ROAD)**

CONTRACT AGREEMENT BETWEEN
DUPAGE WATER COMMISSION
AND
D. CONSTRUCTION, INC. &
BENCHMARK CONSTRUCTION CO., INC.
FOR THE CONSTRUCTION OF
CONTRACT TW-6/25 SECTION 1 (BOOK ROAD)
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CONTRACT AGREEMENT BETWEEN

DUPAGE WATER COMMISSION

AND

D. CONSTRUCTION INC. & BENCHMARK CONSTRUCTION CO., INC.

FOR THE CONSTRUCTION OF

CONTRACT TW-6/25 SECTION 1 (BOOK ROAD)

THIS CONTRACT AGREEMENT, made as of this 21st day of August, 2025, by and between the DuPage Water Commission, 600 East Butterfield Road, Elmhurst, Illinois 60126-4642, a public corporation, and D. Construction Inc. and Benchmark Construction Co., Inc., a Joint Venture,

WITNESSETH:

In consideration of the mutual promises contained in this Contract Agreement, it is agreed by and between Owner and Contractor as follows:

ARTICLE I
THE WORK

1.1 Performance of the Work

Contractor shall, at its sole cost and expense:

1. Labor, Equipment, Materials, and Supplies. Provide, perform, and complete at the Work Site and in the manner described and specified in this Contract all necessary work, labor, services, transportation, equipment, materials, apparatus, machinery, tools, fuels, gas, electric, water, waste disposal, information, data, and other means and items necessary for the design, if any, construction, and installation of the *Contract TW-6/25 Section 1 (Book Road)* improvements together with related attachments, equipment, and appurtenances thereto.

2. Permits. Unless otherwise stated in the Special Conditions of Contract, procure and furnish all permits, licenses, and other governmental approvals and authorizations necessary in connection therewith.

3. Bonds and Insurance. Procure and furnish all Bonds and all certificates and policies of insurance specified in this Contract.

4. Taxes. Pay all applicable federal, state, and local taxes.

5. Miscellaneous. Do all other things required of Contractor by this Contract.

CONTRACT AGREEMENT

6. Quality. Provide, perform, and complete all of the foregoing in a proper and workmanlike manner, consistent with the highest standards of professional and construction practices and in full compliance with, and as required by or pursuant to, this Contract, and with the greatest economy, efficiency, and expedition consistent therewith.

1.2 Contract Documents

The Contract Documents consist of the following component parts, all of which are attached to this Contract Agreement and are, by this reference, made a part of this Contract Agreement as though fully set forth herein:

1. Contractor's Certification;
2. Schedule of Prices;
3. General Conditions of Contract;
4. Special Conditions of Contract;
5. Contract Drawings;
6. Specifications;
7. Form of Performance Bond;
8. Form of Labor and Material Payment Bond; and
9. Addenda Nos. [].

Engineer may, during construction, furnish to Contractor such additional Contract Drawings and Specifications or such other explanations as Engineer may consider necessary to illustrate or explain the Work in further detail. Contractor shall comply with the requirements of all such additional Contract Drawings and Specifications or other explanations, all of which shall be considered part of the Contract Documents and shall not be considered as indicating additional Work.

1.3 Interpretation of Contract Documents

A. Definitions. Whenever used in this Contract Agreement or in the Contract Documents:

1. General Definitions. Except for the terms specially defined in Paragraph 1.3A2 below, all capitalized terms shall have the meanings given to them in Article VII of the General Conditions of Contract.

2. Special Definitions. The following capitalized terms shall have the following meanings:

a. Contractor. The Person first identified above with whom Owner has executed this Contract Agreement and its duly authorized officers, employees, agents, and representatives.

b. Engineer. Burns & McDonnell, Lockwood, Andrews and Newnam, Inc. (LAN), Robinson Engineering, Ltd. (REL), or such additional or

CONTRACT AGREEMENT

different Person as Owner may from time to time designate in writing to perform any or all of the functions of the Engineer under this Contract as well as the duly authorized officers, employees, agents, and representatives of any such Person.

c. Owner. The DuPage Water Commission and its duly authorized officers, employees, agents, and representatives.

d. Work. All matters described, exhibited, contemplated, implied, or embraced in this Article I of this Contract Agreement and in Article I of the General Conditions of Contract, including all risks and changes in the Work that Contractor is responsible for dealing with under this Contract without any equitable adjustment in the Contract Price or Contract Time, and all matters described, exhibited, contemplated, implied, or embraced in any Change Order issued pursuant to Section 2.1 of the General Conditions of Contract.

e. Work Site. From the intersection of Book Road and 75th St. in the City of Naperville, Book Road south in Unincorporated Naperville Township and Unincorporated Wheatland Township and the City of Naperville south of 95th Street to the southern limits of the Work as described in the Contract Documents.

f. Owner's Representative. Individual or firm appointed to or assigned by Owner to be its on-site representative under this Contract, to exercise certain power on behalf of the Owner and Engineer and to undertake certain contract administration activities as specifically outlined in the Contract Agreement.

B. Rules of Interpretation. This Contract shall be interpreted so that:

1. Requirements Cumulative. Each requirement imposed on Contractor shall be cumulative of every other requirement imposed on Contractor, and any Work required to be performed by any one component part of this Contract shall be performed to the same extent as if required by all component parts of this Contract.

2. Details to be Assumed. The Work shall be provided, performed, and completed in every detail whether or not every item of detail is particularly set forth in the Contract Documents, including work reasonably inferable from the Contract Documents.

3. Priority of Contract Provisions. In the event of a discrepancy, error, omission, ambiguity, or conflict in the application or interpretation of any of the provisions of this Contract, the terms of this Contract Agreement and of the General Conditions of Contract shall govern over the terms and provisions of all other Contract Documents.

4. Engineer's Interpretation. Subject to Paragraphs 1.3B1, B2, and B3 above, Engineer shall determine which provision or provisions of this Contract

CONTRACT AGREEMENT

Agreement and the Contract Documents best promotes or promote the overall objectives, and best fulfill the intents and purposes, of this Contract, and such provision or provisions shall govern. Such determination of Engineer shall be final.

C. Contractor's Duty to Report Discrepancies. Contractor shall carefully review this Contract Agreement and each of the Contract Documents before performing the Work, and each part thereof, and shall promptly call to the attention of Engineer any discrepancy, error, omission, ambiguity, or conflict that may exist among any of the component parts of this Contract or among any of the provisions of any one of such component parts before proceeding with any part of the Work affected by such discrepancy, error, omission, ambiguity, or conflict. Contractor shall be responsible for all corrective Work required resulting from Contractor's failure to give such notice and shall bear all damages and costs associated therewith, arising therefrom, or resulting from such matters first discovered during the progress of the Work, including, but not limited to, damages or costs resulting from, arising out of, or in any way related to, increases in time-related costs; increases in costs of labor, equipment, materials, or supplies; costs of additional personnel; costs of additional equipment; costs of additional premium time for personnel or equipment; lower labor productivity; lost profits or alternative income; effects on other contracts; and costs of demobilization and remobilization. Information pertaining to subsurface, underground or other concealed conditions or obstructions, soils analysis, borings, test pits, buried structures, utility locations or conditions, conditions of existing structures, and similar site information or data and other investigations shown or indicated on the Contract Drawings, provided by Owner or Engineer, or otherwise made available to Contractor is not part of this Contract and, therefore, any discrepancy, error, omission, ambiguity, or conflict in such site information or data does not constitute a discrepancy, error, omission, ambiguity, or conflict in this Contract.

ARTICLE II **CONTRACT TIME**

2.1 Commencement Date

Contractor shall commence the Work immediately upon execution of this Contract Agreement by Owner.

2.2 Completion Date

Contractor shall diligently and continuously prosecute the Work from the Commencement Date at such a rate as will allow the Work to be fully provided, performed, and completed in full compliance with, and as required by or pursuant to, this Contract. The Work shall be completed in full compliance with this Contract, not later than December 31, 2026.

CONTRACT AGREEMENT

2.3 Time of the Essence

The time of commencement, rate of progress, and time of completion are of the essence of this Contract.

ARTICLE III CONTRACTOR'S WARRANTIES AND REPRESENTATIONS

3.1 Warranties and Representations

In order to induce Owner to enter into this Contract, Contractor hereby warrants and represents to Owner as follows:

A. Review of Contract. Contractor has carefully examined, reviewed, and accepted this Contract Agreement and all of the Contract Documents prior to submission of its Bidder's Proposal and execution of this Contract and there are no discrepancies, errors, omissions, ambiguities, or conflicts in this Contract that are material to Contractor's provision, performance, or completion of the Work, the Contract Price or the Contract Time that have not already been clarified in writing by Owner to the satisfaction of Contractor. For claims based upon discrepancies, errors, omissions, ambiguities, or conflicts in this Contract, Contractor shall hereafter have no claim for payment or compensation in excess of the Contract Price based upon discrepancies, errors, omissions, ambiguities, or conflicts in this Contract. Contractor shall be entitled only to a possible extension of the Contract Time, if applicable, as provided in this Contract and then only in those cases where Contractor can show that such discrepancies, errors, omissions, ambiguities, or conflicts (1) could not have been discovered by Contractor prior to execution of this Contract or prior to the performance of any of the Work affected by such discrepancy, error, omission, ambiguity, or conflict and (2) has caused an unavoidable delay. Information pertaining to subsurface, underground or other concealed conditions or obstructions, soils analysis, borings, test pits, buried structures, utility locations or conditions, conditions of existing structures, and similar site information or data and other investigations shown or indicated on the Contract Drawings, provided by Owner or Engineer, or otherwise made available to Contractor is not part of this Contract and, therefore, shall not constitute the basis for claims based upon discrepancies, errors, omissions, ambiguities, or conflicts in this Contract.

B. Investigation of Work Site. Contractor has had a sufficient opportunity to conduct a thorough inspection and investigation of the Work Site and the surrounding area and has completed such inspection and investigation to its satisfaction. Contractor has included in the Contract Price allowances and contingency amounts for difficulties or obstructions that may arise or be encountered in the performance of the Work, including without limitation adverse weather conditions, equipment breakdowns, subsurface, underground or other concealed conditions or obstructions, buried structures, utility locations or conditions, adverse soil conditions, and changed site conditions due to work by other contractors, and Contractor hereby waives all claims for, and hereafter shall have no claim for, payment or compensation in excess of the Contract Price based upon

CONTRACT AGREEMENT

such difficulties or obstructions, or conditions at the Work Site or in the surrounding area except as expressly provided, and only to the limited extent set forth, in Sections 2.1 through 2.3 of the General Conditions of Contract. Contractor is responsible for dealing with conditions found at, and in the vicinity of, the Work Site, including subsurface, underground or other concealed conditions or obstructions, buried structures, utility locations or conditions, adverse soil conditions, changed conditions due to work by other contractors, and similar site conditions without any equitable adjustment in the Contract Price except as expressly provided, and only to the limited extent set forth, in Sections 2.1 through 2.3 of the General Conditions of Contract.

C. Authorization; Enforceable Obligations. This Contract constitutes the legal, valid, and binding obligation of Contractor, is fully enforceable against Contractor in accordance with its terms, will not violate any judgment, Law, or organizational or operating document and will not cause or constitute a default under any contractual obligation of Contractor or any lien, charge, encumbrance, or security interest upon any assets of Contractor.

D. Contractor's Certification. All the facts and information submitted by Contractor in connection with this Contract and its procurement are true and correct in all respects and, in particular, the statements contained in Contractor's Certification are true and correct.

E. Technical Ability to Perform. Contractor is sufficiently experienced and competent, and has the necessary capital, facilities, plant, organization, and staff, to provide, perform, and complete the Work in full compliance with, and as required by or pursuant to, this Contract.

F. Financial Ability to Perform. Contractor is financially solvent, and Contractor has the financial resources necessary to provide, perform, and complete the Work in full compliance with, and as required by or pursuant to, this Contract.

G. Time. Contractor is ready, willing, able, and prepared to begin the Work on the Commencement Date and the Contract Time is sufficient time to permit completion of the Work in full compliance with, and as required by or pursuant to, this Contract for the Contract Price, all with due regard to all natural and man-made conditions that may affect the Work or the Work Site and all difficulties, hindrances, and delays that may be incident to the Work.

H. Acceptance of Allocation of Risks and Changes. Contractor acknowledges and agrees that risks are inherent in the Work of this Contract and changes are to be expected. Contractor acknowledges that this Contract contains specific allocations of responsibility for such risks and changes. Contractor acknowledges, agrees to, and accepts such risks and changes that are allocated to it and that Contractor is responsible for dealing with under this Contract without any equitable adjustment in the Contract Price or Contract Time.

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I. No Collusion. The only Persons interested in this Contract as principals are those disclosed as such in the Bidder's Sworn Acknowledgment submitted to Owner by Contractor, and this Contract is made without collusion with any other Person.

J. No Default. Contractor is not in arrears to Owner upon any debt or contract and is not a defaulter as surety, contractor, or otherwise to any Person.

K. Not Barred. Contractor is not barred by law from contracting with Owner or with any unit of state or local government, and neither Contractor nor any Person affiliated with Contractor or that has an economic interest in Contractor or that has or will have an interest in the Work or will participate, in any manner whatsoever, in the Work is acting, directly or indirectly, for or on behalf of any Person, group, entity or nation named by the United States Treasury Department as a Specially Designated National and Blocked Person, or for or on behalf of any Person, group, entity or nation designated in Presidential Executive Order 13224 as a person who commits, threatens to commit, or supports terrorism, and neither Contractor nor any Person affiliated with Contractor or that has an economic interest in Contractor or that has or will have an interest in the Work or will participate, in any manner whatsoever, in the Work is, directly or indirectly, engaged in, or facilitating, the Work on behalf of any such Person, group, entity or nation.

L. Taxes and Benefits. Contractor has excluded from the Contract Price all state and local sales, use, and excise taxes. Contractor has included in the Contract Price, and has or will pay or cause to be paid out of the Contract Price, all other applicable federal, state, and local taxes of every kind and nature applicable to the Work as well as all taxes, contributions, and premiums for unemployment insurance, old age or retirement benefits, pensions, annuities, or other similar benefits for Contractor's and its Subcontractors' employees.

M. Patent Costs. Contractor has included in the Contract Price, and has or will pay or cause to be paid out of the Contract Price, all costs, royalties, and fees arising from the use on, or the incorporation into, the Work of patented equipment, materials, supplies, tools, appliances, devices, processes, or inventions.

3.2 Affirmation of Other Warranties and Representations

In addition to the foregoing warranties and representations, Contractor hereby acknowledges that Contractor has carefully read, reviewed, and understood, and hereby agrees to honor, the Warranty of the Work contained in Article III of the General Conditions of Contract as well as all other warranties and representations set forth in the Contract Documents.

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ARTICLE IV FINANCIAL ASSURANCES

4.1 Bonds

A. Bonds Required. Contemporaneous with Contractor's execution of this Contract Agreement, Contractor shall provide a Performance Bond, a Labor and Material Payment Bond, and a Maintenance/Warranty Bond in the forms included in the Contract Documents, from a surety company licensed to do business in the State of Illinois with a general rating of A minus and a financial size category of Class X or better in Best's Insurance Guide, each in the penal sum of the Contract Price, and such other bonds as and when required by Owner. Contractor shall, at all times while providing, performing, or completing the Work, including, without limitation, at all times while repairing, correcting, or replacing all or any part of the Work that is defective, damaged, flawed, unsuitable, nonconforming, or that fails to meet warranty subject to correction by Contractor pursuant to Section 3.1 or Section 3.2 of the General Conditions of Contract, maintain and keep in force, at Contractor's expense, the Bonds required hereunder. All bonds provided by the Contractor and its subcontractors shall include a provision guarantying performance of the prevailing wage clause contained in the Contract. The Contractor shall insert into each subcontract a requirement that not less than the prevailing rate of wages shall be paid to all laborers, workers and mechanics performing work on the project and a requirement that each subcontractor insert a comparable requirement into each lower tiered subcontract.

B. No Release of Bond Obligations. No changes, modifications, alterations, omissions, deletions, additions, extensions of time, or forbearances on the part of either Owner or Contractor to the other in or to the terms of this Contract, in or to the Contract Drawings or Specifications, in or to the schedules, methods, or manner of performance of the Work, in or to Owner-furnished facilities, equipment, materials, services, or sites, or in or to the mode or manner of payment therefor, shall operate in any way to release Contractor or any surety or affect the obligation of either of them under any Bond required to be provided by Contractor. All notice of any and all of the foregoing changes, modifications, alterations, omissions, deletions, additions, extensions of time, or forbearances, and all notice of any and all defaults by Contractor, and all notice of Owner's termination of Contractor shall be waived by every surety under every Bond provided pursuant to this Contract.

4.2 Insurance

A. Insurance Required. Contemporaneous with Contractor's execution of this Contract Agreement, Contractor shall provide certificates and policies of insurance evidencing the insurance coverages set forth in Article IV of the General Conditions of Contract and Section 4 of the Special Conditions of Contract. For good cause shown, Owner may extend the time for submission of the required policies of insurance upon such terms, and with such assurances of complete and prompt performance, as Owner may impose in the exercise of its sole discretion.

CONTRACT AGREEMENT

B. Additional Insureds. The insurance coverages required pursuant to this Contract shall name Owner, including its Board members and elected and appointed officials, its officers, employees, agents, attorneys, consultants, and representatives, and the Persons identified in Section 4 of the Special Conditions of Contract as additional insured parties (the "Additional Insureds"). The coverage afforded the Additional Insureds shall be primary and non-contributory insurance for the Additional Insureds with respect to claims arising out of operations performed by or on behalf of Contractor. If the Additional Insureds have other insurance which is applicable to the loss, such other insurance shall be on an excess or contingent basis. The amount of the insurance companies' liability under the insurance policies Contractor maintains shall not be reduced by the existence of such other insurance.

4.3 Indemnification

To the fullest extent permitted by law, Contractor shall indemnify, save harmless, and defend Owner, Engineer, and the Additional Insureds against any and all lawsuits, claims, demands, liabilities, losses, and expenses, including attorneys' fees and administrative expenses, that may arise, or be alleged to have arisen, out of or in connection with Contractor's, or its Subcontractors' or Suppliers', performance of, or failure to perform, the Work or any part thereof, whether or not due or claimed to be due in whole or in part to the active, passive, or concurrent negligence or fault of Contractor, except to the extent caused by the sole negligence of Owner, Engineer, or the Additional Insureds, as the case may be, including, without limitation lawsuits, claims, demands, liabilities, losses, and expenses for or on account of:

1. Any delays or interference or damage to other contractors; and
2. Labor, equipment, materials, or supplies furnished under this Contract, including all liens or notices of liens on account thereof or Contractor's failure to remove or discharge same; and
3. Contractor's failure to obtain any required permits, licenses, approvals, or authorizations; and
4. Bodily injury, sickness, disease, or death sustained by any Person or Persons or injury or damage to, or loss or destruction of, any property; and
5. Any act or omission of Contractor or any of its Subcontractors or Suppliers, including but not limited to any failure to fulfill the terms of, or comply with, any Laws or to pay any taxes, contributions, or premiums; and

CONTRACT AGREEMENT

6. Infringement, alleged infringement, or use of patent rights in connection with the Work and the use by Owner of any equipment, materials, supplies, processes, or inventions furnished under this Contract.

The indemnification obligations of Contractor under this Section 4.3 shall 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 or Supplier under workers' compensation acts, disability benefit acts or other employee benefit acts. Contractor's obligations under this Section 4.3 shall survive termination or completion of this Contract.

4.4 Penalties

Contractor shall be solely liable for any fines or civil penalties that are imposed by any governmental or quasi-governmental agency or body that may arise, or be alleged to have arisen, out of or in connection with Contractor's, or its Subcontractors' or Suppliers', performance of, or failure to perform, the Work or any part thereof. Contractor may contest any such fines or penalties in administrative or court proceedings; provided, however, that Contractor shall pay such fines or civil penalties prior to such protest if payment is required prior to making such protest. Contractor shall be solely responsible for all costs, including attorneys' fees and administrative expenses, of protesting any such fines or civil penalties.

ARTICLE V CONTRACT PRICE AND PAYMENT

5.1 Contract Price

Owner shall pay to Contractor, in full satisfaction for providing, performing, and completing the Work, including such risks and changes in the Work that Contractor is responsible for dealing with under this Contract without any equitable adjustment in the Contract Price, subject to any additions or deductions provided for in this Contract, in current funds, the lump sum amount or amounts, if any, stated in the Schedule of Prices and, for each acceptable unit of each Unit Price Item, if any, installed and complete in place, measured on the basis provided in the Contract Drawings and Specifications, the Unit Price for such Unit Price Item stated in the Schedule of Prices.

5.2 Acceptance as Full Payment and Satisfaction

Contractor shall accept the Contract Price in full satisfaction and payment for well and faithfully providing, performing, and completing within the Contract Time all the Work in compliance with, and as required by or pursuant to, this Contract, including such risks and changes in the Work that Contractor is responsible for dealing with under this Contract without any equitable adjustment in the Contract Price or Contract Time. The acceptance by Contractor of Final Payment shall operate as a full and complete release of Owner and Engineer of and from any and all lawsuits, claims, demands,

CONTRACT AGREEMENT

damages, liabilities, losses, and expenses of, by, or to Contractor for anything done, furnished for, arising out of, relating to, or in connection with the Work or for or on account of any act or neglect of Owner or Engineer arising out of, relating to, or in connection with the Work, except the claim against Owner for the unpaid balance, if any, of any amounts retained by Owner pursuant to the Special Conditions of Contract.

5.3 Method of Payment

Progress and Final Payments shall be made to Contractor in accordance with, and subject to the terms and conditions set forth in, Article V of the General Conditions of Contract.

ARTICLE VI LEGAL RELATIONSHIPS AND REQUIREMENTS

6.1 Binding Effect

This Contract shall be binding upon Owner and Contractor and upon their respective heirs, executors, administrators, personal representatives, and permitted successors and assigns.

Contractor agrees that if Contractor is a joint venture, then each Person participating in such joint venture shall be individually, personally, severally, and jointly responsible and liable, financially, legally, and in all other respects, for the full and proper performance of each and every provision and requirement of this Contract, notwithstanding any arrangement, understanding, or agreement to the contrary, if any, whether disclosed to Owner or not, entered into by, between or among the Persons participating in such joint venture.

6.2 Relationship of the Parties

Contractor, and its Subcontractors and Suppliers, shall act as independent contractors in providing, performing, and completing the Work. No right of supervision, requirement of approval, or other provision of this Contract and no subsequent conduct of Owner or Contractor shall be construed (1) to create the relationship of principal and agent, partners, or joint venturers between Owner and Contractor, or (2) except as provided in Paragraph 6.6B6 of the General Conditions of Contract, to create any relationship between Owner and any Subcontractor or Supplier of Contractor. The rights of Owner under this Contract, either directly or through Engineer, in the control of the quality and completeness of the Work shall not make Contractor, or any Subcontractor or Supplier of Contractor, an agent of Owner, and the liability of Contractor, and of all Subcontractors and Suppliers of Contractor, for all damages to persons or to public or private property arising from the provision, performance, or completion of the Work by Contractor, or any Subcontractor or Supplier of Contractor, shall not be lessened because of the existence, exercise, or the non-exercise of such rights.

6.3 Assignment

CONTRACT AGREEMENT

A. Assignment by Contractor. Contractor shall not (1) assign this Contract in whole or in part, (2) assign any of Contractor's rights or obligations under this Contract, or (3) assign any payment due or to become due under this Contract, without the prior express written consent of Owner, which consent may be withheld in the sole and unfettered discretion of Owner; provided, however, that Owner's prior written consent shall not be required for assignments of accounts, as defined in the Illinois Commercial Code, if to do so would violate Section 9-318 of the Illinois Commercial Code, 810 ILCS 5/9-318. Any attempted or purported assignment made by Contractor without the written consent of Owner shall be void and of no force or effect and shall constitute a default under this Contract for which Owner shall have the right to invoke any of its remedies under Section 6.6 of the General Conditions of Contract. In no event shall Owner's consent to any assignment of this Contract or of any of Contractor's rights under this Contract, whether in whole or in part, operate as a release or satisfaction of Contractor's responsibility and liability for the provision, performance, and completion of the Work in full compliance with the requirements of this Contract on or before the Completion Date, or for the proper performance of all other obligations of Contractor under this Contract, or for Contractor's liability on all representations and warranties made in or pursuant to this Contract. Contractor shall remain as fully responsible and liable for the acts, omissions, and performance of Contractor's assignee as Contractor is for its own acts, omissions, and performance.

B. Assignment by Owner. Owner may assign this Contract, in whole or in part, or any or all of its rights or obligations under this Contract, without the consent of Contractor. In the event of an assignment by Owner of any or all of its rights or obligations under this Contract, Owner shall be released from all liability with respect to the rights or obligations so assigned.

6.4 Confidential Information

All information supplied by Owner or Engineer to Contractor for or in connection with this Contract or the Work shall be held confidential by Contractor and shall not, without the prior express written consent of Owner, be used for any purpose other than performance of the Work. Neither Contractor nor any Subcontractor or Supplier shall own or be entitled to claim a copyright in the Contract or other documents prepared by Owner or Engineer.

Contractor shall identify any information supplied by it in providing, performing and completing the Work that is considered by it to be confidential or proprietary. Owner and Engineer shall not disclose any such designated confidential or proprietary information, unless such disclosure will not cause competitive harm, or such information was actually known to Owner or Engineer prior to its submission by Contractor, or such information was properly obtained or developed independently by Owner or Engineer, or Contractor consents to such disclosure. Notwithstanding the foregoing, Contractor acknowledges that Owner is subject to the Illinois Freedom of Information Act, 5 ILCS 140/1 et seq., and that no disclosure made in good faith by Owner pursuant to such Act shall be deemed to violate this Section.

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6.5 Publicity

Owner's name or insignia, photographs of the Work or the Work Site, or any other publicity pertaining to the Work shall not be used in any magazine, trade paper, newspaper, or other medium without the express written consent of Owner.

By entering the Work Site, Contractor personnel, including Subcontractor and Supplier personnel, irrevocably authorize and grant to Owner, and to its successors, agents, representatives, and assigns, the irrevocable and unrestricted right, permission, and authority to:

1. Use the likeness and/or voice of such personnel in photographs, time-lapse photography, film, video, digital recordings, and other media in any magazine, trade paper, newspaper, or other medium, whether now known or hereafter existing, including newsletters, brochures, viewbooks, movies, tapes, diskettes, promotional items, and websites, without prior approval or inspection, without payment, compensation, or any other consideration, including royalties, and without liability; and
2. Use, edit, alter, copy, exhibit, publish, broadcast, distribute, and otherwise reproduce, modify, and display such likenesses and/or voices, in whole or in part, for purposes of publicizing Owner's activities and for any other lawful purpose in any manner, media, and medium.

Contractor shall, upon request of Owner, execute, acknowledge, and deliver such further instruments and take such action as may be necessary, desirable, or proper to carry out more effectively the purposes of this Section 6.5.

6.6 No Waivers

No examination, inspection, investigation, test, measurement, review, determination, decision, certificate or approval by Owner or Engineer, nor any order by Owner for the payment of money, nor any payment for, or use, occupancy, possession, or acceptance of, the whole or any part of the Work by Owner, nor any extension of time granted by Owner, nor any delay by Owner in exercising any right under this Contract, nor any other act or omission of Owner or Engineer shall constitute or be deemed to be an acceptance of any defective, damaged, flawed, unsuitable, nonconforming or incomplete Work, equipment, materials, or supplies, nor operate to waive or otherwise

CONTRACT AGREEMENT

diminish the effect of any warranty or representation made by Contractor; or of any requirement or provision of this Contract; or of any remedy, power, or right of Owner.

No notices required to be given to Owner under this Contract are intended to be waived by Owner, and no action or inaction by Owner or Engineer shall be construed as waiving any such notice.

6.7 No Third Party Beneficiaries

No claim as a third party beneficiary under this Contract by any Person other than Contractor shall be made or be valid against Owner and Owner shall not be liable for or be held to pay any money to any such Person.

6.8 Notices

All notices required or permitted to be given under this Contract shall be in writing and shall be deemed received by the addressee thereof when delivered in person or sent by electronic mail on a business day at the address set forth below or on the third business day after being deposited in any main or branch United States post office, for delivery at the address set forth below by properly addressed, postage prepaid, certified or registered mail, return receipt requested.

Notices and communications to Owner shall be addressed to, and delivered at, the following address:

DuPage Water Commission
600 East Butterfield Road
Elmhurst, Illinois 60126-4642
Attention: General Manager
may@dpwc.org

Notices and communications to Contractor shall be addressed to, and delivered at, the following address:

D. Construction Inc. & Benchmark Construction Co., Inc., a Joint Venture
1488 S. Broadway
Coal City, IL 60416
(with copies of all correspondence to 2260 Southwind Blvd, Bartlett IL, 60103)
Attention: Kenneth Sandeno & Mark Atkins Jr.

The foregoing shall not be deemed to preclude the use of other non-oral means of notification or to invalidate any notice properly given by any such other non-oral means.

By notice complying with the requirements of this Section, Owner and Contractor each shall have the right to change the address or addressee or both for all

CONTRACT AGREEMENT

future notices to it, but no notice of a change of address shall be effective until actually received.

6.9 Governing Laws; Venue; Attorney's Fees

This Contract and the rights of Owner and Contractor under this Contract shall be interpreted according to the internal laws of the State of Illinois. This Contract and the rights of Owner and Contractor under this Contract shall be interpreted according to the internal laws of the State of Illinois. The parties agree that all disputes between them, whether arising out of or related to the Contract or arising out of any statute, regulation or common law, will be litigated exclusively in the Circuit Court of the Eighteenth Judicial Circuit, DuPage County, Illinois. The parties expressly consent to the exclusive jurisdiction and venue of such court, and covenant not to sue in any other court or tribunal, state, federal or otherwise. The parties waive their right to argue that this court is an inconvenient forum. In the event either party initiates litigation under or regarding this Contract or the Project, the substantially prevailing party shall be entitled to its reasonable attorney's fees and costs including, without limitation, expert witness costs. The determination of who is the substantially prevailing party and the amount that will be paid will be decided by the court that presides over the dispute. This section is intended to be severable and shall survive the termination of this agreement.

6.10 Changes in Laws

Unless otherwise explicitly provided in this Contract, any reference to Laws shall include such Laws as they may be amended or modified from time to time.

6.11 Compliance with Laws and Grants

A. Compliance with Laws. Contractor shall give all notices, pay all fees, and take all other action that may be necessary to ensure that the Work is provided, performed, and completed in accordance with the requirements of all governmental permits, licenses, or other approvals or authorizations that may be required in connection with providing, performing, and completing the Work and with all applicable Laws, including, without limitation, the Prevailing Wage Act, 820 ILCS 130/0.01 et seq. (if the Illinois Department of Labor revises the prevailing rate of hourly wages to be paid, the revised rate shall apply to this Contract); any other prevailing wages Laws; the Fair Labor Standards Act; any Laws regarding qualification to do business; any Laws requiring preference to laborers of specified classes; the Illinois Steel Products Procurement Act, 30 ILCS 565/1 et seq.; any Laws prohibiting discrimination because of, or requiring affirmative action based on, race, creed, color, national origin, age, sex, or other prohibited classification, including, without limitation, the Americans with Disabilities Act of 1990, 42 U.S.C. §§ 12101 et seq., the Illinois Human Rights Act, 775 ILCS 5/1-101 et seq. and the Public Works Employment Discrimination Act, 775 ILCS 10/1 et seq.; any Laws respecting the assumption of liability for taxes, contributions, and premiums for unemployment insurance, old age or retirement benefits, pensions, annuities, or other similar benefits for Contractor's and Subcontractors' employees; and any Laws regarding

CONTRACT AGREEMENT

safety or the performance of the Work, including the Illinois Structural Work Act, the Illinois Underground Utility Facilities Damage Prevention Act, and the Occupational Safety and Health Act. Contractor shall keep itself fully informed of all Laws affecting this Contract; affecting those engaged or employed on the Work; affecting the equipment, materials, and supplies used in the Work; affecting the conduct of the Work; and affecting the rights, duties, powers, or obligations of Owner or of Contractor; and shall also keep itself fully informed of all orders, decrees, and other requirements of bodies or tribunals having any jurisdiction or authority over any of the foregoing. Contractor shall display all permits, licenses, and other approvals and authorizations as required by Law.

This Project is subject to the provisions of the Illinois Prevailing Wage Act (820 ILCS 130/0.01 *et seq.*), providing for the payment of the prevailing rate of wage to all laborers, workmen and mechanics engaged in the Work. Contractor shall pay prevailing rates of wages in accordance with the Illinois Department of Labor's wage determination, and any subsequent determinations issued by the Illinois Department of Labor. These revisions may be accessed by computer at <https://labor.illinois.gov/laws-rules/conmed/prevailing-wage-rates.html>. Contractor is responsible for determining the applicable prevailing wage rates at the time of bid submission and at the time of performance of the Work. Failure of Contractor to make such determination shall not relieve it of its obligations in accordance with the Contract Documents. Contractor shall also comply with all other requirements of the Act including without limitation those pertaining to inclusion of required language in subcontracts, job site posting, maintenance and submission of certified payroll records and inspection of records. All certified payroll documents for this project shall be submitted directly to the Illinois Department of Labor ("IDOL") through the IDOL Certified Transcript of Payroll Portal, which can be accessed at: <https://labor.illinois.gov/laws-rules/conmed/certifiedtranscriptofpayroll.html>.

B. Compliance by Subcontractors and Suppliers. Contractor shall, at all times, cause all of its Subcontractors and Suppliers to observe and comply with all such Laws.

C. Noncompliance of Contract Documents. Contractor shall promptly examine the Contract Drawings and Specifications and other Contract Documents and report to Owner any respects in which it appears that any of them may fail to conform to any applicable Laws.

D. Verification of Compliance. At or before the time of Owner's Final Acceptance of the Work, Contractor shall deliver to Owner all certificates, receipts, or other evidences of approval, acceptance, or payment of fees that may be required to establish the compliance of the Work with all applicable Laws, permits, licenses, approvals, authorizations, or other requirements.

E. Provisions Deemed Inserted. Each and every provision required by Law to be inserted in this Contract shall be deemed to be inserted herein, and this Contract shall be read and enforced as though all such provisions were set out in full in this Contract. If through mistake or otherwise any such provision is not set out in this

CONTRACT AGREEMENT

Contract, or is not correctly set out in this Contract, then upon the application of either Owner or Contractor, this Contract shall forthwith be physically amended to correctly set out such provision.

F. Compliance With Grant Conditions. Contractor shall comply with all conditions of, and all Laws applicable to, and all policies, practices, and procedures of Owner applicable to, any federal, state, or local grant received by Owner or by Contractor at any time with respect to this Contract or with respect to the provision, performance, or completion of the Work.

G. Regulatory Authority. Nothing in this Contract shall be construed to waive or limit any aspect of Owner's lawful authority to regulate the activities of Contractor, its Subcontractors, or any other Person or to regulate the Work, the Work Site, or any other matter falling within its lawful regulatory jurisdiction and powers. No review, inspection, test, audit, measurement, order, determination, decision, disapproval, approval, payment for, or use or acceptance of, the Work, or any other act or omission of Owner shall imply, create any interest in, be deemed to be the issuance of, or require Owner to issue any license or permit to Contractor or any Subcontractor.

6.12 Compliance with Patents

A. Patent Rights. Contractor shall do all things necessary to obtain such rights and licenses as may be necessary in connection with all costs, royalties, and fees arising from the use on, or the incorporation into, the Work of patented equipment, materials, supplies, tools, appliances, devices, processes, or inventions.

B. Effect of Contractor Being Enjoined. Should Contractor be enjoined from furnishing or using any equipment, materials, supplies, tools, appliances, devices, processes, or inventions supplied or required to be supplied or used under this Contract, Contractor shall promptly offer substitute equipment, materials, supplies, tools, appliances, devices, processes, or inventions in lieu thereof, of equal efficiency, quality, suitability, and market value, for review by Owner. If Owner should disapprove the offered substitutes and should elect, in lieu of a substitution, to have supplied, and to retain and use, any such equipment, materials, supplies, tools, appliances, devices, processes, or inventions as may by this Contract be required to be supplied, Contractor shall pay such royalties and secure such valid licenses as may be requisite and necessary for Owner to use such equipment, materials, supplies, tools, appliances, devices, processes, or inventions without being disturbed or in any way interfered with by any proceeding in law or equity on account thereof. Should Contractor neglect or refuse to make any approved substitution promptly, or to pay such royalties and secure such licenses as may be necessary, then Owner shall have the right to make such substitution, or Owner may pay such royalties and secure such licenses and charge the cost thereof against any money due Contractor from Owner or recover the amount thereof from Contractor and its surety or sureties notwithstanding that Final Payment may have been made.

6.13 Severability

CONTRACT AGREEMENT

The provisions of this Contract shall be interpreted when possible to sustain their legality and enforceability as a whole. In the event any provision of this Contract shall be held invalid, illegal, or unenforceable by a court of competent jurisdiction, in whole or in part, neither the validity of the remaining part of such provision, nor the validity of any other provisions of this Contract, shall be in any way affected thereby. The unenforceability of any provision of this Contract in a specific situation shall not affect the enforceability of that provision in any other situation.

6.14 Entire Agreement

This Contract sets forth the entire agreement of Owner and Contractor with respect to the accomplishment of the Work and the payment of the Contract Price therefor, and there are no other understandings or agreements, oral or written, between Owner and Contractor with respect to the Work and the compensation therefor, nor was the making and execution of this Contract induced by any representation, statement, warranty, agreement, or action other than those expressed or explicitly referenced herein.

6.15 Amendments

No modification, addition, deletion, revision, alteration or other change to this Contract shall be effective unless and until such change is reduced to writing and executed and delivered by Owner and Contractor.

6.16 Counterparts

This Contract is being executed in five original counterparts, each of which shall be deemed to be an original.

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

Attest/Witness:

DuPAGE WATER COMMISSION

By: _____

By: _____
Paul D. May, P.E.

Title: _____

Title: General Manager

CONTRACT AGREEMENT

Attest/Witness:

**D. Construction Inc. & Benchmark
Construction Co., Inc.**

By: _____

By: _____
Mark Atkins Jr.
Benchmark Construction Co., Inc.

Title: _____

Title: _____

Attest/Witness:

By: _____

By: _____
Kenneth Sandeno
D. Construction, Inc.

Title: _____

Title: _____

**SEE GENERAL INSTRUCTIONS TO BIDDERS, SECTION 8,
FOR SIGNATURE REQUIREMENTS**

STATE OF ILLINOIS)
)
COUNTY OF _____) SS

CONTRACTOR'S CERTIFICATION

Mark Atkins Jr. and Kenneth Sandeno, being first duly sworn on oath, deposes and states that all statements made herein are made on behalf of Contractor, that this deponent is authorized to make them, and that the statements contained herein are true and correct.

Contractor deposes, states, and certifies that Contractor is not barred from contracting with a unit of state or local government as a result of (i) a violation of either Section 33E-3 or Section 33E-4 of Article 33 of the Criminal Code of 1961, 720 ILCS 5/33E-1 et seq.; or (ii) a violation of the USA Patriot Act of 2001, 107 Public Law 56 (October 26, 2001) (the "Patriot Act") or other statutes, orders, rules, and regulations of the United States government and its various executive departments, agencies and offices related to the subject matter of the Patriot Act, including, but not limited to, Executive Order 13224 effective September 24, 2001.

DATED this _ day of 20____.

Attest/Witness:

By: _____

By: _____
Mark Atkins Jr.
Benchmark Construction Co., Inc.

Title: _____

Title: _____

Attest/Witness:

By: _____

By: _____
Kenneth Sandeno
D. Construction, Inc.

Title: _____

Title: _____

Subscribed and Sworn to
before me this ____ day
of _____, 20____.

My Commission Expires: _____

Notary Public

[SEAL]

**SEE GENERAL INSTRUCTIONS TO BIDDERS, SECTION 8,
FOR SIGNATURE REQUIREMENTS**

DUPAGE WATER COMMISSION
CONTRACT FOR THE CONSTRUCTION OF
CONTRACT TW-6/25 SECTION 1 (BOOK ROAD)

SCHEDULE OF PRICES

PROPOSAL**00 42 22 BID FORM****PART 1 - GENERAL****1.01 SUMMARY**

A. See Special Instructions to Bidders.

TW-6/25 SECTION 1					
No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
ALTERNATES TABLE					
A1	54-INCH STEEL WATER MAIN BY OPEN-CUT	LF	14,840	1,405.00	20,850,200.00
A2	54-INCH STEEL WATER MAIN BY TRENCHLESS CONSTRUCTION	LF	1,400	17,623.00	24,672,200.00
A3	ALTERNATE A SUBTOTAL (A1 + A2)				45,522,400.00
B1	54-INCH PCCP WATER MAIN BY OPEN-CUT	LF	14,840	1,281.75	19,021,170.00
B2	54-INCH STEEL WATER MAIN BY TRENCHLESS CONSTRUCTION	LF	1,400	17,500.00	24,500,000.00
B3	ALTERNATE B SUBTOTAL (B1 + B2)				43,521,170.00
C1	48-INCH STEEL WATER MAIN BY OPEN-CUT	LF	14,840	1,387.00	20,583,080.00
C2	48-INCH STEEL WATER MAIN BY TRENCHLESS CONSTRUCTION	LF	1,400	17,605.00	24,647,000.00
C3	ALTERNATE C SUBTOTAL (C1 + C2)				45,230,080.00
D1	48-INCH PCCP WATER MAIN BY OPEN-CUT	LF	14,840	1,227.00	18,208,680.00
D2	48-INCH STEEL WATER MAIN BY TRENCHLESS CONSTRUCTION	LF	1,400	17,445.00	24,423,000.00
D3	ALTERNATE D SUBTOTAL (D1 + D2)				42,631,680.00
BASE BID TABLE					
1	MOBILIZATION	LS	1	3,900,000.00	3,900,000.00
2	TEMPORARY FIELD OFFICE	MNTH	18	8,000.00	144,000.00
3	16-INCH BUTTERFLY VALVE IN VAULT	EA			

PROPOSAL

TW-6/25 SECTION 1					
No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
4	20-INCH BUTTERFLY VALVE IN VAULT	EA			
5	24-INCH BUTTERFLY VALVE IN VAULT	EA			
6	24-INCH REMOTE OPERATED BUTTERFLY VALVE WITH VAULT	EA			
7	30-INCH BUTTERFLY VALVE WITH ACTUATOR MANHOLE	EA			
8	36-INCH BUTTERFLY VALVE WITH ACTUATOR MANHOLE	EA			
9	36-INCH REMOTE OPERATED BUTTERFLY VALVE WITH VAULT	EA			
10	48-INCH BUTTERFLY VALVE WITH ACTUATOR MANHOLE (75 TH STREET – STA 25+00) (OWNER-FURNISHED VALVE)	LS	1	1,000,000.00	1,000,000.00
11	48-INCH BUTTERFLY VALVE WITH ACTUATOR MANHOLE (75 TH STREET – STA 29+25) (OWNER-FURNISHED VALVE)	LS	1	900,000.00	900,000.00
12	48-INCH BUTTERFLY VALVE WITH ACTUATOR MANHOLE AND DISINFECTION BYPASS ASSEMBLY (BOOK ROAD) (OWNER-FURNISHED VALVE)	LS	1	500,000.00	500,000.00
13	54-INCH BUTTERFLY VALVE WITH ACTUATOR MANHOLE (OWNER-FURNISHED VALVE)	EA	2	400,000.00	800,000.00
14	54-INCH REMOTE OPERATED BUTTERFLY VALVE WITH VAULT (OWNER-FURNISHED VALVE)	EA	1	450,000.00	450,000.00
15	54-INCH BUTTERFLY VALVE WITH ACTUATOR MANHOLE	EA			
16	54-INCH REMOTE OPERATED BUTTERFLY VALVE WITH VAULT	EA			
17	AIR RELEASE VALVE MANHOLE (24-INCH DIA. AND SMALLER PIPE)	EA			
18	AIR RELEASE AND ACCESS MANHOLE (TYPE 1)	EA	5	60,000.00	300,000.00

PROPOSAL

TW-6/25 SECTION 1					
No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
19	AIR RELEASE AND ACCESS MANHOLE (TYPE 2)	EA	9	75,000.00	675,000.00
20	BLOW-OFF VALVE WITH MANHOLE (30-INCH DIA. AND SMALLER PIPE)	EA			
21	BLOW-OFF VALVE WITH MANHOLE (36-INCH DIA. AND LARGER PIPE)	EA	5	85,000.00	425,000.00
22	16-INCH DUCTILE IRON WATER MAIN BY OPEN-CUT	LF			
23	16-INCH DUCTILE IRON WATER MAIN BY TRENCHLESS CONSTRUCTION	LF			
24	20-INCH DUCTILE IRON WATER MAIN BY OPEN-CUT	LF			
25	20-INCH DUCTILE IRON WATER MAIN BY TRENCHLESS CONSTRUCTION	LF			
26	24-INCH DUCTILE IRON WATER MAIN BY OPEN-CUT	LF			
27	24-INCH DUCTILE IRON WATER MAIN BY TRENCHLESS CONSTRUCTION	LF			
28	30-INCH DUCTILE IRON WATER MAIN BY OPEN-CUT	LF			
29	36-INCH DUCTILE IRON WATER MAIN BY OPEN-CUT	LF			
30	36-INCH DUCTILE IRON WATER MAIN BY TRENCHLESS CONSTRUCTION	LF			
31	36-INCH PCCP WATER MAIN BY OPEN-CUT	LF			
32	36-INCH PCCP WATER MAIN BY TRENCHLESS CONSTRUCTION	LF			
33	36-INCH STEEL WATER MAIN BY OPEN-CUT	LF			
34	36-INCH STEEL WATER MAIN BY TRENCHLESS CONSTRUCTION	LF			
35	48-INCH PCCP WATER MAIN BY OPEN-CUT	LF			

PROPOSAL

TW-6/25 SECTION 1					
No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
36	48-INCH PCCP WATER MAIN BY TRENCHLESS CONSTRUCTION	LF			
37	48-INCH STEEL WATER MAIN BY OPEN-CUT	LF			
38	48-INCH STEEL WATER MAIN BY TRENCHLESS CONSTRUCTION	LF			
39	48-INCH STEEL WATER MAIN BY OPEN-CUT (BOOK ROAD STA 752+60.00 TO 756+64.30)	LF	430	1,000.00	430,000.00
40	48-INCH STEEL WATER MAIN BY TRENCHLESS CONSTRUCTION (BOOK ROAD STA 756+64.30 TO 758+52.24)	LF	188	15,000.00	2,820,000.00
41	54-INCH PCCP WATER MAIN BY OPEN-CUT	LF			
42	54-INCH PCCP WATER MAIN BY TRENCHLESS CONSTRUCTION	LF			
43	54-INCH STEEL WATER MAIN BY OPEN-CUT	LF			
44	54-INCH STEEL WATER MAIN BY TRENCHLESS CONSTRUCTION	LF			
45	60-INCH STEEL WATER MAIN BY OPEN-CUT	LF			
46	60-INCH STEEL WATER MAIN BY TRENCHLESS CONSTRUCTION	LF			
47	75 TH STREET CONNECTION TO EXISTING DWC 48-INCH PCCP (STA 25+00)	LS	1	1,000,000.00	1,000,000.00
48	75 TH STREET CONNECTION TO EXISTING DWC 48-INCH PCCP (STA 26+22)	LS	1	1,500,000.00	1,500,000.00
49	75 TH STREET CONNECTION TO EXISTING DWC 48-INCH PCCP (STA 29+25)	LS	1	1,000,000.00	1,000,000.00
50	30-INCH STUB FOR FUTURE CONNECTION	LS	1	100,000.00	100,000.00
51	REMOVE 36-INCH TEST PLUG AND CONNECT TO 36-INCH WATER MAIN (ADJACENT CONTRACT)	EA			

PROPOSAL

TW-6/25 SECTION 1					
No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
52	REMOVE 54-INCH TEST PLUG AND CONNECT TO 54-INCH WATER MAIN (ADJACENT CONTRACT)	EA	1	50,000.00	50,000.00
53	TRENCH BACKFILL (SELECT MATERIAL)	CY	39,240	1.00	39,240.00
54	TRENCH BACKFILL (NATIVE MATERIAL)	CY			
55	CATHODIC PROTECTION SYSTEM	LS	1	300,000.00	300,000.00
56	EARTH EXCAVATION	CY	4,210	30.00	126,300.00
57	AGGREGATE BASE COURSE, TYPE B 2-INCH	SY	760	8.00	6,080.00
58	AGGREGATE BASE COURSE, TYPE B 4-INCH	SY	70	10.00	700.00
59	AGGREGATE BASE COURSE, TYPE B 6-INCH	SY	25,100	10.00	251,000.00
60	PORTLAND CEMENT CONCRETE BASE COURSE, 8-INCH	SY			
61	BITUMINOUS MATERIALS (PRIME COAT)	LB	53,000	0.01	530.00
62	BITUMINOUS MATERIALS (TACK COAT)	LB	25,220	0.01	252.20
63	HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50	TON	13,590	76.00	1,032,840.00
64	HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N70	TON			
65	HOT-MIX ASPHALT SURFACE COURSE, IL-9.5, MIX D, N50	TON	6,470	80.00	517,600.00
66	HOT-MIX ASPHALT SURFACE COURSE, IL-9.5, MIX D, N70	TON			
67	HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 8-INCH	SY			
68	HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 12-INCH	SY			
69	PORTLAND CEMENT CONCRETE PAVEMENT, 12-INCH	SY			

PROPOSAL

TW-6/25 SECTION 1					
No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
70	PROTECTIVE COAT	SY			
71	PORTLAND CEMENT CONCRETE DRIVEWAY PAVEMENT, 6-INCH	SY			
72	PORTLAND CEMENT CONCRETE DRIVEWAY PAVEMENT, 8-INCH	SY	70	100.00	7,000.00
73	PORTLAND CEMENT CONCRETE SIDEWALK, 5-INCH	SF			
74	PORTLAND CEMENT CONCRETE SIDEWALK, 6-INCH	SF			
75	DETECTABLE WARNINGS	SF	400	40.00	16,000.00
76	PAVEMENT REMOVAL	SY	24,290	16.00	388,640.00
77	HOT-MIX ASPHALT SURFACE REMOVAL, 1 1/2-INCH	SY			
78	HOT-MIX ASPHALT SURFACE REMOVAL, 1 3/4-INCH	SY			
79	DRIVEWAY PAVEMENT REMOVAL	SY	430	16.00	6,880.00
80	COMBINATION CURB AND GUTTER REMOVAL	LF	3,630	10.00	36,300.00
81	SIDEWALK REMOVAL	SF	6,590	3.00	19,770.00
82	MEDIAN REMOVAL	SF			
83	COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.12	LF			
84	COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.18	LF			
85	COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.24	LF			
86	COMBINATION CONCRETE CURB AND GUTTER, TYPE M-4.12	LF			
87	CONCRETE MEDIAN, TYPE SB-6.18	SF			

PROPOSAL

TW-6/25 SECTION 1					
No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
88	STEEL PLATE BEAM GUARDRAIL, TYPE A, 6-FOOT POSTS	LF	50	48.00	2,400.00
89	LONG-SPAN GUARDRAIL OVER CULVERT, 12-FOOT 6-INCH SPAN	LF	30	65.00	1,950.00
90	TRAFFIC BARRIER TERMINAL, TYPE 1B	EA	2	2,300.00	4,600.00
91	TRAFFIC BARRIER TERMINAL, TYPE 2	EA	2	1,700.00	3,400.00
92	GUARDRAIL REMOVAL	LF	160	7.00	1,120.00
93	PAVEMENT MARKING BLACKOUT TAPE, 6-INCH	LF	1,220	4.00	4,880.00
94	CHANGEABLE MESSAGE SIGN	CAL DAY	2,920	25.00	73,000.00
95	SHORT TERM PAVEMENT MARKING	LF	9,190	2.00	18,380.00
96	SHORT TERM PAVEMENT MARKING REMOVAL	SF	3,610	3.00	10,830.00
97	TEMPORARY PAVEMENT MARKING LETTERS AND SYMBOLS – PAINT	SF	190	3.00	570.00
98	TEMPORARY PAVEMENT MARKING – LINE 4-INCH – PAINT	LF	23,150	0.50	11,575.00
99	TEMPORARY PAVEMENT MARKING – LINE 6-INCH – PAINT	LF			
100	TEMPORARY PAVEMENT MARKING – LINE 24-INCH – PAINT	LF	100	3.00	300.00
101	TEMPORARY PAVEMENT MARKING – LINE 4-INCH – TYPE IV TAPE	LF	6,230	3.00	18,690.00
102	TEMPORARY PAVEMENT MARKING – LINE 6-INCH – TYPE IV TAPE	LF			
103	TEMPORARY CONCRETE BARRIER	LF	2,170	30.00	65,100.00
104	IMPACT ATTENUATORS, TEMPORARY (FULLY REDIRECTIVE, NARROW), TEST LEVEL 2	EA	4	6,500.00	26,000.00

PROPOSAL

TW-6/25 SECTION 1					
No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
105	RELOCATE SIGN PANEL ASSEMBLY – TYPE A	EA	21	255.00	5,355.00
106	THERMOPLASTIC PAVEMENT MARKING – LETTERS AND SYMBOLS	SF	1,040	6.00	6,240.00
107	THERMOPLASTIC PAVEMENT MARKING – LINE 4-INCH	LF	64,350	1.00	64,350.00
108	THERMOPLASTIC PAVEMENT MARKING – LINE 6-INCH	LF	4,910	1.50	7,365.00
109	THERMOPLASTIC PAVEMENT MARKING – LINE 12-INCH	LF	2,460	3.50	8,610.00
110	THERMOPLASTIC PAVEMENT MARKING – LINE 24-INCH	LF	300	7.00	2,100.00
111	PAVEMENT MARKING REMOVAL – GRINDING	SF	16,010	1.00	16,010.00
112	UNDERGROUND CONDUIT, GALVANIZED STEEL, 2-INCH DIA.	LF	1,380	28.00	38,640.00
113	HANDHOLE	EA	3	2,600.00	7,800.00
114	MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION	EA	6	2,900.00	17,400.00
115	ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14, ONE PAIR	LF	820	2.00	1,640.00
116	DRILL EXISTING HANDHOLE	EA	2	482.00	964.00
117	DETECTOR LOOP, TYPE I	LF	320	74.00	23,680.00
118	DETECTOR LOOP REPLACEMENT	LF	1,770	55.00	97,350.00
119	TEMPORARY TRAFFIC SIGNAL INSTALLATION	EA	5	20,000.00	100,000.00
120	MODIFY EXISTING CONTROLLER	EA	6	2,500.00	15,000.00
121	REBUILD EXISTING HANDHOLE	EA			
122	REMOVE EXISTING HANDHOLE	EA	3	660.00	1,980.00
123	CLASS D PATCHES, 12-INCH	SY	1,630	130.00	211,900.00

PROPOSAL

TW-6/25 SECTION 1					
No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
124	BIKE PATH REMOVAL	SY			
125	MAILBOX REMOVE AND REPLACE	EA	2	500.00	1,000.00
126	FENCE REMOVAL AND REINSTALLATION	LF			
127	TEMPORARY ACCESS (PRIVATE ENTRANCE)	EA	12	500.00	6,000.00
128	TEMPORARY ACCESS (COMMERCIAL ENTRANCE)	EA	2	1,000.00	2,000.00
129	TEMPORARY ACCESS (ROAD)	EA	10	1,000.00	10,000.00
130	TRAFFIC CONTROL AND PROTECTION, (SPECIAL)	LS	1	189,135.30	189,135.30
131	HOT-MIX ASPHALT DRIVEWAY PAVEMENT, 4-INCH	SY	330	36.00	11,880.00
132	HOT-MIX ASPHALT DRIVEWAY PAVEMENT, 10-INCH	SY			
133	DRAINAGE AND UTILITY STRUCTURES TO BE ADJUSTED	EA	10	1,000.00	10,000.00
134	DRAINAGE AND UTILITY STRUCTURES TO BE RECONSTRUCTED	EA	1	5,000.00	5,000.00
135	TEMPORARY INFORMATION SIGNING	SF	160	25.00	4,000.00
136	TEMPORARY PAVEMENT	SY	740	43.00	31,820.00
137	TEMPORARY TRAFFIC SIGNAL TIMING	EA	27	650.00	17,550.00
138	HOT-MIX ASPHALT SURFACE REMOVAL – BUTT JOINT	SY	740	1.00	740.00
139	TELESCOPING STEEL SIGN SUPPORT	LF	25	25.00	625.00
140	METAL POST – TYPE A	LF	25	25.00	625.00
141	EROSION CONTROL SEEDING, LAWN MIXTURE (CLASS 1)	LB	830	30.00	24,900.00
142	EROSION CONTROL SEEDING, ROADSIDE MIXTURE (CLASS 2)	LB	660	28.00	18,480.00

PROPOSAL

TW-6/25 SECTION 1					
No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
143	EROSION CONTROL SEEDING – PASTURE MIXTURE	LB			
144	EROSION CONTROL SEEDING – SPORTS TURF MIXTURE	LB			
145	HIGH VISIBILITY SAFETY FENCE	LF	30,100	6.00	180,600.00
146	TREE AND SHRUBBERY PROTECTION	EA	130	500.00	65,000.00
147	TREE REMOVAL (6- TO 15-UNIT DIAMETER)	EA			
148	TREE REMOVAL (OVER 15-UNIT DIAMETER)	EA			
149	TREE REMOVAL (AREA)	AC			
150	DUAL FENCE BARRIER (HIGH-VISIBILITY GEOTEXTILE OUTER FENCE)	LF	3,830	10.00	38,300.00
151	SILT FENCE	LF	11,000	6.00	66,000.00
152	INLET PROTECTION, CURB	EA	15	300.00	4,500.00
153	INLET PROTECTION, AREA	EA	40	300.00	12,000.00
154	ROLLED EROSION CONTROL PRODUCTS	LF			
155	UTILITY RELOCATION/IMPROVEMENT	EA			
156	REMOVE AND REPLACE COMMUNICATIONS LINE	LF			
157	LIGHT POLE RELOCATION	EA			
158	WATER MAIN RELOCATION	LS			
159	REMOVE AND REPLACE 2-INCH GAS MAIN	LF			
160	REMOVE AND REPLACE 4-INCH GAS MAIN	LF			
161	REMOVE AND REPLACE 6-INCH GAS MAIN	LF			
162	REMOVE AND REPLACE 6-INCH SANITARY SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF			
163	REMOVE AND REPLACE 8-INCH SANITARY SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF	130	359.00	46,670.00

PROPOSAL

TW-6/25 SECTION 1					
No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
164	REMOVE AND REPLACE 12-INCH SANITARY SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF			
165	REMOVE AND REPLACE 15-INCH SANITARY SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF			
166	REMOVE AND REPLACE 16-INCH SANITARY SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF			
167	REMOVE AND REPLACE 18-INCH SANITARY SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF			
168	REMOVE AND REPLACE 24-INCH SANITARY SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF			
169	REMOVE AND REPLACE 12-INCH FES	EA			
170	REMOVE AND REPLACE 15-INCH FES	EA	1	25,800.00	25,800.00
171	REMOVE AND REPLACE 18-INCH FES	EA			
172	REMOVE AND REPLACE 24-INCH FES	EA			
173	REPLACE 4-INCH STORM SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF			
174	REPLACE 6-INCH STORM SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF			
175	REPLACE 8-INCH STORM SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF			
176	REPLACE 10-INCH STORM SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF	240	225.00	54,000.00
177	REPLACE 12-INCH STORM SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF	630	255.00	160,650.00
178	REPLACE 15-INCH STORM SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF	191	281.00	53,671.00
179	REPLACE 16-INCH STORM SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF			
180	REPLACE 18-INCH STORM SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF			

PROPOSAL

TW-6/25 SECTION 1					
No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
181	REPLACE 20-INCH STORM SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF			
182	REPLACE 24-INCH STORM SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF	270	385.00	103,950.00
183	REPLACE 30-INCH STORM SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF			
184	REPLACE 36-INCH STORM SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF			
185	REPLACE 42-INCH STORM SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF			
186	REMOVE AND REPLACE HEADWALL OF 36-INCH RCP CULVERT	LS			
187	REMOVE AND REPLACE 12-INCH STORM CULVERT WITH 12-INCH CMP CULVERT	LF			
188	REMOVE AND REPLACE 15-INCH STORM CULVERT WITH 15-INCH CMP CULVERT	LF			
189	REMOVE AND REPLACE 24-INCH STORM CULVERT WITH 24-INCH CMP CULVERT	LF			
190	REMOVE AND REPLACE 30-INCH STORM CULVERT WITH 30-INCH CMP CULVERT	LF	60	385.00	23,100.00
191	REMOVE AND REPLACE 48-INCH BY 48-INCH REINFORCED CONCRETE BOX CULVERT	LF			
192	REMOVE AND REPLACE HEADWALL OF 65-INCH BY 65-INCH BOX CULVERT	LS			
193	REMOVE AND REPLACE CATCH BASIN	EA	21	7,000.00	147,000.00
194	REMOVE AND REPLACE STORM MANHOLE	EA			
195	REMOVE AND REPLACE INLET	EA	1	7,000.00	7,000.00
196	CONNECTION TO EXISTING SEWER STRUCTURE	EA	42	1,200.00	50,400.00
197	REMOVE AND REPLACE DUAL STORM CULVERTS 36-INCH AND HEADWALLS	LS	1	104,000.00	104,000.00

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TW-6/25 SECTION 1					
No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
198	CROSSING EXISTING 58-INCH BY 91-INCH ELLIPTICAL CONCRETE PIPE (BOOK ROAD)	LS	1	182,000.00	182,000.00
199	STEEL SHEET PILING COFFERDAM	SF			
200	STRUCTURAL LINER FOR WATER MAIN	LF			
201	STRUCTURAL LINER FOR SEWERS	LF			
202	MS 31A METERING STATION (MONTGOMERY 1)	LS			
203	MS 31B METERING STATION (MONTGOMERY 2)	LS			
204	MS 32A METERING STATION (OSWEGO 1)	LS			
205	MS 32B METERING STATION (OSWEGO 2)	LS			
206	MS 32C METERING STATION (OSWEGO 3)	LS			
207	MS 33A METERING STATION (YORKVILLE 1)	LS			
208	MS 33B METERING STATION (YORKVILLE 2)	LS			
209	CHEMICAL FEED BUILDING	LS			
210	VERTICAL DROP STRUCTURES (STA 619+71 AND STA 623+24)	LS	1	460,000.00	460,000.00
211	VERTICAL DROP STRUCTURES (STA 677+21 AND STA 679+55)	LS	1	460,000.00	460,000.00
212	VERTICAL DROP STRUCTURES (STA 700+39 AND STA 708+30)	LS	1	460,000.00	460,000.00
213	VERTICAL DROP STRUCTURES (STA 724+89 AND STA 726+79)	LS	1	460,000.00	460,000.00
IND1	EXPLORATORY EXCAVATION	CF	1,000	50.00	50,000.00
IND2	EXPLORATORY EXCAVATION, VACUUM	EA	12	1,886.00	22,632.00

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TW-6/25 SECTION 1					
No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
IND3	ADJUST WATER SERVICE LINE	LF	100	254.00	25,400.00
IND4	ADJUST SEWER SERVICE LINE	LF	100	506.00	50,600.00
IND5	REMOVE AND REPLACE DRAIN TILE	LS			
ALL1	ALLOWANCE: CITY OF NAPERVILLE DPU-E ELECTRIC SERVICES	LS	1	\$25,000	\$25,000
BB1	BASE BID SUBTOTAL (SUM OF BID PRICE FOR ITEMS 1-213 + IND 1-5 + ALL1)		\$23,626,830.00		

Steel Pipe Manufacturer: Northwest

PCCP Manufacturer: Thompson Pipe Group Pressure

PROPOSAL

TOTAL BID PRICE TABLE
ALTERNATE A (54-INCH STEEL) TOTAL BID PRICE (A3 + BB1)
TOTAL BID PRICE (\$ Figures)
69,149,230.00
TOTAL BID PRICE (Words)
Sixty-nine million, one hundred forty-nine thousand, two hundred thirty dollars and zero cents
ALTERNATE B (54-INCH PCCP) TOTAL BID PRICE (B3 + BB1)
TOTAL BID PRICE (\$ Figures)
67,148,000.00
TOTAL BID PRICE (Words)
Sixty seven million, one hundred forty-eight thousand dollars and zero cents
ALTERNATE C (48-INCH STEEL) TOTAL BID PRICE (C3 + BB1)
TOTAL BID PRICE (\$ Figures)
68,856,910.00
TOTAL BID PRICE (Words)
Sixty eight million, eight hundred fifty six thousand, nine hundred and ten dollars and zero cents
ALTERNATE D (48-INCH PCCP) TOTAL BID PRICE (D3 + BB1)
TOTAL BID PRICE (\$ Figures)
66,258,510.00
TOTAL BID PRICE (Words)
Sixty-six million, two hundred fifty-eight thousand, five hundred and ten dollars and zero cents

DUPAGE WATER COMMISSION
CONTRACT FOR THE CONSTRUCTION OF
CONTRACT TW-6/25 SECTION 1 (BOOK ROAD)

GENERAL CONDITIONS OF CONTRACT

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DUPAGE WATER COMMISSION
CONTRACT FOR THE CONSTRUCTION OF
CONTRACT TW-6/25 SECTION 1 (BOOK ROAD)

GENERAL CONDITIONS OF CONTRACT

ARTICLE I
PERFORMANCE OF THE WORK

1.1 Performance Standards and Obligations

A. Quality of Work.

1. General Standard. All Work shall be provided, performed, and completed in a proper and workmanlike manner, consistent with the highest standards of professional and construction practices and in full compliance with, and as required by or pursuant to, this Contract, and with the greatest economy, efficiency, and expedition consistent therewith. All equipment, materials, and supplies incorporated into the Work shall be new and undamaged and shall be the best of their respective kinds for their intended use.

2. Referenced Standards. References to standards, specifications, manuals, or codes of any technical society, organization, or association, or to codes of local, state or federal authorities, shall mean the latest standard, specification, manual or code adopted and published at the date of the Bidder's Proposal, unless specifically stated otherwise. However, no provision of any referenced standard, specification, manual or code shall change the duties and responsibilities of Owner, Engineer, or Contractor from those set forth in this Contract.

3. Proprietary Standards and Equivalency. Whenever any equipment, materials or supplies are specified or described in this Contract by using the name or other identifying feature of a proprietary product or the name or other identifying feature of a particular manufacturer or vendor, the specific item mentioned shall be understood as establishing the type, function and quality desired. Other manufacturers' or vendors' products may be accepted, provided sufficient information is submitted to allow Engineer to determine that the products proposed are equivalent in substance and function to those named. The equivalency of any product proposed shall be determined by Engineer, in its sole and absolute discretion, and no such product shall be purchased, fabricated or installed until equivalency shall have been determined, in writing, by Engineer. Engineer's written decision with respect to equivalency shall be final.

B. Timeliness of Work.

1. Time is of the Essence. The time of beginning, rate of progress, and time of completion of the Work is of the essence of this Contract.

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Contractor shall be solely responsible for completing the Work in a timely fashion. Contractor shall promptly, continuously, diligently, vigorously, and systematically provide and perform the Work, and all component parts of the Work, within such time or times as may be set forth in this Contract or in the Approved Schedule and to the ends that, and at a rate, with due allowances and contingencies for difficulties or obstructions that may arise out of, or be encountered as a result of, adverse weather conditions, equipment breakdowns, subsurface, underground or other concealed conditions or obstructions, buried structures, utility locations or conditions, adverse soil conditions, and changed site conditions due to work by other contractors, that assures that, all Work, and all component parts of the Work, will be completed and ready for inspection and testing when required pursuant to this Contract and that all Work will be completed in full compliance with, and as required by or pursuant to, this Contract within the Contract Time. Contractor shall cooperate with Owner and Engineer to assure maximum coordination and efficiency in the progress of the Work.

2. Approved Schedule. Unless otherwise provided in the Special Conditions of Contract or the Specifications, Contractor shall submit to Engineer, within 30 Days after the execution of this Contract, a detailed schedule of the Work showing the time of beginning and completion for at least every major component of the Work. Such schedule shall be presented in graphical form using the bar graph method or a time-sequence method, but not a critical path method. Such schedule shall logically and realistically relate the performance of each component of the Work to each other component of the Work and to the whole of the Work so as to demonstrate that sufficient time has been allowed for the completion of each component without interference or delay from or to any other component and with due allowances and contingencies for difficulties or obstructions that may arise out of, or be encountered as a result of, adverse weather conditions, equipment breakdowns, subsurface, underground or other concealed conditions or obstructions, buried structures, utility locations or conditions, adverse soil conditions, and changed site conditions due to work by other contractors. The schedule shall demonstrate Contractor's ability to comply with the requirements of Paragraph 1.1B1 above. Engineer shall return a copy of the schedule to Contractor with such exceptions noted as Engineer may deem appropriate and Contractor shall submit a revised schedule to Engineer within two business days. If acceptable, Engineer shall return a copy of the schedule to Contractor with no exceptions noted or an equivalent notation ("Approved Schedule"). Engineer may require the Approved Schedule to be revised or updated as frequently as Engineer may deem necessary prior to Final Acceptance of the Work.

3. No Liability. Review and stamping of any Approved Schedule by Engineer shall not constitute approval or acceptance of the schedule or an extension or waiver of the Contract Time and no review by Engineer, no noting of an exception by Engineer, and no failure to note an exception by Engineer shall relieve Contractor of the entire responsibility for the performance of the Work in full compliance with the requirements of this Contract within the Contract Time. Engineer's review and stamping, with or without exceptions noted, of any Approved Schedule shall not be regarded as an any assumption of risk or liability by Owner or Engineer. Contractor shall have no claim

GENERAL CONDITIONS

under this Contract on account of any error, omission, or defect in, or revealed by, any Approved Schedule so reviewed and stamped or any failure, partial failure, or inefficiency of any Approved Schedule so reviewed and stamped. Engineer's stamping of any Approved Schedule with no exception noted or an equivalent notation shall be considered to mean merely that Engineer has no objection to Contractor proceeding, upon its own full responsibility and liability, with the schedule or schedules proposed.

4. Acceleration. If, at any time, the Work, or any component part of the Work, is behind the Approved Schedule, Contractor shall initiate immediate and definite procedures for accelerating the Work as required to bring the Work, and all component parts of the Work, into compliance with the Approved Schedule. Owner shall not be subject to any claims, demands, or liability for Contractor's acceleration damages or costs incurred to keep the Work in compliance with the Approved Schedule, including, but not limited to, damages or costs resulting from, arising out of, or in any way related to increases in time- related costs; increases in costs of labor, equipment, materials, or supplies; costs of additional personnel; costs of additional equipment; costs of additional premium time for personnel or equipment; increase in costs for Bond or insurance premiums; lower labor productivity; lost profits or alternative income; effects on other contracts; and costs of demobilization and remobilization. Failure of Owner or Engineer to inform Contractor that Contractor is behind the Approved Schedule or to direct and enforce procedures to ensure compliance with the Approved Schedule shall not relieve Contractor of the entire responsibility for the performance of the Work in full compliance with the requirements of this Contract within the Contract Time.

5. Owner's Right to Perform Work. Any failure of Contractor to comply with this Subsection 1.1B shall entitle Owner to perform or have performed all Work necessary for compliance with this Subsection and to withhold or recover from Contractor the cost of such Work.

C. Completeness of Work. Except for such items as are expressly and specifically required by this Contract to be furnished by Owner, Contractor shall provide at the Work Site, and at no charge to Owner other than the Contract Price, all personnel, equipment, materials, supplies, and other things required to provide, perform and complete the Work described, shown, or reasonably implied, or inferred from prevailing custom or trade usage as being required to produce the results intended, in this Contract. If any personnel, equipment, materials, or supplies that are not directly or indirectly set forth in this Contract are nevertheless necessary to the proper provision, performance, and completion of the whole of the Work in accordance with the intent of this Contract, Contractor shall understand such personnel, equipment, materials, or supplies to be implied and shall provide such personnel, equipment, materials, or supplies as fully as if it were particularly described. Without limiting the foregoing, Contractor, at its sole cost and expense, shall: (1) arrange for a supply of water, heat, light, power, telecommunications, and other services needed for the Work and for testing, including the installation of temporary utility lines, wiring, switches, fixtures, hoses, connections, and meters; (2) provide and maintain sanitary conveniences of sufficient number to accommodate all workers and all personnel of Owner and Engineer engaged in or about

GENERAL CONDITIONS

the Work; and (3) provide and maintain a clean, weather-tight office, temporary in character, at a central location at the Work Site, with telephone facilities and service, for use as a field office by Contractor, for storage of Contract Drawings and Specifications, for storage of permits and Required Submittals reviewed with no exception noted, and for shelter of workers.

D. Conformity of Work. Contractor shall, at no increase in the Contract Price, provide workmanship, equipment, materials, and supplies that fully conform to this Contract, notwithstanding the fact that Contractor may have based its Bidder's Proposal on workmanship, equipment, materials, or supplies that do not so conform. When the equipment, materials, or supplies furnished by Contractor cannot be installed as specified in the Contract Drawings or Specifications, Contractor shall, without any increase in the Contract Price, make all modifications required to properly install the equipment, materials, or supplies. Any such modification shall be subject to the prior review and consent of Engineer.

1.2 Engineer's Authority

Engineer has been employed as an independent contractor to represent Owner during the term of this Contract and to observe the Work in progress on behalf of Owner. To prevent delays and disputes and to discourage litigation, it is agreed by Owner and Contractor that Engineer shall, in all cases, determine the amount, quality, acceptability, and fitness of the several kinds of Work that are to be paid for under this Contract; determine all disputes in relation to the true construction, meaning, and intent of the Contract Drawings and Specifications; and determine all disputes in relation to the execution of the Work, the classifications and measurements of quantities and materials, the suitability of equipment, materials, and supplies, and the fulfillment of this Contract. In interpreting this Contract, Engineer shall be subject to Section 1.3 of the Contract Agreement.

Engineer shall have the power to reject or condemn all Work that is defective, flawed, unsuitable, or nonconforming to the terms of this Contract.

Engineer's determination in all matters shall be a condition precedent to an appeal by Contractor to Owner, to the right of Contractor to receive, demand, or claim any money or other compensation under this Contract, and to any liability on the part of Owner to Contractor on account of this Contract.

1.3 Required Submittals

A. Submittals Required. Contractor shall submit to Engineer all documents, data, and information specifically required to be submitted by Contractor under this Contract and shall, in addition, submit to Engineer all such drawings, specifications, descriptive information, and engineering documents, data, and information as may be required, or as may be requested by Engineer, to show the details of the Work, including a complete description of all equipment, materials, and supplies to be provided

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under this Contract ("Required Submittals"). Such details shall include, but shall not be limited to, the kind, size, arrangement and operations of component materials and devices; the external connections, anchorages, and supports required; performance characteristics; test data; concrete reinforcement; structural details; dimensions needed for installation and correlation with other equipment, materials, and supplies; principal dimensions, weight, structural and operating features; space required; clearances; utility connections; wiring and control diagrams; type and/or brand of finish or shop coat; adequate operation and maintenance information for all equipment requiring maintenance or other attention; and all similar matters, for all components of the Work. When it is customary to do so, when the dimensions are of particular importance, or for equipment and materials, the Required Submittals shall be certified by the Supplier as correct for, and in full compliance with, this Contract and meeting intended functions.

B. Number and Format. Except as otherwise provided in the Specifications: Contractor shall provide its Required Submittal with suitable identification; all Required Submittals shall be submitted electronically in PDF format; and all drawings shall be clearly marked in the lower right-hand corner with the names of Owner, Engineer, and Contractor.

C. Verification by Contractor. Contractor shall be responsible for obtaining Required Submittals complying with the foregoing from its Subcontractors and Suppliers and returning reviewed documents to them. Contractor shall check and approve all Required Submittals before submitting them to Engineer for review. Contractor shall check and verify, or resubmit for correction, all Required Submittals prepared by a Subcontractor or Supplier, before submitting them to Engineer. Verification and submission of Required Submittals by Contractor shall be deemed to mean that Contractor has, in fact, reviewed and coordinated the information in the Required Submittals with the requirements of the Work and this Contract. Any Required Submittals submitted to Engineer which have not been checked, reviewed, and stamped "Verified by Contractor" (or its equivalent), will be returned unprocessed.

D. Time of Submission. All Required Submittals shall be provided to Engineer no later than the time, if any, specified in this Contract for their submission or, if no time for submission is specified, in sufficient time, in Engineer's sole opinion, to permit Engineer to review the same prior to the commencement of the part of the Work to which they relate and prior to the purchase of any equipment, materials, or supplies that they describe.

E. Engineer's Review. Engineer shall review all Required Submittals as soon as reasonably possible after their submission and shall have the right to require resubmittal of, and such corrections in and additions to, any or all Required Submittals as may be necessary to make the Required Submittals conform to this Contract.

F. Responsibility for Delay and Costs of Additional Review. Contractor shall be responsible for any delay in the Work due to delay in providing Required Submittals conforming to this Contract. In the event more than one re-submittal of any

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Required Submittal is necessary to make such Required Submittal conform to this Contract, Contractor shall be charged the total cost incurred by Engineer for all subsequent reviews of Required Submittals. If the amount due Contractor is not sufficient to cover such costs, Contractor shall reimburse Owner for such costs upon demand.

G. Condition Precedent to Performance of Work. No Work with respect to which any Required Submittal is required or has been requested, and no Work dependent on any such Work, shall be provided or performed unless and until the Required Submittal for such Work has been reviewed and stamped by Engineer with no exception noted or an equivalent notation. No equipment, materials, or supplies shall be purchased, fabricated, or installed until all Required Submittals pertaining thereto have been reviewed and stamped by Engineer with no exception noted or an equivalent notation. Where samples are required, the samples reviewed and stamped by Engineer with no exception noted or its equivalent notation shall be kept at the Work Site for comparison with, and to establish the standards of acceptance for, equipment, materials or supplies proposed for incorporation into the Work.

H. Incorporation After Review With No Exception Noted. Every Required Submittal that is reviewed and stamped by Engineer with no exception noted or an equivalent notation shall immediately thereupon become a part of the Contract Documents, and the Work shown or described thereby shall be performed in conformity therewith unless otherwise required by Engineer.

I. No Liability. Review and stamping of any Required Submittal by Engineer shall be for the sole purpose of examining the general arrangement, design, and details of the proposed Work, and no review by Engineer, no noting of an exception by Engineer, and no failure to note an exception by Engineer shall relieve Contractor of the entire responsibility for the performance of the Work in full compliance with the requirements of this Contract. Engineer's review and stamping, with or without exceptions noted, of any Required Submittal shall not constitute an approval of any part of the Work shown in such Required Submittal and shall not be regarded as any assumption of risk or liability by Owner or Engineer. Contractor shall have no claim under this Contract on account of any error, omission or defect in, or revealed by, any Required Submittal so reviewed and stamped. Engineer's stamping of any Required Submittal with no exception noted or an equivalent notation shall be considered to mean merely that Engineer has no objection to Contractor proceeding, upon its own full responsibility and liability, with the Work as shown on such Required Submittal.

1.4 Administration of the Work

A. Contractor's Duty to Administer the Work. Contractor shall have full and sole responsibility for administration of the Work. Contractor's field organization shall include fully qualified and adequate management, supervisory and technical personnel to insure competent and expeditious handling of all matters related to the Work. Contractor shall have full and sole responsibility for keeping all personnel, equipment, materials, supplies, and other things required to provide, perform, and complete the Work within the

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designated construction area limits of the Work Site and out of areas not designated for Contractor's use. On all other lands, Contractor shall have no rights unless it obtains them from the proper parties.

Owner shall have the authority to order Contractor to remove from the Work Site any of Contractor's employees or any Subcontractors' employees who fail to discharge responsibilities, refuse to obey instructions, or who are incompetent, abusive, threatening, or disorderly in their conduct. Any such Person so removed shall not be employed again on the Work. No adjustment in the Contract Price or Contract Time shall be made as a result of such removal.

All Subcontractors and Suppliers shall be directly responsible to Contractor and shall be subject to Contractor's supervision and control. Contractor shall have the duty to coordinate all Subcontractors and Suppliers so as to avoid hindrance or interference among them and to ensure that the Work will be completed in full compliance with, and as required by or pursuant to, this Contract and within the Contract Time.

Contractor shall attend, and shall cause any Subcontractor or Suppliers whose attendance is requested to attend, any pre-construction meetings or construction progress meetings as may be necessary for the orderly performance of the Work, as determined by Owner or Engineer.

B. Contractor's Superintendent. Contractor shall appoint and employ throughout the performance of the Work a competent superintendent who shall be approved by Owner in writing and who shall have complete charge of the Work on behalf of Contractor. Contractor's superintendent shall be at the Work Site at all times during performance of the Work. Contractor shall, before beginning the Work, and at all times during the performance of the Work, keep Owner advised in writing of such superintendent's name and address, and of telephone numbers where such superintendent may be reached at all times. Such superintendent shall not be changed without the consent of Owner unless the individual serving in that capacity leaves Contractor's employ or becomes unable to serve due to circumstances beyond the control of Contractor, which shall in no event be construed to include the necessity of employing such Person on any other contract or work. Any substitute superintendent proposed by Contractor shall be approved by Owner in writing. In any case where Owner determines the performance of Contractor's superintendent is unsatisfactory or unacceptable to Owner, Owner shall have the right to require Contractor to remove such superintendent and to replace such superintendent with a new superintendent satisfactory to Owner.

1.5 Conditions at the Work Site; Record Drawings

Contractor shall be fully responsible for conditions found at, and in the vicinity of, the Work Site. Contractor shall have no claim for damages, for compensation in excess of the Contract Price except as expressly provided, and only to the limited extent set forth, in Sections 2.1 through 2.3 of these General Conditions of Contract, or for a delay or extension of the Contract Time based upon conditions found at, or in the vicinity

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of, the Work Site. When information pertaining to subsurface, underground or other concealed conditions or obstructions, soils analysis, borings, test pits, buried structures, utility locations or conditions, conditions of existing structures, and similar site information or data and other investigations is or has been shown or indicated on the Contract Drawings, is or has been provided by Owner or Engineer, or is or has been otherwise made available to Contractor by Owner or Engineer, such information is or has been shown, indicated, provided, or made available solely for the convenience of Contractor and is not part of this Contract. Owner assumes no responsibility whatever in respect to the sufficiency or accuracy of such information, and there is no guaranty or warranty, either expressed or implied, that the conditions indicated are representative of those existing throughout the Work or the Work Site, or that the conditions indicated are representative of those existing at any particular location, or that contractors working on other projects may not change the conditions indicated at, and in the vicinity of, the Work Site, or that unanticipated conditions may not be present.

Contractor shall be solely responsible for locating all existing underground installations by prospecting no later than two workdays prior to any scheduled excavation or trenching or 200 lineal feet in advance of such excavation or trenching, whichever is earlier. Contractor shall, prior to any excavation, notify the proper underground utility locating notification service for the area of excavation (e.g., Joint Utility Locating Information for Excavators (J.U.L.I.E.), (1-800-892-0123), DIGGER, 811), and, with respect to owners or operators of underground utility facilities who are not members of an underground utility locating notification service, shall directly notify such non-member owners or operators and shall otherwise fully comply with the Illinois Underground Utility Facilities Damage Prevention Act, 220 ILCS 50/1 et seq. Contractor shall check all dimensions, elevations, and quantities shown on the Contract Drawings and Specifications within the same time period as set forth above for prospecting underground installations. Contractor shall lay out the Work in accordance with the Contract Drawings and Specifications and shall establish and maintain such locations, lines and levels, except that wherever pre-existing work is encountered, Contractor shall verify and be responsible for dimensions and locations of such pre-existing work. Contractor shall notify Engineer of any discrepancy between the dimensions, elevations and quantities shown on the Contract Drawings and Specifications and the conditions of the Work Site or any other discrepancies which Contractor may discover during such inspections. Contractor shall make any necessary adjustments in the alignment or grade of the Work, subject to Engineer's approval, to pass around, over, or under any obstruction discovered without any equitable adjustment in the Contract Time or, except as expressly provided, and only to the limited extent set forth, in Sections 2.1 through 2.3 of these General Conditions of Contract, the Contract Price.

Contractor shall maintain, during the progress of the Work, up-to-date copies of all Contract Drawings and Specifications and a continuous record of all field deviations from the Contract Drawings. Before Final Acceptance of the Work, Contractor shall submit to Owner two printed sets of Drawings of Record, unless a greater number is specified elsewhere in this Contract, indicating all necessary additions and corrections to the Contract Drawings to show record conditions for verification of Engineer's drawings

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of record. Upon acceptance of Contractor's printed Drawings of Record, Contractor shall also submit to Owner electronic Drawings of Record in electronic CADD files and/or other electronic file format acceptable to Owner operating on an IBM compatible microcomputer under a Windows operating system. Each such drawing and electronic drawing file shall be plainly marked "Drawing of Record" near the title block and shall be certified as to correctness by Contractor.

1.6 Safety of the Work Site

A. Contractor's Responsibility. Contractor shall be solely and completely responsible for providing and maintaining safe conditions at the Work Site, including the safety of all Persons and property during performance of the Work. This requirement shall apply continuously and shall not be limited to normal working hours. Contractor shall take all safety precautions as shall be necessary to comply with all applicable Laws, regulations, and guidelines, including without limitation OSHA, and to prevent injury to Persons and damage to property. Contractor shall employ or hire a competent safety representative or Subcontractor, who is capable of identifying predictable and existing conditions that are unsanitary, hazardous, or dangerous to Persons or property, to devise, supervise and ensure compliance with all safety precautions and programs as shall be necessary to comply with all applicable Laws, regulations, and guidelines, including without limitation OSHA, and to prevent injury to Persons and damage to property. Contractor shall advise Owner, in writing, of such safety representative's name, address, and telephone number or numbers where such safety representative may be reached at all times, 24 hours per Day, and such safety representative shall have full and complete authority to promptly correct or eliminate any such unsanitary, hazardous, or dangerous conditions. Neither Owner nor Engineer shall be responsible for conditions at the Work Site, nor for the safety of Persons or property, during the performance of the Work.

Contractor is advised that potentially hazardous conditions described in the Illinois Health and Safety Act, federal OSHA Regulations and Guidelines, ANSI Standard B30.5-1968 as amended, ANSI Standard Z117.1-1995 as amended, and Illinois Department of Labor Rules and Regulations, could be encountered during the performance of the Work, including without limitation energized electrical facilities and overhead wires; cranes, derricks, and other hoisting machinery with operational and use limitations, special hazard warnings and instructions, and revolving superstructures requiring proper barricading; underground utility facilities requiring protection, support, or removal to safeguard employees; excavations requiring, among other things, safe means of egress and protection from cave-ins, fall-ins, hazardous atmospheres, hazardous substances, and other hazardous conditions; and confined or enclosed spaces that are subject to the accumulation of hazardous substances or toxic or flammable contaminants or that have oxygen deficient or other hazardous atmospheres, requiring, among other things, independent fall protection, respiratory equipment, ventilation, two-way communication with the outside, and safe means of egress. Contractor should take special notice of the potentially hazardous conditions identified in this paragraph and take all necessary precautions to guard against such potential hazards, including without

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limitation conducting employee safety training and education, posting warnings and instructions, testing and inspecting, and utilizing adequate protective and emergency systems, equipment, and devices, in as much safety remains Contractor's sole responsibility under this Contract. Contractor is directed to the Illinois Health and Safety Act, federal OSHA Regulations and Guidelines, including without limitation Occupational Safety & Health Standards and Construction Industry Safety & Health Regulations as outlined in Parts 1910 and 1926 of US Dept. of Labor Chapter XVII - Occupational Safety and Health Administration, Title 29, and US Dept. of Labor Document OSHA 2202 "OSHA Safety and Health Standards Digest," ANSI Standard B30.5-1968 as amended, ANSI Standard Z117.1-1995 as amended, and Illinois Department of Labor Rules and Regulations for a further description of these potentially hazardous conditions and the regulations applicable thereto.

Contractor is being notified of these potentially hazardous conditions so that Contractor may independently assess the potentially hazardous conditions and take the necessary precautions to ensure a safe workplace pursuant to this Contract and Contractor's legal obligations. Owner's notification of these potentially hazardous conditions should not be construed to be, nor interpreted as, an exclusive listing of the potentially hazardous conditions that could be encountered during the performance of the Work but, rather, such notice shall be construed to be, and interpreted as, exemplary only. Owner's notification of these potentially hazardous conditions should not be construed or interpreted as waiving Contractor's sole and complete responsibility for conditions at the Work Site or for providing and maintaining safe conditions at the Work Site, including the safety of all Persons and property during performance of the Work. This notification of potentially hazardous conditions is provided solely to assist Contractor in the performance of these duties, in the interest of maximum safety.

B. Confined Spaces. Even though the Contractor is required to independently assess the potentially hazardous conditions at the Work site or sites and take the necessary precautions to ensure a safe workplace pursuant to the Contract and the Contractor's legal obligations, when the Contractor is advised that the Owner has designated a particular Work site or sites as a permit-required confined space because the space has limited means of egress and other hazardous conditions exist such as electricity and the space may be subject to the accumulation of toxic gasses, flammable gasses, combustible materials, or engulfing substances, or be subject to oxygen deficient or oxygen enriched atmospheres, requiring (i) equipment, including without limitation continual atmospheric testing equipment and supplied air respiratory equipment, (ii) mechanical ventilation, (iii) two-way communication with the outside, (iv) body harnesses and personnel retrieval systems, and (v) rescue services, entry into such permit-required confined space shall be only through compliance with a confined space entry permit program meeting the requirements of OSHA and other applicable law. In such case, the Owner will inform the Contractor of the precautions and procedures that the Owner has implemented for the protection of the Owner's employees in or near the Work site or sites where the Contractor's personnel will be working. The Contractor shall inform the Owner of the precautions and procedures that the Contractor has implemented for the protection of the Contractor's employees in or near the Work site or sites, including the confined

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space permit entry program that the Contractor will follow and of any hazards confronted or created while working in the Owner's designated permit-required confined spaces. When both Contractor and Owner personnel will be working simultaneously in or near Owner's designated permit-required confined spaces, the Owner and the Contractor shall coordinate entry operations as required by OSHA and other applicable law.

C. Energized Electrical Work/Energy Control Programs and Procedures. When working on or in the vicinity of electrically, hydraulically, pneumatically, kinetically, mechanically, thermally, and/or other energized facilities, it would be reasonable to assume that hazardous electrical voltage and current may be present, and unexpected energization, start up, or release of stored energy may occur, at any time during the Work. The Contractor shall not rely upon the Owner's energized electrical work or energy control program and procedures or the Owner's placement of lockout/tagout devices, the Owner's verification of isolation, deenergization, and readiness of the Work site or sites for release from lockout/tagout, or the Owner's notification of affected employees. The Contractor shall independently affix its own lockout/tagout devices, independently verify isolation, deenergization, and readiness of the Work site or sites for release from lockout/tagout, and independently notify affected employees in accordance with the Contractor's own electrical safety work practices and energy control program and procedures, and as required by OSHA and other applicable law. The Owner and the Contractor shall inform each other of their respective lockout/tagout programs and procedures and the Owner shall instruct its employees to comply with the restrictions and prohibitions of the Contractor's energy control program and procedures. Finally, the Contractor shall provide, by its own designation, only "Qualified Workers" to perform energized electrical Work and shall provide its own PPE for such Work including, but not limited to: flame resistant clothing, rubber insulated work gloves, rubber insulating blankets, electrically safe eyewear/safety glasses, arc flash protective head/face shields, switching hoods, arc-flash protection suits and thermo gloves, certified voltage testing equipment, dielectric footwear, dielectric hard hats, and hearing protection for work on potentially energized electrical circuits, as appropriate for the hazard risk category as determined by the Contractor.

D. Hot Work. Hot Work (any temporary operation involving open flames or producing smoke, heat, slag, and/or sparks, including without limitation brazing, cutting, grinding, soldering, torch heating, and welding) shall only be performed through compliance with a Hot Work program meeting the requirements of OSHA and other applicable law. When the Work site or sites is owned by the Owner, the Owner shall notify the Contractor of any unique or concealed flammable materials or any undisclosed potentially hazardous conditions of which it is aware, and the Contractor shall obtain the approval of the Owner's Manager of Water Operations prior to performing any Hot Work within such Work site or sites. At all Work sites, regardless of ownership, the Contractor shall independently make its own determination as to the presence or absence of flammable materials and hazardous conditions in the area(s) where such Hot Work will be performed, even when the Owner has notified the Contractor of any unique or concealed flammable materials or any undisclosed potentially hazardous conditions of which it is aware; the Contractor shall independently secure authorization from its own

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supervisory and management personnel who have been designated by the Contractor as responsible for authorizing Contractor's Hot Work; and the Contractor shall comply with any safety precautions imposed by such persons, including without limitation:

- a. Making areas where Hot Work is to be performed fire safe by either changing the location of the Hot Work or by removing or guarding against fire hazards;
- b. Employing supervisors, cutters, welders, and fire watchers that have been effectively trained in (i) the safe use and operation of the relevant equipment and processes (brazing, cutting, grinding, soldering, torch heating, welding, ventilating, fire protection, extinguishing, watching, and warning, etc.) and (ii) the need for, and the appropriate use and protective level of, PPE;
- c. Maintaining suitable brazing, cutting, grinding, soldering, torch heating, welding, ventilating, fire protection, extinguishing, warning, etc. equipment on-site in good working condition; and
- d. Posting adequate warnings.

The Contractor shall not rely upon the Owner's Hot Work practices, programs, or procedures at the Work sites owned by the Owner, or the Owner's verification of readiness for Hot Work of the Work sites owned by the Owner, or the Owner's placement of fire extinguishers, ventilation equipment, warning signs, or fire watches at the Work sites owned by the Owner. The Contractor shall independently verify the readiness of all of the Work sites for Hot Work and independently place fire extinguishers, ventilation equipment, warning signs, and fire watches in accordance with the Contractor's Hot Work practices, programs, and procedures, and as required by law.

E. Hazardous Chemicals. The Contractor shall not use or store hazardous chemicals in such a way that the Owner's employees may be exposed to such hazardous chemicals. Whenever hazardous chemicals are used or stored by the Contractor in such a way that employees of the Owner may be exposed to such hazardous chemicals, the Contractor shall inform the Owner of (i) the precautions and procedures that the Contractor has implemented for the protection of its own employees exposed to such hazardous chemicals in or near the location(s) where Owner personnel will be working and (ii) the labeling system that the Contractor uses to label hazardous chemical containers. In addition, the Contractor shall provide the Owner with a copy of the most current SDS for such hazardous chemicals and access to the central SDS binder maintained by the Contractor.

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Whenever hazardous chemicals are used or stored by the Owner in such a way that employees of the Contractor may be exposed to such hazardous chemicals, the Owner shall inform the Contractor of (i) the precautions and procedures that the Owner has implemented for the protection of its own employees exposed to such hazardous chemicals in or near the location(s) where Contractor personnel will be working and (ii) the labeling system that the Owner uses to label hazardous chemical containers. In addition, the Owner shall provide Contractor with access to the central SDS binder maintained by Owner.

F. Fire Protection. Access to sources of water for fire protection shall be identified and be available at all times. Fire hydrants and stop valves adjacent to the Work shall be kept clear and readily accessible to fire apparatus and no materials or other obstruction shall be placed, parked or stored within 15 feet of any hydrant or stop valve except by special permission of the proper authorities.

Only construction procedures that minimize fire hazards to the extent practicable shall be used. There shall be no open burning or confined trash fires. Combustible debris and waste materials shall be collected or removed from the Work Site each workday. Fuels, solvents, and other volatile or flammable materials shall be stored away from construction and storage areas in well-marked, safe containers. Good housekeeping, essential to fire prevention, shall be practiced by Contractor throughout the Work.

G. Safety-Related Equipment. The Contractor shall not use, nor be entitled to use, any of the Owner's safety-related equipment, including without limitation: The Owner's fall-protection, fall-restraint, or fall-arrest equipment; the Owner's ladders or work platforms, forklifts, movable or overhead cranes, or other materials handling equipment; the Owner's confined space entry equipment, including gas monitors, ventilation equipment, or personnel retrieval systems; or the Owner's ventilators, fire extinguishers, or personnel rescue systems.

H. Accident Records; Insurance Adjusters. Contractor shall maintain an accurate record of all accidents and other incidents resulting in death, injury, or occupational disease to any Person or in damage to, or loss of, any property and shall promptly report any such accident or incident to Owner and shall provide Owner with copies of all correspondence and pleadings related thereto, including insurance claims and settlements. Contractor shall arrange for Contractor's insurance adjuster to meet with any Person affected by any such accident or other incident promptly and, in all events, within 48 hours after Contractor's receipt of notice from such Person, and a report of the insurance adjuster's findings shall be delivered to such Person within 10 days thereafter, copies of which shall be provided to Owner and Engineer.

1.7 Cleanliness of the Work Site and Environs

Contractor shall keep the Work Site and adjacent areas clean at all times during performance of the Work and shall remove and properly dispose of all waste and

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surplus materials from the Work Site each workday in such a manner as may be necessary to conform to Law. Contractor shall sweep and clean, and shall remove from the Work Site all hoses, cables, extension cords and similar materials, as may be necessary to leave the Work Site and adjacent areas in a clean and orderly condition at the end of each workday. If Contractor fails to comply with its obligations under this Section, Owner shall have the right to perform, or to have performed, such obligations and to withhold or recover the cost thereof from Contractor.

1.8 Damage to the Work, the Work Site, and Other Property

The Work and everything pertaining thereto shall be provided, performed, completed, and maintained at the sole risk and cost of Contractor from the Commencement Date until Final Payment. Contractor shall be responsible and liable for any damages, losses, and injuries resulting from its operations. Contractor shall be fully responsible for the protection of all public and private property and all Persons. Without limiting the foregoing, Contractor shall, at its own cost and expense, (1) provide temporary heating, covering and enclosures, to the satisfaction of Engineer, as necessary to protect the Work against damage by dampness and cold, to dry out the Work, and to facilitate the completion of the Work; (2) provide all permanent and temporary shoring, anchoring and bracing required by the nature of the Work, in order to make all parts absolutely stable and rigid, even when such shoring, anchoring and bracing is not explicitly specified; and (3) support and protect all buildings, bridges, roadways, conduits, wires, water pipes, gas pipes, sewers, pavements, curbs, sidewalks, fixtures and landscaping of all kinds and all other public or private property that may be encountered or endangered in providing, performing and completing the Work.

Contractor shall have no claim against Owner because of any damage or loss to the Work or to Contractor's equipment, materials, or supplies from any cause whatever, including damage or loss due to simultaneous work by others.

Contractor shall, promptly and without charge to Owner, repair or replace, to the satisfaction of Owner, any damage done to, and any loss suffered by, the Work and any damage done to, and any loss suffered by, the Work Site or other property as a result of the Work.

No specific provision of this Contract to the effect that Contractor shall be responsible and liable at its sole risk and cost for the Work or any part thereof or for damage, loss, or injury caused by Contractor shall be construed to be an exclusive listing of the circumstances in which Contractor bears such responsibility and liability, but, rather, all such provisions shall be construed to be exemplary only.

Notwithstanding any other provision of this Contract, Contractor's obligations under this Section shall exist without regard to, and shall not be construed to be waived by, the availability or unavailability of any insurance, either of Owner or Contractor, to indemnify, hold harmless, or reimburse Contractor for the cost of any repair or replacement work required by this Section.

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1.9 Subcontractors and Suppliers

A. Approval and Use of Subcontractors and Suppliers. Contractor shall perform the Work with its own personnel and under the management, supervision, and control of its own organization unless otherwise approved by Owner in writing, which approval Owner may exercise and revoke in its sole discretion. All Subcontractors, Suppliers, and Subcontracts used by Contractor shall be acceptable to, and approved in advance by, Owner. All Persons engaged in the Work, whether or not as approved Subcontractors, shall be deemed to be employees of Contractor for all purposes and Contractor hereby assumes, in addition to any liability imposed by law upon Contractor for its Subcontractors, full responsibility and liability for such Subcontractors as if they were the employees of Contractor. Nothing in this Contract shall be construed to create any contractual relationship between Owner and any Subcontractor or Supplier. All relations with approved Subcontractors and Suppliers shall be the responsibility of Contractor, and Owner shall not be responsible or obligated to deal directly with any Subcontractor or Supplier.

Contractor is responsible for providing, performing, and completing all Work that meets or exceeds specified requirements notwithstanding specific references in the Contract Drawings or Specifications to duties and obligations of other contractors, Subcontractors, Suppliers, manufacturers, trades, etc., all at no extra cost to Owner other than the Contract Price. All such duties and obligations specifically imposed upon such other contractors, Subcontractors, Suppliers, manufacturers, trades, etc., shall be deemed to be imposed upon Contractor.

Owner's approval of any Subcontractor, Supplier, or Subcontract shall not relieve Contractor of full responsibility and liability for the provision, performance, and completion of the Work in full compliance with, and as required by or pursuant to, this Contract on or before the Completion Date or for the proper performance of all other requirements of this Contract, or for Contractor's liability on all representations and warranties made in or pursuant to this Contract. Contractor shall remain as fully responsible and liable for the acts, omissions, and performance of all Subcontractors and Suppliers as Contractor is for its own acts, omissions, and performance.

If Owner refuses to approve any Subcontractor or Supplier, or, having once approved a Subcontractor or Supplier, thereafter advises Contractor that such Subcontractor or Supplier is no longer acceptable to Owner, then Contractor shall undertake the Work itself or propose another Subcontractor or Supplier for Owner's approval. No adjustment of the Contract Price or Contract Time shall be made as a result of Owner's refusal to approve, or Owner's revocation of any approval of, any Subcontractor or Supplier.

This Section shall not be construed to prohibit Owner, if and when it exercises any of its rights under Section 6.6 of these General Conditions of Contract, from entering into an independent contractual relation with any Subcontractor or Supplier employed by Contractor, and no such relation shall be construed as interfering with any

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Subcontract or other relation Contractor may have with such Subcontractors and Suppliers.

B. Subcontractor and Supplier Requirements. In addition to any and all conditions and other requirements that may be imposed by Owner in its approval of any Subcontractor or Supplier, all Work performed under any Subcontract shall be subject to the same provisions set forth in this Contract for the Work performed by Contractor. Furthermore, every Subcontract shall include at least the following provisions:

1. Flow-down. A statement that this Contract has been reviewed by the Subcontractor or Supplier; that Subcontractor or Supplier agrees to be bound by the terms, provisions and conditions of this Contract so far as they are applicable to the Work under its Subcontract; that Subcontractor or Supplier agrees to assume all obligations and responsibilities of Contractor under this Contract; and that Subcontractor or Supplier agrees to be bound by and governed by any change or alteration in this Contract.
2. Discrimination. The provisions of the Public Works Employment Discrimination Act, 775 ILCS 10/1 et seq., shall be printed or otherwise inscribed on the face of the Subcontract.
3. Laws. A statement substantially identical to Section 6.11 of the Contract Agreement requiring Subcontractor or Supplier to comply with all Laws.
4. Application of Payments. A statement that Subcontractor or Supplier agrees that all funds received directly or indirectly from Owner shall be applied to the payment or reimbursement of the costs for which they were paid and not to any preexisting or unrelated debt between Contractor and Subcontractor or Supplier.
5. No Compensation for Delay. A statement substantially identical to Subsection 2.3D of these General Conditions of Contract to the effect that there shall be no payment, compensation, damages, or adjustment of any kind, other than an extension of time, because of hindrances or delays, whether avoidable or unavoidable, from any cause in the commencement, provision, performance, or completion of the Work under the Subcontract.
6. Termination for Convenience of Contractor. A statement that the Subcontract may be terminated for the convenience of

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Contractor, if this Contract is terminated for any reason by Owner or if Owner exercises its right to require termination of the Subcontract; provided, however, that no such termination shall defeat Owner's rights under Paragraph 1.9B7 below.

7. Conditional Assignment. A statement that Subcontractor or Supplier agrees to the assignment of the Subcontract to Owner, at Owner's option exercised by written notice to Subcontractor or Supplier and without further action, if this Contract is terminated by Owner and that no such assignment shall be construed as interfering with Subcontractor's or Supplier's Subcontract with Contractor.
8. Dispute Resolution. A statement that in case of any dispute or claim between Subcontractor or Supplier and Contractor involving Owner, or between Contractor and Owner involving Subcontractor or Supplier, Subcontractor or Supplier agrees to be bound by the provisions in this Contract pertaining to the resolution of disputes to the same extent that Contractor is bound to Owner by the terms of this Contract; and that Subcontractor or Supplier agrees to be bound by any and all decisions or determinations made thereunder as authorized in this Contract; and that Subcontractor or Supplier agrees to join in, or consolidate any claim it may have with, any related pending dispute resolution proceeding or to allow such joinder or consolidation of other related claims with its claim; and that Subcontractor or Supplier agrees that, pending the final disposition of any dispute or claim under or in any way relating to the Subcontract, Subcontractor or Supplier shall proceed diligently with all Work to be performed by it under its Subcontract.
9. Representations and Warranties. A statement of representations and warranties substantially identical to Article III of the Contract Agreement.

1.10 Simultaneous Work By Others

A. By Owner. Owner shall have the right to perform or have performed such other work as Owner may desire in, about, or near the Work Site during the performance of the Work by Contractor.

B. Coordination. Contractor shall make every reasonable effort to perform the Work in such manner as to enable both the Work and such other work to be completed without hindrance or interference from each other. Contractor shall keep itself informed of the progress and the detail of such other work; shall afford Owner and other

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contractors reasonable opportunity for the execution of such other work; shall properly connect and coordinate the Work with such other work; and shall notify Engineer immediately of lack of progress or defective workmanship in the provision, performance, or completion of such other work in any case where such lack of progress or defective workmanship will or may interfere with the Work or the operations of Contractor or its Subcontractors. Whenever there is a conflict between the Work and such other work, Engineer shall, upon request of Contractor or the Person performing such other work, determine the manner in which such conflict shall be resolved or accommodated. Contractor shall proceed at its own risk in the event Contractor fails to request such determination from Engineer.

C. By Others. Contractor acknowledges that other contractors not under the direction or control of Owner may be encountered in the performance of the Work by Contractor. Contractor shall perform the Work in such a manner as to enable both the Work and the work of such other contractors to be completed without hindrance or interference from each other.

D. Changes. If other contractors, regardless of whether such contractors are under the direction or control of Owner or are not under the direction or control of Owner, change the conditions found at, or in the vicinity of, the Work Site, both Contractor and Owner shall treat the new conditions as if they were previously existing conditions. Owner shall not be entitled to any credits and Contractor shall not be entitled to any equitable adjustment in the Contract Price as a result of such changes except as expressly provided, and only to the limited extent set forth, in Sections 2.1 through 2.3 of these General Conditions of Contract.

E. Claims. If the Work or any of Contractor's operations or property is damaged by any other Person, Contractor shall make its claim directly against such Person. If a dispute develops between Contractor and any such other Person concerning the responsibility for any such damage, the dispute shall be resolved with such other Person by whatever method may be available and appropriate, but such dispute shall not be cause for delay in the restoration of the damaged Work, and Contractor shall restore the Work immediately. Failure of Contractor to comply with this Subsection shall entitle Owner to perform, or to have performed, all Work necessary for compliance with this Subsection and to withhold or recover from Contractor the cost of such Work.

1.11 Occupancy Prior to Final Acceptance

Owner shall have the right, at its election, to occupy, use, or place in service any part of the Work prior to Final Acceptance of the Work. Such occupancy, use, or placement in service shall be conducted in such manner as not to damage any of the Work or to unreasonably interfere with the progress of the Work. No such occupancy, use, or placement in service shall be construed as an acceptance of any of the Work or a release or satisfaction of Contractor's duty to insure and protect the Work, nor shall it be considered as an interference with Contractor's provision, performance, or completion of the Work.

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1.12 Suspension or Termination of Work for Convenience

A. Suspension for Convenience. Owner shall have the right at any time, by Change Order, for its convenience, to suspend, for such period of time as may be determined by Owner to be necessary or desirable for the convenience of Owner, and thereafter to require resumption of, the whole or any part of the Work, without invalidating the provisions of this Contract. Contractor shall not be entitled to any equitable adjustment in the Contract Price as a result of any such suspension for convenience of Owner.

B. Termination for Convenience. Owner shall have the right at any time, by Change Order, for its convenience, to terminate the Work in whole or in part.

C. Owner's and Contractor's Obligations. Every Change Order issued pursuant to Subsection 1.12A or Subsection 1.12B shall state the extent and effective date of such termination or suspension. On such effective date, Contractor shall, as and to the extent directed, stop Work under this Contract, cease all placement of further orders or Subcontracts, terminate or suspend Work under existing orders and Subcontracts, cancel any outstanding orders or Subcontracts that can be canceled, and take any action necessary to protect any property in its possession in which Owner has or may acquire any interest and to dispose of such property in such manner as may be directed by Owner.

D. Payments for Completed Work. In the event of any termination pursuant to Subsection 1.12B above, Owner shall pay Contractor (1) such direct costs, determined in accordance with generally accepted accounting practices in the construction industry, consistently applied, and excluding overhead, as Contractor shall have paid or incurred for all Work done in compliance with, or as required by or pursuant to, this Contract up to the effective date of termination, together with ten percent of such costs for overhead and profit; and (2) such other costs pertaining to the Work, exclusive of overhead and profit, as Contractor may have reasonably and necessarily incurred as the result of any such termination. The total payment to be made to Contractor by reason of such termination shall not in any event exceed a percentage of this Contract equal to the proportion that the Work completed prior to the effective date of termination bears to the total Work required by this Contract. Any such payment shall be offset by any prior payment or payments and shall be subject to Owner's rights to withhold or deduct as provided in this Contract.

1.13 Charge for Overtime Engineering

Owner shall have the right to charge Contractor for engineering and inspection services in connection with any Overtime Work. Such charge shall be equal to the total cost incurred by Engineer for the number of Engineer's personnel reasonably required to be present during such Overtime Work. If the amount due Contractor is not sufficient to cover such charge, Contractor shall reimburse Owner upon demand. For purposes of this provision, Overtime Work shall mean any Work conducted beyond the working hours specified in the Special Conditions of Contract.

ARTICLE II
CHANGES AND DELAYS

2.1 Changes

A. Field Adjustments. No equitable adjustment shall be made in the Contract Price, and no Change Order, other than a possible Balancing Change Order pursuant to Paragraph 5.1C2 of these General Conditions of Contract, shall be issued, for field adjustments in the Work ordered by Owner or resulting from, arising out of, or in any way related to, conditions found at, or in the vicinity of, the Work Site, including subsurface, underground or other concealed conditions or obstructions, buried structures, utility locations or conditions, adverse soil conditions, changed site conditions due to work by other contractors, and similar site conditions, that, in combination with all Change Orders and all other field adjustments, increase the quantity of any Unit Price Item by 20 percent or less of the approximate quantity for that Unit Price Item set forth in the Schedule of Prices, or increase the quantity of discrete units comprising any lump sum component part of the Work by 20 percent or less of the quantity of discrete units comprising that lump sum component part of the Work set forth in the Breakdown Schedule, as the case may be. Contractor shall be solely responsible for dealing with such field adjustments and Owner shall not be entitled to any credits and Contractor shall not be entitled to any equitable adjustments in the Contract Price as a result of such field adjustments. For Work to be paid on a Unit Price basis, any such increases in the quantity of any Unit Price Item shall be paid for at the respective Unit Price for each such Unit Price Item set forth in the Schedule of Prices. For lump sum Unit Prices, the percentage of increase, and the amount to be paid for such field adjustments, shall be determined on the basis of the number of discrete units comprising such lump sum Unit Price Item set forth in the Breakdown Schedule for that lump sum Unit Price Item. For Work to be paid on a lump sum basis, no amounts shall be paid for such increases in any lump sum component part of the Work other than the lump sum amount included in the Breakdown Schedule for that lump sum component part of the Work.

B. Change Orders. Owner shall have the right to issue Change Orders to Contractor without the consent of Contractor and without notice to any surety of Contractor. Owner shall also issue Change Orders making an equitable adjustment in the Contract Price for any field adjustment as set forth in Subsection 2.1A above that, in combination with all Change Orders and all other field adjustments pursuant to Subsection 2.1A above, increase the quantity of any Unit Price Item by more than 20 percent of the approximate quantity for that Unit Price Item set forth in the Schedule of Prices, or increase the quantity of discrete units comprising any lump sum component part of the Work by more than 20 percent of the quantity of discrete units comprising that lump sum component part of the Work set forth in the Breakdown Schedule, as the case may be, but only for that portion of Work that exceeds 120 percent of said quantity or discrete units comprising a lump sum component part of the Work. For lump sum Unit Prices, the percentage of increase shall be determined on the basis of the number of discrete units comprising such lump sum Unit Price Item set forth in the Breakdown Schedule for that lump sum Unit Price Item.

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Contractor shall promptly comply with every Change Order, notwithstanding any disputes or objections concerning such Change Order. No Change Order shall be construed to invalidate this Contract not to entitle Contractor to additional compensation except and only to the extent provided in Sections 2.2 and 2.3 below.

No Balancing Change Order issued pursuant to Paragraph 5.1C2 of these General Conditions of Contract shall constitute, be deemed to be, or operate as, an equitable adjustment in the Contract Price.

C. Classification. For purposes of Subsections 2.1A and 2.1B above, in determining whether an equitable adjustment in the Contract Price shall be made based upon any field adjustment, any increase in any component part of the Work included or subsumed within a Unit Price Item as defined in the Contract Drawings and Specifications, or included or subsumed within a discrete unit comprising a lump sum component part of the Work set forth in the Breakdown Schedule, as the case may be, shall be classified under such Unit Price Item or discrete unit, and the fact that Contractor uses a different method of providing, performing, and completing such field adjustment than originally contemplated shall not be a basis for not classifying such Work under one or more of the Unit Price Items set forth in the Schedule of Prices, or under one or more of such discrete units set forth in the Breakdown Schedule, as the case may be.

2.2 Equitable Adjustments

Subject to the limitations set forth in this Article II, if any Change Order causes an increase or decrease in the amount of the Work or if a Change Order is required to be issued for certain field adjustments as set forth in Subsection 2.1B above, an equitable adjustment in the Contract Price or Contract Time may, upon the request of either Owner or Contractor, be made pursuant to Section 2.3 or Section 2.4 of these General Conditions of Contract.

Any Change Order issued that does not include an equitable adjustment in the Contract Price or Contract Time shall be construed to be a determination by Owner that Contractor is not entitled to any equitable adjustment by reason of such Change Order. All claims by Contractor for an equitable adjustment in either the Contract Price or the Contract Time based on a Change Order shall be made, whenever feasible, before Contractor proceeds with any Work pursuant to such Change Order and shall, in all events, be made no later than two business days after receipt of such Change Order. All such claims shall, if not made prior to such time, be conclusively deemed to have been waived. Any claims by Contractor for an equitable adjustment in the Contract Price or Contract Time that have not been included, or fully included, in a Change Order shall not relieve Contractor of its responsibility to proceed without delay to perform the Work in compliance with the Change Order.

No equitable adjustment shall be made in the Contract Price or Contract Time on the basis that the Work is, or has become, more difficult than Contractor's Price Proposal would reflect or because of any risk or change in the Work that Contractor is

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responsible for dealing with under this Contract without any equitable adjustment in the Contract Price or Contract Time as set forth in Subsection 2.1A above and in Subsection 2.4A below.

2.3 Contract Price Adjustments

A. Increased Work. If any Change Order causes an increase in the amount of the Work or if a Change Order is required to be issued for certain field adjustments as set forth in Subsection 2.1B above ("Increased Work"), then Engineer shall determine, and include in such Change Order, subject to the limitations of Sections 2.1 and 2.2 above, the amount of the equitable adjustment in Contract Price, if any, to be allowed. Such determination shall be made as follows:

1. Unit Prices. If the Schedule of Prices provides Unit Prices and if the Increased Work or any part thereof that can be classified under one or more of the Unit Price Items set forth in the Schedule of Prices, then such Increased Work or part thereof classified under such Unit Price Item shall be paid for at the Unit Price listed in the Schedule of Prices for such Unit Price Item unless, for good cause shown, Contractor and Owner agree upon either a greater or lesser Unit Price for such Increased Work or part thereof or unless Owner, in its sole discretion, elects not to pay for the Increased Work or part thereof on the basis of Unit Prices, in which event, such Increased Work shall be paid for as set forth in either Paragraph 2.3A2 or Paragraph 2.3A3 below.
2. Agreed Prices. If the Schedule of Prices does not provide Unit Prices or if the Increased Work or any part thereof cannot be classified under one or more of the Unit Price Items set forth in the Schedule of Prices or if Owner elects, pursuant to Paragraph 2.3A1 above, not to pay for the Increased Work or part thereof on the basis of Unit Prices, then such Increased Work or part thereof shall be paid for on the basis of such lump sum price or such time and material prices as Owner and Contractor may agree prior to the commencement of such Increased Work unless Owner elects, in its sole discretion, to pay for such Increased Work or part thereof as set forth in Paragraph 2.3A3 below.
3. Reasonable Cost Plus. Any Increased Work or part thereof not paid for pursuant to Paragraphs 2.3A1 or 2.3A2 above shall, to the extent entitled to be paid for pursuant to this Contract, be paid for at the reasonable cost of such Increased Work or part thereof, as determined by Engineer and

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approved by Owner, in the manner provided in this Paragraph.

Except as hereinafter limited, the reasonable cost of Increased Work shall include the reasonable cost, as determined by Engineer and approved by Owner, to Contractor of all personnel employed and all equipment, materials, and supplies used, on the Increased Work for the period of such employment or use.

The reasonable cost of Increased Work shall include amounts paid, if any, for Social Security, insurance such as workers' compensation, other direct assessments upon Contractor's payroll by authorized public agencies, and other approved assessments such as union benefits not normally included in payments made directly to employees but customarily recognized as part of the payroll cost of doing the Work.

The reasonable cost of Increased Work shall not include insurance not directly related to payroll expenses such as liability insurance or property damage insurance.

The reasonable cost of Increased Work shall not include the cost of any purchase or rental of any buildings or small tools.

The reasonable cost of Increased Work shall not include the cost of any personnel above the level of foreman or the cost of Contractor's office and engineering staff.

The reasonable cost of all equipment used on the Increased Work shall be based upon the monthly rental rates set forth in the most recent edition of "RENTAL RATE BLUEBOOK FOR CONSTRUCTION EQUIPMENT" published by Nielson/DATAQUEST or a similar publication approved by Engineer (the "Approved Rate"). The reasonable hourly cost of equipment shall be calculated by multiplying the Approved Rate (without consideration of overtime charges or charges for fuel and oil) by 12 and dividing the product by 2,080. If the Increased Work requires the use of equipment not already on the Work Site, or not already required to be provided at the Work Site under the terms of this Contract, the cost of transportation, not exceeding a distance of 100 miles, of such equipment to and from the Work Site shall be considered part of the reasonable cost of the Increased Work.

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Contractor may add a maximum of fifteen percent of the reasonable costs set forth above to cover the costs of use of capital, overhead, and profit, including premiums on any Bonds or insurance on account of the Increased Work (except as hereinbefore permitted for direct reimbursement), and profit and overhead of any and all Subcontractors and Suppliers performing all or any part of the Increased Work.

Contractor shall keep a daily record of all Increased Work provided, performed, or completed by Contractor or any Subcontractor or Supplier. The daily record shall include the nature of the Increased Work performed, the names of all personnel employed and the hours worked by each, the equipment, materials and supplies used, including, where appropriate, the quantities used and the hours of use. To constitute verification that Increased Work was provided, performed, or completed, the daily record for each Day must be signed by both Contractor and Engineer not later than the end of the following business day. Contractor's failure to so keep and so verify such a daily record shall constitute a waiver of any claim for compensation for Increased Work.

In the event of any dispute as to the reasonableness of the method or manner of performing any Increased Work, or the cost thereof, including, but not limited to, personnel or equipment requirements to perform the Increased Work, Contractor shall provide all supporting documentation, including cancelled checks, payroll documentation, and any relevant union requirements or regulations. In the absence of such supporting documentation, Engineer's determination of the reasonableness of the chosen method or manner of performing the Increased Work, of the cost thereof, and, if unreasonable, of the reasonable cost of providing, performing, and completing the Increased Work if a reasonable method or manner or cost had been chosen, shall be conclusive and binding on Contractor.

4. For purposes of Paragraphs 2.3A1 and 2.3A2, in determining whether the Increased Work or any part thereof can be classified under one or more of the Unit Price Items set forth in the Schedule of Prices, any increase in any component part of the Work included or subsumed within a Unit Price Item as defined in the Contract Drawings and Specifications shall be classified under such Unit Price Item and the fact that Contractor uses a different method of providing, performing, and completing Increased Work than Contractor originally

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contemplated shall not be a basis for not classifying Increased Work under one or more of the Unit Price Items set forth in the Schedule of Prices.

5. Except as set forth above, no claim for compensation in excess of the Contract Price shall be made or allowed on account of Increased Work.

B. Decreased Work. If any Change Order causes a decrease in the amount of the Work ("Decreased Work"), then Engineer shall determine, and include in such Change Order, (1) the amount of the equitable adjustment in the Contract Price to be credited to Owner based on the value of the Decreased Work determined in accordance with Subsection 5.1C of these General Conditions of Contract and (2) the allowance, if any, due Contractor for any actual loss incurred in connection with the purchase, delivery, and subsequent disposal of equipment, materials, or supplies that would have been used on the Work but for the Change Order and that could not be returned to their source for credit or used in any part of the Work as actually provided, performed and completed. In no event shall any Decreased Work entitle Contractor to make a claim for damages, anticipated profits, or any other compensation except the aforesaid allowance for actual loss incurred for such unused and unreturned equipment, materials, or supplies. Ownership of any such unused equipment, materials, or supplies paid for by Owner shall, at Owner's option, be conveyed to Owner.

C. Netting of Price Adjustments. When both Increased Work and Decreased Work result from a single Change Order, the allowance for overhead and profit pursuant to the reasonable cost method of Paragraph 2.3A3 above, if utilized, shall be figured on the basis of the net increase, if any, in the Work.

D. No Compensation for Delays. Contractor shall not claim or be entitled to any payment, compensation, damages, or adjustment of any kind, other than a possible extension of the Contract Time, if applicable, as provided for in Subsection 2.4C below, because of hindrances or delays, whether avoidable or unavoidable, from any cause in the commencement, provision, performance, or completion of the Work, including but not limited to:

1. Any act, error, omission or interference of Owner, Engineer, or any other Person, including, without limitation, late, changed, or erroneous Bidding Documents or Contract Documents; changes in sequence, suspensions, accelerations, or de-accelerations of the Work; lack of access, rights-of-way, or easements for the Work; lack of approvals, decisions, or payments; issuance of Change Orders; or occupancy, use, or placement into service of the Work prior to Final Acceptance;

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2. Differing or unanticipated conditions at, or in the vicinity of, the Work Site;
3. The simultaneous presence and operations of other contractors;
4. Strikes, lockouts, or labor or material shortages;
5. Fires or other casualties;
6. Delays in transportation; and
7. Acts of God or natural phenomena, whether or not such phenomena are unusual or unusually severe considering the time of year and the particular locality involved.

Contractor expressly agrees that it will accept in full satisfaction for all such delays and hindrances a possible extension of the Contract Time, if applicable, as provided in Subsection 2.4C below and that it will make no claim for, nor be entitled to, equitable adjustment of the Contract Price; or any compensatory, acceleration, or disruption damages; or any other damages or costs of any kind or nature for any such delays or hindrances, including, but not limited to, damages or costs resulting from, arising out of, or in any way related to increases in time-related costs; increases in costs of labor, equipment, materials, or supplies; costs of additional personnel; costs of additional equipment; costs of additional premium time for personnel or equipment; increase in costs for Bond or insurance premiums; lower labor productivity; lost profits or alternative income; effects on other contracts; and costs of demobilization and remobilization.

2.4 Extensions of Contract Time

A. Anticipated Delays. Difficulties or obstructions that may arise out of, or be encountered as a result of, adverse weather conditions, equipment breakdowns, subsurface, underground or other concealed conditions or obstructions, buried structures, utility locations or conditions, adverse soil conditions, and changed site conditions due to work by other contractors are inherent in the nature of the Work of this Contract. Allowances and contingencies for dealing with such difficulties or obstructions are to be allowed for in Contractor's schedule and shall not be treated as unavoidable delays pursuant to Subsection 2.4C below. Changes in the sequence in which the Work is provided, performed, and completed resulting from delays or hindrances that affect only part of the Work but not the provision, performance, or completion of other parts of the Work, nor completion of the whole of the Work, are also inherent in the nature of the Work of this Contract. Allowances and contingencies for such changes are to be allowed for in Contractor's schedule and shall not be treated as unavoidable delays pursuant to Subsection 2.4C below.

B. Extensions for Increased Work. Subject to Subsection 2.4A above, when a Change Order causes an increase in the time required to complete the Work, an

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extension of the Contract Time shall be granted as part of such Change Order for a period of time equal to the additional time required to complete the Work.

C. Extensions for Unavoidable Delays. Subject to Subsection 2.4A above, for any delay or hindrance in completing the Work that may result from causes that could not be avoided or controlled by Contractor, as determined by Owner, Contractor shall upon timely written application, immediately upon the occurrence of any event giving rise to such unavoidable delay and, in any event, no later than two business days thereafter, be entitled to issuance of a Change Order providing for an extension of the Contract Time for a period of time equal to the delay resulting from such unavoidable cause.

D. Extensions for Suspensions. If Owner orders Contractor to suspend the whole of the Work or to suspend a part of the Work that increases the time required to complete the Work, Owner shall, unless such suspension was due to Contractor's failure to perform in accordance with the requirements of this Contract, extend the Contract Time for a period of time equal to the delay caused by such suspension.

2.5 Constructive Change Orders

Sections 2.2 through 2.4 set forth the sole means by which an equitable adjustment in the Contract Price or Contract Time shall be allowed. No waiver, action or inaction by Owner shall be held to create a custom, practice, course of dealing or usage to waive the requirement for written changes and Owner shall under no circumstances be required to pay for any changes to the extent not in writing and signed by Owner in advance of such Work. No claims for equitable adjustments in the Contract Price or Contract Time shall be made or allowed unless embodied in a Change Order initiated by Owner pursuant to Section 2.1 or requested by Contractor, and approved by Owner, pursuant to this Section 2.5. If Owner fails to issue a Change Order including, or fully including, an equitable adjustment in the Contract Price or Contract Time to which Contractor claims it is entitled under Sections 2.2 through 2.4, Contractor may assert a claim that it is entitled to a constructive change order for, but only for, the equitable adjustment due under said Sections pursuant to the procedures of this Section 2.5. If Contractor believes that any requirement, direction, instruction, interpretation, determination, or decision of Owner or Engineer entitles Contractor to an equitable adjustment in the Contract Price or Contract Time under Sections 2.2 through 2.4 that has not been included, or fully included, in a Change Order, then Contractor shall submit to Engineer, with a copy to Owner, a written request for the issuance of, or revision of, a Change Order, including the equitable adjustment, or the additional equitable adjustment, in the Contract Price or Contract Time that Contractor claims has not been included, or fully included, in a Change Order. Such request shall, whenever feasible, be submitted before Contractor proceeds with any Work for which Contractor claims an equitable adjustment is due and shall, in all events, be submitted no later than two business days after receipt of notice of such requirement, direction, instruction, interpretation, determination, or decision. Upon receipt by Engineer of any such request, the parties shall proceed as provided in Article VI of these General Conditions of Contract pertaining

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to disputes and remedies. Notwithstanding the submission of any such request, Contractor shall proceed without delay to perform the Work as required, directed, instructed, interpreted, or decided by Owner or Engineer and shall, pending a final resolution of the issue, keep a daily record of such Work in the manner provided in Paragraph 2.3A3 above. Unless Contractor submits such a request within two business days after receipt of notice of such requirement, direction, instruction, interpretation, determination, or decision, Contractor shall be conclusively deemed (1) to have agreed that such requirement, direction, instruction, interpretation, determination, or decision does not entitle Contractor to an equitable adjustment in the Contract Price or Contract Time and (2) to have waived all claims based on such requirement, direction, instruction, interpretation, determination, or decision.

2.6 No Waiver and Release

Except to the extent embodied in a Change Order, neither the provisions of this Article II nor any communication between or among Owner, Engineer, and Contractor shall operate to relieve Contractor of its duty to perform the Work in full compliance with, and as required by or pursuant to, this Contract, within the Contract Time, and for the Contract Price, or to release or discharge Contractor from any duty arising under this Contract.

2.7 No Other Compensation

No payments, compensation, damages, reimbursements, or monetary consideration of any kind shall be paid or owing to Contractor in connection with, or arising out of, this Contract other than, and subject to deduction as provided for in this Contract, the lump sum amount or amounts stated in the Schedule of Prices, for Work to be paid on a lump basis, the Unit Price stated in the Schedule of Prices for each acceptable unit of each Unit Price Item installed and complete in place, measured on the basis defined in the Contract Drawings and Specifications or, in the absence of such definition, on the basis determined by Engineer, for Work to be paid on a Unit Price basis, the equitable adjustment in the Contract Price included in any Change Order, and any bonuses provided for, and only to the extent provided in, the Special Conditions of Contract. Contractor shall not claim or be entitled to any other payment, compensation, damage, reimbursement, or monetary consideration of any kind for the provision, performance, or completion of the Work.

2.8 Specific References Exemplary

No specific provision of this Contract to the effect that there shall be no change or adjustment in the Contract Price or Contract Time shall be construed to be an exclusive listing of the circumstances in which there shall be no adjustment in Contract Price or Contract Time, but, rather, all such provisions shall be construed to be exemplary only.

ARTICLE III

CONTRACTOR'S RESPONSIBILITY FOR DEFECTIVE WORK

3.1 Inspection; Testing; Correction of Defects

A. Inspection. Until Final Payment, all parts of the Work shall be subject to inspection and testing by Owner, by Engineer, by any public authority having jurisdiction, and by any other Person designated by Owner. Contractor shall furnish, at its own expense, all reasonable access, assistance, and safe and proper facilities required by such Persons for such inspection and testing, both at the Work Site and at any Subcontractor's or Supplier's plant or other source of supply, with full permission to take samples of any materials or supplies that may or might be used in the Work, at Contractor's own expense. Contractor shall notify Owner and Engineer of the readiness of any part of the Work for any inspection or test that may be required by or pursuant to this Contract or applicable Laws. Owner and Engineer shall perform all of their inspections and tests so as not to delay the Work unduly, but Contractor shall schedule the Work in light of the need for time to perform such inspections and tests. No part of the Work as to which any specific inspection or test is required shall be covered or closed until such inspection or test has been completed. If such Work is covered or closed, then it shall be uncovered or opened and, after the inspection or test, recovered or reclosed, by Contractor, all at Contractor's expense.

B. Additional Inspections. If any Work for which an inspection or test is not required by this Contract has been covered or closed so as to prevent inspection or testing, Owner shall nevertheless have the right to order such Work to be inspected or tested and, if so ordered, such Work shall be uncovered or opened by Contractor. If the Work thus uncovered or opened is found to be free from defects, damage, and flaws and to be suitable for its intended purpose and to be otherwise in conformity with this Contract, then Owner shall pay the cost of uncovering, opening, re-inspecting, re-testing, covering, or closing, as the case may be. If the Work uncovered or opened is not free from defects, damage, and flaws or is not suitable for its intended purpose or is otherwise not in conformity with this Contract, then Contractor shall pay all such costs.

C. Re-Inspections. Re-inspection and re-testing of any Work may be ordered by Owner at any time, and, if so ordered, any covered or closed Work shall be uncovered or opened by Contractor. If the Work thus uncovered or opened is found to be free from defects, damage, and flaws and to be suitable for its intended purpose and to be otherwise in conformity with this Contract, then Owner shall pay the cost of uncovering, opening, re-inspecting, re-testing, covering, or closing, as the case may be. If the Work uncovered or opened is not free from defects, damage, and flaws or is not suitable for its intended purpose or is otherwise not in conformity with this Contract, then Contractor shall pay all such costs.

D. Correction. Until Final Payment, Contractor shall, promptly and without charge, repair, correct, or replace all or any part of the Work that is defective, damaged, flawed, or unsuitable or that in any way fails to conform strictly to the requirements of this Contract and shall pay to Owner all resulting costs, expenses, losses,

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or damages suffered by Owner as a result of any such defect, damage, flaw, unsuitability or nonconformity.

E. No Waiver. No inspection or test, failure to inspect or test, or waiver of inspection or testing by Owner or Engineer shall relieve Contractor of its duty to complete the Work in full compliance with, and as required by or pursuant to, this Contract. Failure or neglect on the part of Engineer to condemn Work that is defective, damaged, flawed, unsuitable, or nonconforming shall not be construed as acceptance of such Work nor as a waiver of compliance with the requirements of this Contract.

3.2 Warranty of Work

A. Scope of Warranty. Contractor warrants that the Work and all of its components shall be free from defects and flaws in design, workmanship, and materials; shall strictly conform to the requirements of this Contract; and shall be fit, sufficient, and suitable for the purposes expressed in, or reasonably inferred from, this Contract. Contractor further warrants that the strength of all parts of all equipment, materials, and supplies incorporated into the Work shall be adequate and as specified and sufficient to meet the performance requirements of this Contract. The warranty herein expressed shall not be the sole and exclusive warranty but, rather, shall be in addition to any other warranties expressed in this Contract, or expressed or implied by Law, which are hereby reserved unto Owner.

B. Repairs; Extension of Warranty. Contractor shall, promptly and without charge, correct any failure to fulfill the above warranty that may be discovered or develop at any time within two years after Final Payment or such longer period as may be prescribed in the Contract Drawings and Specifications, in the Special Conditions of Contract, or by Law. The above warranty shall be extended automatically to cover all repaired and replacement parts and labor provided or performed under such warranty and Contractor's obligation to correct Work shall be extended for a period of two years from the date of such repair or replacement. Nothing contained in this Subsection 3.2B shall be construed to establish a period of limitation with respect to other obligations that Contractor has under this Contract. The time period established in this Subsection 3.2B relates only to the specific obligation of Contractor to correct Work and has no relationship to the time within which the obligations to comply with this Contract may be sought to be enforced, nor to the time within which proceedings may be commenced to establish Contractor's liability with respect to Contractor's obligations other than specifically to correct the Work.

C. Maintenance/Warranty Bond. Contractor shall provide a maintenance bond in the amount of at least \$1,000,000 that obligates the Contractor for a period of three (3) years from the date of Project completion and acceptance by the Owner to repair or replace any and all defects arising in the work, whether resulting from defective materials or defective workmanship. Surety providing the bond shall conform to the requirements detailed in the Contract Agreement.

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3.3 Contractor Duty to Correct Without Delay

In the event of any claim by Owner pursuant to Section 3.1 or Section 3.2 above that the Work is defective, damaged, flawed, unsuitable, nonconforming, or that the Work fails to fulfill the above warranty, Contractor shall be given a reasonable opportunity to confirm the validity of such claim, but Contractor shall not, unless authorized in writing by Owner, delay correction of the claimed defect, damage, flaw, unsuitability, nonconformity, or failure while making such determination. In the event any such claim is shown to be invalid following such correction by Contractor, Owner shall pay the cost of such correction.

3.4 Owner's Right to Correct

If, within two business days after Owner gives Contractor notice of any defect, damage, flaw, unsuitability, nonconformity, or failure to meet warranty subject to correction by Contractor pursuant to Section 3.1 or Section 3.2 above, Contractor fails, refuses, or neglects to make, or to undertake with due diligence to make, the necessary corrections, then Owner shall be entitled to make, either with its own forces or with contract forces, the corrections and to recover from Contractor all resulting costs, expenses, losses, or damages, including attorneys' fees and administrative expenses.

If in the judgment of Owner, the delay required to give Contractor the aforesaid two business days notice would cause serious damage or loss that could be avoided by immediate action, Owner shall have the right, without giving prior notice to Contractor, to perform, or to have performed, all work necessary to make the corrections and to recover from Contractor the cost of such corrections. In such event, Contractor shall be notified as promptly as possible and shall assist, whenever possible, in making the necessary corrections.

3.5 Subcontractor and Supplier Warranties

Whenever the Special Conditions of Contract or the Specifications require a Subcontractor or Supplier to provide a guaranty or warranty, Contractor shall be solely responsible for obtaining said guaranty or warranty in form satisfactory to Owner and assigning said warranty or guaranty to Owner. Acceptance of any assigned warranties or guaranties by Owner shall be a precondition to Final Payment and shall not relieve Contractor of any of its guaranty or warranty obligations under this Contract.

Whenever the Special Conditions of Contract or the Specifications require a Subcontractor or Supplier to provide a guaranty or warranty, Contractor shall be solely responsible to obtain from the guarantying or warranting Person a written certification, in form satisfactory to Owner, that (1) all things required for the successful operation of the warranted item in accordance with the Specifications have been designed, manufactured and installed in accordance with all requirements of the guarantying or warranting Person; (2) all requirements and conditions necessary to validate the guaranty or warranty, whether specified in this Contract or not, have been complied with; and (3) all procedures

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necessary to maintain the guaranty or warranty in full force and effect during the applicable guaranty or warranty period, including but not limited to maintenance obligations and storage conditions, have been provided to Owner in writing and written acknowledgments of all such disclosed procedures have been provided by Owner to the warranting or guarantying Person. Acceptance of any such certification by Owner shall be a precondition to Final Payment and shall not relieve Contractor of any of its obligations under this Contract to provide additional or other certifications.

ARTICLE IV INSURANCE

4.1 Required Coverages

Contractor shall, prior to and at all times while providing, performing, or completing the Work, including, without limitation, at all times while repairing, correcting, or replacing all or any part of the Work that is defective, damaged, flawed, unsuitable, nonconforming, or that fails to meet warranty subject to correction by Contractor pursuant to Section 3.1 or Section 3.2 of these General Conditions of Contract, procure, maintain, and keep in force, at Contractor's expense, all insurance necessary to protect and save harmless Owner, the Work, the Work Site, and all property located at or about the Work Site, including but not limited to the insurance coverages specified in Section 4.3 below and in Section 4 of the Special Conditions of Contract ("Required Coverages").

4.2 Insurance Companies and Policies

All Required Coverages shall be provided by insurance companies rated A minus or better in Best's Insurance Guide and otherwise acceptable to, and approved by, Owner. Required Coverages may be in any combination of primary, excess, and umbrella policies. Any excess or umbrella policy must provide excess coverage over underlying insurance on a following-form basis such that when any loss covered by the primary policy exceeds the limits under the primary policy, the excess or umbrella policy becomes effective to cover such loss. No policy may have a deductible or self-insured retention of more than one percent of the policy limit. Contractor shall furnish to Owner two copies of a certificate of insurance and one copy of an insurance policy for each Required Coverage. Each such certificate and policy shall be in a form satisfactory to Owner and shall provide that no change, modification in, or cancellation of the insurance represented by it shall become effective until the expiration of 30 Days after written notice thereof shall have been given by the insurance company to Owner and any Additional Insured.

4.3 Minimum Coverages

Unless otherwise provided in the Special Conditions of Contract, Contractor shall, prior to and at all times while, providing, performing, or completing the Work, procure, maintain, and keep in force, at Contractor's expense, at least the following minimum insurance coverages:

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1. Workers' Compensation and Employer's Liability with limits not less than:

- (a) Workers' Compensation: Statutory;

- (b) Employer's Liability:

\$1,000,000 injury-per occurrence

\$1,000,000 disease-per employee

\$1,000,000 disease-policy limit

Such insurance shall evidence that coverage applies to the State of Illinois, contain an "all States" endorsement, and provide a waiver of subrogation in favor of Owner.

2. Commercial Motor Vehicle Liability with a combined single limit of liability for bodily injury and property damage of not less than \$5,000,000 per occurrence for vehicles owned, non-owned, or rented.

All employees must be included as insureds.

3. Commercial General Liability with coverage written on an "occurrence" basis and with limits no less than:

- (a) Each Occurrence: \$5,000,000

- (b) General Aggregate: \$10,000,000

- (c) Completed Operations Aggregate: \$10,000,000

- (d) Personal Injury: \$5,000,000

Coverages shall include:

- Premises Operations
- Products/Completed Operations (to be maintained for two years following Final Payment)
- Independent Contractors
- Personal Injury (with Employment Exclusion deleted)
- Broad Form Property Damage Endorsement

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- Blanket Contractual Liability (must expressly cover the indemnity provisions contained in clause 4 of Section 4.3 of the Contract Agreement)
- Bodily injury and property damage

“X”, “C”, and “U” exclusions shall be deleted.

Blasting exclusions shall be deleted if Work involves blasting.

Railroad exclusions shall be deleted if Work Site is within 50 feet of any railroad track.

All employees shall be included as insureds.

4. Builders Risk Insurance. This insurance shall be written in completed value form, shall protect Contractor, Owner, and Engineer against “all risks” of direct physical loss to buildings, structures, equipment, and materials to be used in providing, performing, and completing the Work, including without limitation fire, extended coverage, vandalism and malicious mischief, sprinkler, leakage, flood, earth movement and collapse, and shall be designed for the circumstances that may affect the Work.

This insurance shall be written with limits not less than the insurable value of the Work at completion. The insurable value shall include the aggregate value of all Owner-furnished equipment and materials to be constructed or installed by Contractor.

This insurance shall include coverage while equipment or materials are in warehouses or storage areas, during installation, during testing, and after the Work is completed, but prior to Final Payment. This insurance shall include coverage while Owner is occupying or using all or any part of the Work prior to Final Payment without the need for the insurance company’s consent.

This insurance coverage requirement shall not be construed as a waiver of Contractor’s duties stated in Section 1.8 of these General Conditions of Contract.

5. Owner’s and Contractor’s Protective Liability Insurance. Contractor, at its sole cost and expense, shall purchase this insurance in the names of Owner and Engineer for the period between the Commencement Date and Final Payment, with a

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combined single limit of liability for bodily injury and property damage of \$20,000,000 per occurrence and in the aggregate.

The named insureds for this insurance shall be the DuPage Water Commission and Burns & McDonnell, Lockwood, Andrews and Newnam, Inc., Robinson Engineering, Ltd, and Stanley Consultants, Inc. (the "Named OCP Insureds"). The coverage afforded the Named OCP Insureds by this insurance shall be primary insurance for the Named OCP Insureds. If the Named OCP Insureds have other insurance which is applicable to the loss, such other insurance shall be on an excess or contingent basis. The amount of the insurance company's liability under this policy of insurance shall not be reduced by the existence of such other insurance. This policy of insurance shall be specifically endorsed to provide such primary coverage for Owner and Engineer. In addition to the submittal requirements of Section 4.2 above, Contractor shall furnish to Engineer one copy of a certificate of insurance for this Required Coverage.

4.4 Additional Coverages

The insurance coverages and limits required by Section 4.3 above shall be deemed to be minimum coverages and limits and shall not be construed in any way as a limitation on Contractor's duty to carry adequate insurance as required by Section 4.1 above or on Contractor's liability for losses and damages under this Contract. Contractor shall at all times carry such additional coverages and limits as may be necessary to fully comply with this Contract.

4.5 Subcontractor Insurance

Unless otherwise provided in the Special Conditions of Contract or unless otherwise approved by Owner in a Change Order, Contractor shall not allow any Subcontractor to commence or continue any part of the Work until and unless such Subcontractor provides and has in force Commercial General Liability insurance coverage equal to \$2,000,000 or the amount of its Subcontract, whichever is greater, and Workers' Compensation and Employer's Liability and Commercial Motor Vehicle Liability insurance coverages equal to those required of Contractor by this Article.

ARTICLE V **PAYMENT**

5.1 Progress Payments

A. General. Owner shall pay to Contractor in monthly installments, subject to any additions, deductions, or withholdings provided for in this Contract, 95 percent of the Value of the Work, determined in the manner set forth in

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Subsection 5.1C below, installed and complete up to the Day before the Pay Request, less the aggregate of all previous Progress Payments. Upon completion of 50 percent of the Work, Owner shall thereafter pay to Contractor no less than 95 percent of the Value of the Work, determined in the manner set forth in Subsection 5.1C below, installed and complete up to the Day before the Pay Request, less the aggregate of all previous Progress Payments, and thereafter the total amount of Progress Payments made prior to Final Acceptance by Owner shall be no less than 95 percent of the Contract Price.

B. Pay Requests. Contractor shall, as a condition precedent to its right to receive each Progress Payment, submit to Engineer four (unless otherwise provided in the Specifications) originally executed copies of a request for payment in the form provided by Owner and accompanied by such supporting data and documentation as may be required by this Contract or by Owner or Engineer ("Pay Request"). The first Pay Request shall be submitted not sooner than 30 Days following the Commencement of the Work. Owner may, by written notice to Contractor, designate a specific Day of each month on or before which Pay Requests must be submitted.

Pay Requests shall include the following minimum data and documentation, all of which shall be on forms supplied by, or otherwise acceptable to, Owner:

- (i) Contractor's certification of the Value of the Work for which payment is then requested. If such certification is accepted by Engineer, it shall constitute the Value of the Work for the purpose of determining the amount of the current Progress Payment. If such certification is not accepted by Engineer, and if Engineer and Contractor are unable to agree as to the Value of the Work in question, such value shall, for the purpose of determining the amount of the current Progress Payment, be determined by Engineer in accordance with Subsection 5.1C below.
- (ii) Contractor's certification that all prior Progress Payments have been properly applied to the payment or reimbursement of the costs with respect to which they were paid.
- (iii) Contractor's Sworn Statement.
- (iv) Contractor's partial or final waiver of lien.
- (v) Subcontractors' and Suppliers' Sworn Statements.
- (vi) Subcontractors' and Suppliers' partial or final waivers of lien.
- (vii) Such other receipts, releases, affidavits, certificates, and other evidence as may be necessary to establish, to Owner's satisfaction, Contractor's, and its Subcontractors' and Suppliers', entitlement to the Progress Payment being requested, prior payment for all labor, equipment, materials, supplies, and other things covered by the Pay

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Request; and the absence of any interest, whether in the nature of a Lien or otherwise, of any Person in the Work, the Work Site, or any other property belonging to, or being held by, Owner.

C. Value of Work. The Value of the Work shall be determined as follows:

1. Lump Sum Items. For all Work to be paid on a lump sum basis, Contractor shall, not later than 10 days after execution of the Contract Agreement unless otherwise provided in the Specifications and, in all events, before submitting its first Pay Request, submit to Engineer a schedule showing the value of each component part of such Work, and the quantity of discrete units comprising such component part of the Work, in form and with substantiating data and documentation acceptable to Engineer ("Breakdown Schedule"). The sum of the items listed in the Breakdown Schedule shall equal the amount or amounts set forth in the Schedule of Prices for lump sum Work. Overhead and profit shall not be listed as separate items in the Breakdown Schedule. An unbalanced Breakdown Schedule providing for overpayment of Contractor on component parts of the Work to be performed first will not be accepted. The Breakdown Schedule shall be revised and resubmitted until acceptable to Engineer. No payment shall be made for any lump sum Work until Contractor has submitted, and Engineer has approved, an acceptable Breakdown Schedule.

Engineer may require that the approved Breakdown Schedule be revised based on developments occurring during the provision and performance of the Work. If Contractor fails to submit a revised Breakdown Schedule that is acceptable to Engineer, Owner shall have the right either to suspend Progress and Final Payments for lump sum Work or to make such Payments based on Engineer's determination of the value of the Work completed.

2. Unit Price Items. For all Work to be paid on a Unit Price basis, the value of such Work shall be determined by Engineer on the basis of the actual number of acceptable units of Unit Price Items installed and complete in place, multiplied by the applicable unit price set forth in the Schedule of Prices. The actual number of acceptable units installed and complete in place shall be measured on the basis defined in the Contract Drawings and Specifications or, in the absence of such definition, on the basis determined by Engineer. For lump sum Unit Prices, Contractor shall submit, as and when required pursuant to Paragraph 5.1C1 above, a Breakdown Schedule for such lump sum Unit Price Items.

The number of units of Unit Price Items stated in the Schedule of Prices are Engineer's estimate only and shall not be used in establishing the Progress and Final Payments due Contractor. The Contract Price shall be adjusted, by a Balancing Change Order, to reflect the actual number of acceptable units of Unit Price Items installed and complete in place upon Final Acceptance.

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D. Date of Payment. Contractor shall be paid no later than 45 Days following Owner's approval of each Pay Request, and the amount of the Progress Payment requested, at a meeting of Owner's governing body. Owner shall have no obligation to approve any Pay Request that is not in full compliance with the requirements of this Contract.

5.2 Final Acceptance and Final Payment

A. Notice of Completion. When the Work has been completed and is ready in all respects for acceptance by Owner, Contractor shall notify Engineer, with a copy to Owner, and request a final inspection ("Notice of Completion"). Contractor's Notice of Completion shall be given sufficiently in advance of the Completion Date to allow for scheduling of the final inspection and for completion or correction before the Completion Date of any items identified by such inspection as being defective, damaged, flawed, unsuitable, nonconforming, incomplete, or otherwise not in full compliance with the requirements of this Contract ("Punch List Work"). Before giving its Notice of Completion, Contractor shall satisfy itself that the whole Work, and every part thereof, has been completed in full compliance with, and as required by or pursuant to, this Contract, that all defects, damage, flaws, and non-conformities have been corrected, and that the Work Site and adjacent areas are fully restored, clean, and in good order.

B. Punch List and Final Acceptance. The Work shall be finally accepted when, and only when, the whole and all parts thereof shall have been completed and tested to the satisfaction of Owner in full compliance with, and as required by or pursuant to, this Contract and the Work Site and adjacent areas shall have been fully restored, cleaned, and placed in good order and in at least the same condition as immediately prior to commencement of the Work. Upon receipt of Contractor's Notice of Completion and at a time mutually agreeable to Owner, Engineer, and Contractor, Engineer shall make a review of the Work and shall either notify Contractor in writing of all Punch List Work, if any, to be completed or corrected ("Punch List") and of the time, not later than the Completion Date, by which Contractor shall complete or correct all Punch List Work or, if the Work is complete in full compliance with, and as required by or pursuant to, this Contract and the Work Site and adjacent areas are fully restored, clean, and in good order and in at least the same condition as immediately prior to commencement of the Work, prepare and deliver to Owner a written recommendation that the Work be finally accepted. Following Contractor's completion or correction of all Punch List Work, Engineer shall make another review of the Work and shall either prepare and deliver to Contractor another Punch List or, if the Work is complete in full compliance with, and as required by or pursuant to, this Contract and the Work Site and adjacent areas are fully restored, clean, and in good order and in at least the same condition as immediately prior to commencement of the Work, prepare and deliver to Owner a written recommendation that the Work be finally accepted.

The failure of Engineer to list any item on a Punch List shall not relieve Contractor of its obligation to provide, perform and complete the Work in full compliance with, and as required by or pursuant to, this Contract.

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Whenever any permit, license, site agreement, or other approval or authorization that may be required in connection with the Work requires that the Work within public or private property not owned by Owner be installed, and the property restored, to a condition satisfactory to such approving or authorizing Person, Contractor shall be responsible for obtaining a written acknowledgment of the acceptance of such Person in form satisfactory to Owner. Acceptance of any such acknowledgment by Owner shall be a precondition to Owner's final acceptance of the Work and shall not relieve Contractor of any of its obligations under this Contract to provide additional or other acknowledgments.

In the event more than two inspections and Punch Lists are required before Engineer is prepared to deliver to Owner its written recommendation that the Work be finally accepted, Contractor shall be charged the total cost incurred by Engineer for all subsequent inspections and the preparation of such additional Punch Lists. If the amount due Contractor is not sufficient to cover such costs, Contractor shall reimburse Owner for such costs upon demand.

Upon being satisfied that the Work and Work Site are ready for final acceptance pursuant to the requirements of this Contract, Owner shall issue its written notice of final acceptance of the Work to Contractor ("Final Acceptance").

C. Final Payment. As soon as practicable, but not more than 60 Days, after Final Acceptance, Contractor shall submit to Engineer four originally executed copies of a Pay Request requesting Final Payment ("Final Pay Request") for Engineer's review and recommendation of appropriate payment. Owner shall pay to Contractor the balance of the Contract Price, as determined by Engineer, after deducting therefrom all charges against Contractor as provided for in this Contract and all amounts, if any, to be retained under the Special Conditions of Contract ("Final Payment"). Final Payment shall be made not later than 15 Days after the expiration of the time within which claims for labor performed or equipment, materials, or supplies provided must be filed under any applicable Law pertaining to Liens, or the expiration of 30 Days after Owner approves the Final Pay Request, whichever is later; provided, however, that Owner shall not be obligated to make Final Payment unless and until Contractor has submitted and has caused its Subcontractors and Suppliers to submit all required data and documentation to Owner and all such data and documentation is complete and in proper form.

5.3 Title to Work and Liens

A. Title. Nothing in this Contract shall be construed as vesting in Contractor any right of property in any equipment, materials, supplies and other items provided under this Contract after they have been installed in, incorporated into, attached to, or affixed to, the Work or the Work Site. All such equipment, materials, supplies and other items shall, upon being so installed, incorporated, attached or affixed, become the property of Owner, but such title shall not release Contractor from its duty to insure and protect the Work in accordance with the requirements of this Contract.

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B. Waivers of Lien. Contractor shall, from time to time, at Owner's request and in any event prior to Final Payment, furnish to Owner such receipts, releases, affidavits, certificates, and other evidence as may be necessary to establish, to the reasonable satisfaction of Owner, that no liens against the Work or the public funds held by Owner exist in favor of any Person whatsoever for or by reason of any equipment, material, supplies, or other item furnished, labor performed, or other thing done in connection with the Work or this Contract ("Lien") and that no right to file any Lien exists in favor of any Person whatsoever.

C. Removal of Liens. If at any time any notice of any Lien is filed for or by reason of any equipment, materials, supplies, or other item furnished, labor performed, or other thing done in connection with the Work or this Contract, then Contractor shall, promptly and without charge, discharge, remove, or otherwise dispose of such Lien, or, if permitted by Owner, furnish a Bond or other collateral satisfactory to Owner to indemnify Owner against such Lien. The Work is subject to the provisions of the Illinois Mechanics Lien Act, specifically, 770 ILCS 60/23.

D. Protection of Owner Only. This Section shall not operate to relieve Contractor's surety or sureties from any of their obligations under the Bonds, nor shall it be deemed to vest any right, interest or entitlement in any Subcontractor or Supplier. Owner's retention of funds pursuant to this Section shall be deemed solely for the protection of its own interests pending removal of such Liens by Contractor, and Owner shall have no obligation to apply such funds to such removal but may, nevertheless, do so where Owner's interests would thereby be served.

5.4 Deductions

A. Owner's Right to Withhold. Notwithstanding any other provision of this Contract and without prejudice to any of Owner's other rights or remedies, Owner shall have the right at any time or times, whether before or after approval of any Pay Request, to deduct and withhold from any Progress or Final Payment that may be or become due under this Contract such amount as may reasonably appear necessary to compensate Owner for any actual or prospective loss due to: (1) Work that is defective, damaged, flawed, unsuitable, nonconforming, or incomplete; (2) damage for which Contractor is liable under this Contract; (3) state or local sales, use, or excise taxes from which Owner is exempt; (4) Liens or claims of Lien regardless of merit; (5) claims of Subcontractors, Suppliers, or other Persons regardless of merit; (6) delay in the progress or completion of the Work; (7) inability of Contractor to complete the Work; (8) reasonable doubt that this Contract can be completed for the balance of the Contract Price then unpaid; (9) reasonable doubt that the balance of the Contract Price then unpaid is not adequate to cover actual or liquidated damages, if any; (10) failure of Contractor to properly complete or document any Pay Request; (11) any other failure of Contractor to perform any of its obligations under this Contract; (12) the cost to Owner, including attorneys' fees and administrative expenses, of correcting any of the aforesaid matters or exercising any one or more of Owner's remedies set forth in Section 6.6 of these General Conditions of Contract; or (13) engineering and inspection charges imposed pursuant to

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Subsection 1.3F, Section 1.13, or Subsection 5.2B of these General Conditions of Contract.

B. Use of Withheld Funds. Owner shall be entitled to retain any and all amounts withheld pursuant to Subsection 5.4A above until Contractor shall have either performed the obligation or obligations in question or furnished security for such performance satisfactory to Owner. Owner shall be entitled to apply any money withheld or any other money due Contractor under this Contract to reimburse itself for any and all costs, expenses, losses, damages, liabilities, suits, judgments, awards, attorneys' fees, and administrative expenses incurred, suffered, or sustained by Owner and chargeable to Contractor under this Contract.

5.5 Application of Payments

All Progress and Final Payments made by Owner to Contractor shall be applied to the payment or reimbursement of the costs with respect to which they were paid and not to any preexisting or unrelated debt between Contractor and Owner or between Contractor and any other Person.

5.6 Work Entire

This Contract and the Work are entire and the Work as a whole is of the essence of this Contract. Notwithstanding any other provision of this Contract, each and every part of this Contract and of the Work are interdependent and common to one another and to Owner's obligation to pay all or any part of the Contract Price or any other consideration for the Work. Any and all Progress Payments made pursuant to this Article are provided merely for the convenience of Contractor and for no other purpose.

ARTICLE VI DISPUTES AND REMEDIES

6.1 Notice of Dispute

If Contractor disputes or objects to any requirement, direction, instruction, interpretation, determination, or decision of Owner or Engineer ("Disputed Decision"), Contractor may, immediately upon receiving any such Disputed Decision, notify Engineer in writing, with a copy to Owner, of its dispute or objection and of the amount of any equitable adjustment to the Contract Price or Contract Time to which Contractor claims it will be entitled as a result thereof ("Notice of Dispute"); provided, however, that Contractor shall, nevertheless proceed without delay to perform the Work as required, directed, instructed, interpreted, determined, or decided by Owner or Engineer without regard to such dispute or objection and such Notice of Dispute. Unless Contractor so notifies Engineer not later than two business days after receipt of such Disputed Decision, and, whenever feasible, prior to taking any action based upon such Disputed Decision, Contractor shall be conclusively deemed (1) to have agreed to and accepted such Disputed Decision as being fair, reasonable, and finally determinative of Contractor's obligations and rights under this Contract; (2) to have waived all grounds for dispute of or

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objection to such Disputed Decision; and (3) to have waived all claims for damages and equitable adjustments to the Contract Price and Contract Time based on such Disputed Decision.

6.2 Negotiation of Disputed Decisions

To avoid and settle without litigation any Disputed Decision, Owner and Contractor agree to engage in good faith negotiations as provided in this Section. Within three business days after Engineer's receipt of any Notice of Dispute, Engineer shall deliver to Contractor, with a copy to Owner, Engineer's preliminary written response either rejecting Contractor's claim, recommending to Owner approval of Contractor's claim, suggesting a compromise of Contractor's claim, or requesting additional information. Within three business days after Contractor's receipt of Engineer's preliminary written response, Contractor shall deliver to Engineer any additional information requested and notify Engineer whether Contractor is withdrawing, modifying or reaffirming its Notice of Dispute. Within three business days after Engineer's receipt of Contractor's reply, a conference among Owner, Engineer, and Contractor shall be held to resolve the dispute.

6.3 Owner's Final Decision

Within three business days after the end of the conference required pursuant to Section 6.2 above, Engineer shall deliver to Contractor Owner's final written decision.

6.4 Contractor's Final Demand

If Contractor objects to Owner's final decision, Contractor shall, within three business days of the receipt thereof, give Owner written notice of such objection and shall, in such notice, state its final demand for settlement of the Disputed Decision. Unless Contractor so notifies Owner, Contractor shall be conclusively deemed (1) to have agreed to and accepted Owner's final decision and (2) to have waived all claims based on such final decision.

6.5 Contractor's Remedies

If Owner fails or refuses to satisfy a final demand made by Contractor pursuant to Section 6.4 above, or to otherwise resolve the Disputed Decision which is the subject of such demand to the satisfaction of Contractor, within 15 Days following receipt of such demand, Contractor shall be entitled to pursue such remedies, not inconsistent with the provisions of this Contract, as it may have in law or equity; provided, however, that Contractor agrees that its compliance with the dispute resolution procedures set out in Sections 6.1 through 6.4 above shall be a condition precedent to the initiation of any legal action concerning any matter subject to the provisions of said Sections; and provided further, however, that Contractor agrees that any claim for an equitable adjustment in the Contract Price or Contract Time or both, as the case may be, shall be conditioned upon Contractor having first complied with the procedures set out in Section 2.5 of these General Conditions of Contract and shall in no event exceed, and shall be

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further limited to, the amount of equitable adjustment in the Contract Price or Contract Time or both, as the case may be, included in Contractor's written request submitted in accordance with Section 2.5 of these General Conditions of Contract.

6.6 Owner's Remedies

A. Events of Default. Each of the following acts or omissions of Contractor shall be a default by Contractor of its obligations under this Contract ("Event of Default") and the occurrence or existence of any such Event of Default shall entitle Owner to invoke any or all of the remedies set forth in Subsection 6.6B below:

1. Contractor's initiation of, acquiescence in, or failure to have withdrawn any voluntary or involuntary petition in bankruptcy or for reorganization or for relief from its creditors or for any similar relief.
2. Contractor's initiation of, acquiescence in, or failure to have withdrawn any action or agreement for the appointment of a receiver for its business or any of its property.
3. Contractor being or becoming insolvent, making a general assignment for the benefit of creditors, or assigning its right to any or all payments due under this Contract or to any part of the Work.
4. Contractor's failure or refusal to pay any of its debts as they come due, including failure to pay when due any money owed to any Subcontractor or Supplier.
5. Contractor's failure, refusal, or delay to prosecute the Work, or any part thereof, diligently at a rate that assures completion of the Work in full compliance with, and as required by or pursuant to, this Contract on or before the Completion Date.
6. Contractor's failure, refusal, or delay to provide, perform, and complete the Work, or any part thereof, free from defects, damage, and flaws; in strict conformity to the requirements of this Contract; and in a manner suitable for its intended purposes.
7. Contractor falsely making, or being found to have falsely made, any representation or warranty in any Bidding Document or in or pursuant to this Contract.
8. Contractor executing the Work in bad faith.
9. Contractor's failure, refusal, or delay to perform, to satisfy, or to be in full compliance with, any other material requirement of this Contract.

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B. Owner's Remedies for Contractor's Default. If it should appear at any time prior to Final Payment, whether as a result of any inspection or test or otherwise, that an Event of Default has occurred or is in existence, and if Contractor should fail to cure and eliminate such Event of Default within five business days after Contractor's receipt of Owner's written notice of such Event of Default, then Owner shall have the right, at its election and without prejudice to any other remedies provided by law or equity, to pursue any one or more of the following remedies:

1. Owner may require Contractor, within such reasonable time as may be fixed by Owner, to complete or correct all or any part of the Work that is defective, damaged, flawed, unsuitable, nonconforming, or incomplete; to remove from the Work Site any such Work; to accelerate all or any part of the Work; and to take any or all other action necessary to bring Contractor and the Work into strict compliance with this Contract.
2. Owner may perform or have performed all Work necessary for the accomplishment of the results stated in Paragraph 6.6B1 above and withhold or recover from Contractor all the cost and expense, including attorneys' fees and administrative costs, incurred by Owner in connection therewith.
3. Owner may accept the defective, damaged, flawed, unsuitable, nonconforming, incomplete, or dilatory Work or part thereof and make an equitable reduction in the Contract Price.
4. Owner may terminate this Contract without liability for further payment of amounts due or to become due under this Contract.
5. Owner may, without terminating this Contract, terminate Contractor's rights under this Contract and, for the purpose of completing or correcting the Work, evict Contractor and take possession of all equipment, materials, supplies, tools, appliances, plans, specifications, schedules, manuals, drawings, and other papers relating to the Work, whether at the Work Site or elsewhere, and either complete or correct the Work with its own forces or contracted forces, all at Contractor's expense.
6. Upon any termination of this Contract or of Contractor's rights under this Contract, and at Owner's option exercised in writing, any or all Subcontracts of Contractor shall be deemed to be assigned to Owner without any further action being required, but Owner shall not thereby assume any obligation for payments due under such Subcontracts for any Work provided or performed prior to such assignment.

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7. Owner may withhold from any Progress Payment or Final Payment, whether or not previously approved, or may recover from Contractor, any and all costs, including attorneys' fees and administrative expenses, incurred by Owner as the result of any Event of Default or as a result of actions taken by Owner in response to any Event of Default.
8. Owner may recover any damages suffered by Owner.

C. Owner's Special Remedy for Delay. If the Work is not completed by Contractor, in full compliance with, and as required by or pursuant to, this Contract, within the Contract Time as such time may be extended by Change Order, then Owner may invoke its remedies under Subsection 6.6B above or may, in the exercise of its sole and absolute discretion, permit Contractor to complete the Work but charge to Contractor, and deduct from any Progress or Final Payments, whether or not previously approved, administrative expenses and costs for each Day completion of the Work is delayed beyond the Completion Date computed on the basis of a per diem charge of \$5,000.00 per Day, as well as any additional damages caused by such delay or any liquidated damages provided for in the Special Conditions of Contract. Notwithstanding an election made pursuant to this Subsection, Owner may thereafter exercise any of its remedies under Subsection 6.6B above if Owner at any time is not, in Owner's opinion, adequately assured of prompt completion of the Work.

D. Remedies Cumulative. Each of the remedies listed in this Section shall be deemed to be cumulative of all other remedies listed in this Section or elsewhere in this Contract and to exist in addition to every other such remedy and in addition to all other remedies provided by law or equity.

E. Provisions Exemplary. Any reference in this Contract to Owner's right to invoke the remedies of this Section are not intended to be, nor shall they be construed to be, an exclusive listing of the circumstances under which these remedies may be exercised, but rather they are intended to be only exemplary.

F. Termination or Suspension Deemed for Convenience. Any termination or suspension of Contractor's rights under this Section 6.6 for an alleged Event of Default that is ultimately held unjustified shall be deemed a termination or suspension for the convenience of Owner under Section 1.12 of these General Conditions of Contract.

ARTICLE VII DEFINITIONS

7.1 Defined Terms

A. Addendum. Any written or graphic instrument issued prior to the execution of this Contract, dated and signed by Owner or Engineer, that modifies, interprets, or corrects the Bidding Documents or this Contract.

GENERAL CONDITIONS

B. Additional Insureds. The Persons identified in Section 4 of the Special Conditions of Contract.

C. Approved Rate. See Paragraph 2.3A3 of these General Conditions of Contract.

D. Approved Schedule. See Paragraph 1.1B2 of these General Conditions of Contract.

E. Balancing Change Order. See Paragraph 5.1C2 of these General Conditions of Contract.

F. Bid Package. The bound set of documents based upon which Owner solicited proposals for this Contract, consisting of the Bidding Documents and this Contract.

G. Bidder's Proposal. The proposal to enter into this Contract, completed and executed by Contractor, and based upon which this Contract was awarded by Owner to Contractor.

H. Bidding Documents. The documents incorporated by reference in Section 3 of the Invitation for Bidder's Proposals and included in the Bid Package.

I. Bond. Performance Bond, Labor and Material Payment Bond, and any other instrument of security, furnished, or required by this Contract to be furnished, by Contractor or its surety or sureties.

J. Breakdown Schedule. See Paragraph 5.1C1 of these General Conditions of Contract.

K. Change Order. A written order to Contractor executed by Owner authorizing or directing a change in this Contract; an addition to, deletion from, or revision in the Work or the Work Site; or an equitable adjustment in the Contract Price or the Contract Time.

L. Commencement Date. The date set forth in Section 2.1 of the Contract Agreement.

M. Completion Date. The date set forth in Section 2.2 of the Contract Agreement.

N. Contract. The Contract Agreement and all Contract Documents.

O. Contract Agreement. The contract agreement executed by Owner and Contractor.

GENERAL CONDITIONS

P. Contract Documents. The documents listed in Section 1.2 of the Contract Agreement.

Q. Contract Drawings. All (i) drawings furnished with the Invitation for Bidder's Proposals, (ii) supplementary drawings furnished to clarify and to define in greater detail the intent of the drawings and specifications furnished with the Invitation for Bidder's Proposals, (iii) drawings submitted by Contractor to Engineer pursuant to this Contract and reviewed and stamped by Engineer with no exception noted or an equivalent notation, and (iv) drawings submitted to Contractor by Engineer during the progress of the Work as provided for in this Contract.

R. Contract Price. The lump sum amount or amounts, if any, stated in the Schedule of Prices and, for each acceptable unit of each Unit Price Item, if any, installed and complete in place, measured on the basis provided for in the Contract Drawings and Specifications, the Unit Price for such Unit Price Item stated in the Schedule of Prices, subject to any additions or deductions provided for in this Contract.

S. Contract Time. The period of time allowed, including the Commencement Date and Completion Date, pursuant to Article II of the Contract Agreement for Contractor to provide, perform, and complete the Work, as such period of time may be modified by Change Order.

T. Contractor. See Subparagraph 1.3A2(a) of the Contract Agreement.

U. Day. Except where otherwise expressly defined, a calendar day of 24 hours, measured from midnight to the next midnight.

V. Decreased Work. See Subsection 2.3B of these General Conditions of Contract.

W. Disputed Decision. See Section 6.1 of these General Conditions of Contract.

X. Engineer. See Subparagraph 1.3A2(b) of the Contract Agreement.

Y. Event of Default. See Section 6.6 of these General Conditions of Contract.

Z. Final Acceptance. See Subsection 5.2B of these General Conditions of Contract.

AA. Final Pay Request. See Subsection 5.2C of these General Conditions of Contract.

BB. Final Payment. See Subsection 5.2C of these General Conditions of Contract.

GENERAL CONDITIONS

CC. General Instructions to Bidders. The instructions to bidders included in the Bid Package.

DD. Increased Work. See Subsection 2.3A of these General Conditions of Contract.

EE. Invitation for Bidder's Proposal. The invitation for bidder's proposals included in the Bid Package and by which Owner invited proposals to enter into this Contract.

FF. Laws. All laws, statutes, ordinances, regulations, orders, decrees and other legal requirements, whether federal, state or local existing on or after the date of execution of this Contract.

GG. Lien. See Subsection 5.3B of these General Conditions of Contract.

HH. Notice of Completion. See Subsection 5.2A of these General Conditions of Contract.

II. Notice of Dispute. See Section 6.1 of these General Conditions of Contract.

JJ. Overtime Work. See Section 1.13 of these General Conditions of Contract.

KK. Owner. See Subparagraph 1.3A2(c) of the Contract Agreement.

LL. Pay Request. See Subsection 5.1B of these General Conditions of Contract.

MM. Person. Any corporation, partnership, individual, joint venture, trust, estate, association, business, enterprise, proprietorship or other legal entity of any kind, either public or private, and any legal successor, agent, representative or authorized assign of the above.

NN. Price Proposal. The total compensation proposed to be accepted by Contractor for the Work in the Bidder's Proposal and from which the Contract Price is derived.

OO. Progress Payment. The monthly installment payment to be made by Owner to Contractor in accordance with, and subject to the terms and conditions set forth in, Article V of these General Conditions of Contract.

PP. Punch List. See Subsection 5.2B of these General Conditions of Contract.

GENERAL CONDITIONS

QQ. Punch List Work. See Subsection 5.2A of these General Conditions of Contract.

RR. Required Coverages. See Section 4.1 of these General Conditions of Contract.

SS. Required Submittals. See Subsection 1.3A of these General Conditions of Contract.

TT. Specifications. All (i) specifications furnished with the Invitation for Bidder's Proposals, (ii) supplementary specifications furnished to clarify and to define in greater detail the intent of the drawings and specifications furnished with the Invitation for Bidder's Proposals, (iii) specifications submitted pursuant to this Contract by Contractor to Engineer and reviewed and stamped by Engineer with no exception noted or an equivalent notation, and (iv) specifications submitted to Contractor during the progress of the Work as provided for in this Contract. Unless otherwise noted, the term "Specifications" as used in this Contract shall not refer to any other standard specifications.

UU. Subcontract. Any written or oral contract between Contractor and a Subcontractor or Supplier.

VV. Subcontractor. Any Person, other than Contractor, that provides, performs or completes any part of the Work at the Work Site, and the duly authorized officers, employees, agents, and representatives of any such Person.

WW. Supplier. Any Person, other than Contractor, that supplies equipment, materials or supplies for the Work, including that fabricated to a special design, but that does not provide or perform labor at the Work Site, and the duly authorized officers, employees, agents, and representatives of any such Person.

XX. Unit Price. The price set forth in the Schedule of Prices to be paid for each acceptable unit of each Unit Price Item, if any, installed and complete in place, measured on the basis provided for in the Contract Drawings and Specifications.

YY. Unit Price Items. The items set forth in the Schedule of Prices, if any, to be paid for on a Unit Price basis.

ZZ. Value of the Work. The value of the Work, determined in accordance with Subsection 5.1C of these General Conditions of Contract, for purposes of determining the then current amount of any Progress Payment to be made by Owner under this Contract.

AAA. Work. See Subparagraph 1.3A2(d) of the Contract Agreement.

BBB. Work Site. See Subparagraph 1.3A2(e) of the Contract Agreement.

GENERAL CONDITIONS

7.2 Word Usage

A. Tense and Form. Words used or defined in one tense or form shall include other tenses and derivative forms.

B. Number. Words in the singular number shall include the plural number, and words in the plural number shall include the singular number.

C. Shall and May. The word “shall” is mandatory. The word “may” is permissive.

D. Subjective Standards. Whenever in this Contract the terms “as ordered,” “as directed,” “as required,” “as allowed,” “as approved,” or terms of like effect or import, or the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” or “satisfactory,” or adjectives of like effect or import, are used to describe a requirement, direction, review, or judgment of Owner or Engineer as to the Work, it is intended that such requirement, direction, review, or judgment shall be solely to evaluate the Work for compliance with this Contract, shall not relieve Contractor of the entire responsibility for the performance of the Work in full compliance with the requirements of this Contract, and shall not be regarded as any assumption of risk or liability by Owner or Engineer.

E. Headings. In case of any difference of meaning or implication between any provision of this Contract and any heading, the Contract provision shall control and no heading shall be construed to limit the scope or intent of any provision of this Contract.

DuPAGE WATER COMMISSION
CONTRACT FOR THE CONSTRUCTION OF
CONTRACT TW-6/25 SECTION 1 (BOOK ROAD)

SPECIAL CONDITIONS OF CONTRACT

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DuPAGE WATER COMMISSION
CONTRACT FOR THE CONSTRUCTION OF
CONTRACT TW-6/25 SECTION 1 (BOOK ROAD)

SPECIAL CONDITIONS OF CONTRACT

1. Scheduling

A. See Section 01 11 00 – SUMMARY OF WORK and Drawings.

2. Special Financial Assurances

A. Additional Insureds/Indemnities. As provided in Subsection 4.2B and Section 4.3 of the Contract Agreement, the following Persons, including the elected and appointed officers, agents, employees, and officials of said Persons (the “Additional Insureds”) shall be named as additional insureds on the Commercial General Liability insurance required pursuant to this Contract, and the hold harmless and indemnification protection specified in Section 4.3 of the Contract Agreement shall be extended to such Additional Insureds as third-party beneficiaries thereof:

1. County of DuPage
2. County of Will
3. City of Naperville
4. Naperville Township
5. Wheatland Township
6. DuPage County Department of Transportation
7. Lockwood, Andrews and Newnam, Inc.
8. Robinson Engineering, Ltd.
9. Stanley Consultants, Inc.
10. Burns & McDonnell
11. Geocon Professional Services

DUPAGE WATER COMMISSION

CONTRACT FOR THE CONSTRUCTION OF

CONTRACT TW-6/25 SECTION 1 (BOOK ROAD)

LIST OF CONTRACT DRAWINGS

GENERAL

<u>SHEET</u> <u>NO.</u>	<u>DRAWING</u> <u>NO.</u>	<u>DRAWING TITLE</u>
1	G-001	COVER SHEET
2	G-002	SHEET INDEX
3	G-003	SEALS AND SIGNATURES
4	G-004	GENERAL NOTES
5	G-005	LEGEND AND ABBREVIATIONS
6	G-006	PROJECT LOCATION MAP
7	G-007	KEY MAP BOOK ROAD
8	G-008	HORIZONTAL ALIGNMENT CONTROL BOOK ROAD STA 596+56.80 TO STA 680+00
9	G-009	HORIZONTAL ALIGNMENT CONTROL BOOK ROAD STA 680+00 TO STA 758+79.74

CIVIL

<u>SHEET</u> <u>NO.</u>	<u>DRAWING</u> <u>NO.</u>	<u>DRAWING TITLE</u>
10	C-101	BOOK ROAD WATER TRANSMISSION MAIN PLAN & PROFILE STA 596+56.80 TO STA 607+00
11	C-102	BOOK ROAD WATER TRANSMISSION MAIN PLAN & PROFILE STA 607+00 TO STA 619+00
12	C-103	BOOK ROAD WATER TRANSMISSION MAIN PLAN STA 619+00 TO STA 631+00
13	C-104	BOOK ROAD WATER TRANSMISSION MAIN PROFILE STA 619+00 TO STA 631+00
14	C-105	BOOK ROAD WATER TRANSMISSION MAIN PLAN & PROFILE STA 631+00 TO STA 643+00
15	C-106	BOOK ROAD WATER TRANSMISSION MAIN PLAN & PROFILE STA 643+00 TO STA 655+00
16	C-107	BOOK ROAD WATER TRANSMISSION MAIN PLAN & PROFILE STA 655+00 TO STA 667+00
17	C-108	BOOK ROAD WATER TRANSMISSION MAIN PLAN STA 667+00 TO STA 679+00
18	C-109	BOOK ROAD WATER TRANSMISSION MAIN PROFILE STA 667+00 TO STA 679+00
19	C-110	BOOK ROAD WATER TRANSMISSION MAIN PLAN STA 679+00 TO STA 691+00
20	C-111	BOOK ROAD WATER TRANSMISSION MAIN PROFILE STA 679+00 TO STA 691+00
21	C-112	BOOK ROAD WATER TRANSMISSION MAIN PLAN STA 691+00 TO STA 703+00
22	C-113	BOOK ROAD WATER TRANSMISSION MAIN PROFILE STA 691+00 TO STA 703+00
23	C-114	BOOK ROAD WATER TRANSMISSION MAIN PLAN STA 703+00 TO STA 715+00
24	C-115	BOOK ROAD WATER TRANSMISSION MAIN PROFILE STA 703+00 TO STA 715+00
25	C-116	BOOK ROAD WATER TRANSMISSION MAIN PLAN STA 715+00 TO STA 727+00
26	C-117	BOOK ROAD WATER TRANSMISSION MAIN PROFILE STA 705+00 TO STA 727+00
27	C-118	BOOK ROAD WATER TRANSMISSION MAIN PLAN STA 727+00 TO STA 739+00

CONTRACT DRAWINGS

28	C-119	BOOK ROAD WATER TRANSMISSION MAIN PROFILE STA 727+00 TO STA 739+00
29	C-120	BOOK ROAD WATER TRANSMISSION MAIN PLAN & PROFILE STA 739+00 TO STA 751+00
30	C-121	BOOK ROAD WATER TRANSMISSION MAIN PLAN & PROFILE STA 751+00 TO STA 759+00
31	C-122	BOOK ROAD WATER TRANSMISSION MAIN PLAN & PROFILE 87TH STREET TUNNEL DETAIL
32	C-123	75TH STREET WATER TRANSMISSION MAIN OVERALL PLAN DWC SYSTEM CONNECTIONS
33	C-124	75TH STREET WATER TRANSMISSION MAIN PLAN 48-INCH WATER MAIN CONNECTION
34	C-125	75TH STREET WATER TRANSMISSION MAIN PLAN 48-INCH REMOTE OPERATED BFV (WEST)
35	C-126	75TH STREET WATER TRANSMISSION MAIN PLAN 48-INCH REMOTE OPERATED BFV (EAST)
36	C-501	WATER TRANSMISSION MAIN DETAILS SHEET 1 OF 29
37	C-502	WATER TRANSMISSION MAIN DETAILS SHEET 2 OF 29
38	C-503	WATER TRANSMISSION MAIN DETAILS SHEET 3 OF 29
39	C-504	WATER TRANSMISSION MAIN DETAILS SHEET 4 OF 29
40	C-505	WATER TRANSMISSION MAIN DETAILS SHEET 5 OF 29
41	C-506	WATER TRANSMISSION MAIN DETAILS SHEET 6 OF 29
42	C-507	WATER TRANSMISSION MAIN DETAILS SHEET 7 OF 29
43	C-508	WATER TRANSMISSION MAIN DETAILS SHEET 8 OF 29
44	C-509	WATER TRANSMISSION MAIN DETAILS SHEET 9 OF 29
45	C-510	WATER TRANSMISSION MAIN DETAILS SHEET 10 OF 29
46	C-511	WATER TRANSMISSION MAIN DETAILS SHEET 11 OF 29
47	C-512	WATER TRANSMISSION MAIN DETAILS SHEET 12 OF 29
48	C-513	WATER TRANSMISSION MAIN DETAILS SHEET 13 OF 29
49	C-514	WATER TRANSMISSION MAIN DETAILS SHEET 14 OF 29
50	C-515	WATER TRANSMISSION MAIN DETAILS SHEET 15 OF 29
51	C-516	WATER TRANSMISSION MAIN DETAILS SHEET 16 OF 29
52	C-517	WATER TRANSMISSION MAIN DETAILS SHEET 17 OF 29
53	C-518	WATER TRANSMISSION MAIN DETAILS SHEET 18 OF 29
54	C-519	WATER TRANSMISSION MAIN DETAILS SHEET 19 OF 29
55	C-520	WATER TRANSMISSION MAIN DETAILS SHEET 20 OF 29
56	C-521	WATER TRANSMISSION MAIN DETAILS SHEET 21 OF 29
57	C-522	WATER TRANSMISSION MAIN DETAILS SHEET 22 OF 29
58	C-523	WATER TRANSMISSION MAIN DETAILS SHEET 23 OF 29
59	C-524	WATER TRANSMISSION MAIN DETAILS SHEET 24 OF 29
60	C-525	WATER TRANSMISSION MAIN DETAILS SHEET 25 OF 29
61	C-526	WATER TRANSMISSION MAIN DETAILS SHEET 26 OF 29
62	C-527	WATER TRANSMISSION MAIN DETAILS SHEET 27 OF 29
63	C-528	WATER TRANSMISSION MAIN DETAILS SHEET 28 OF 29
64	C-529	WATER TRANSMISSION MAIN DETAILS SHEET 29 OF 29
65	C-530	DRAINAGE DETAILS SHEET 1 OF 3
66	C-531	DRAINAGE DETAILS SHEET 2 OF 3

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67	C-532	DRAINAGE DETAILS SHEET 3 OF 3
68	C-533	CULVERT DETAILS SHEET 1 OF 3
69	C-534	CULVERT DETAILS SHEET 2 OF 3
70	C-535	CULVERT DETAILS SHEET 3 OF 3

ELECTRICAL

<u>SHEET</u>	<u>DRAWING</u>	
<u>NO.</u>	<u>NO.</u>	<u>DRAWING TITLE</u>
71	E-001	LEGEND AND SYMBOLS
72	E-501	REMOTE OPERATED VALVE DETAILS SHEET 1 OF 4
73	E-502	REMOTE OPERATED VALVE DETAILS SHEET 2 OF 4
74	E-503	REMOTE OPERATED VALVE DETAILS SHEET 3 OF 4
75	E-504	REMOTE OPERATED VALVE DETAILS SHEET 3 OF 4

ROADWAY RESTORATION

<u>SHEET</u>	<u>DRAWING</u>	
<u>NO.</u>	<u>NO.</u>	<u>DRAWING TITLE</u>
76	R-001	BOOK ROAD TYPICAL CROSS SECTIONS
77	R-002	BOOK ROAD TYPICAL CROSS SECTIONS
78	R-003	BOOK ROAD TYPICAL CROSS SECTIONS
79	R-004	BOOK ROAD TYPICAL CROSS SECTIONS
80	R-101	BOOK ROAD PLAN & PROFILE STA 596+56.80 TO STA 606+50
81	R-102	BOOK ROAD PLAN & PROFILE STA 606+50 TO STA 618+50
82	R-103	BOOK ROAD PLAN & PROFILE STA 618+50 TO STA 630+50
83	R-104	BOOK ROAD PLAN & PROFILE STA 630+50 TO STA 642+50
84	R-105	BOOK ROAD PLAN & PROFILE STA 642+50 TO STA 654+50
85	R-106	BOOK ROAD PLAN & PROFILE STA 654+50 TO STA 666+50
86	R-107	BOOK ROAD PLAN & PROFILE STA 666+50 TO STA 679+50
87	R-108	BOOK ROAD PLAN & PROFILE STA 679+50 TO STA 690+50
88	R-109	BOOK ROAD PLAN & PROFILE STA 690+50 TO STA 702+50
89	R-110	BOOK ROAD PLAN & PROFILE STA 702+50 TO STA 714+50
90	R-111	BOOK ROAD PLAN & PROFILE STA 714+50 TO STA 726+50
91	R-112	BOOK ROAD PLAN & PROFILE STA 726+50 TO STA 738+50
92	R-113	BOOK ROAD PLAN & PROFILE STA 738+50 TO STA 750+50
93	R-114	BOOK ROAD PLAN & PROFILE STA 750+50 TO STA 759+97.30
94	R-115	BOOK ROAD PAVEMENT MARKING PLAN STA 596+56.80 TO STA 618+50
95	R-116	BOOK ROAD PAVEMENT MARKING PLAN STA 618+50 TO STA 642+50
96	R-117	BOOK ROAD PAVEMENT MARKING PLAN STA 642+50 TO STA 666+50
97	R-118	BOOK ROAD PAVEMENT MARKING PLAN STA 666+50 TO STA 690+50
98	R-119	BOOK ROAD PAVEMENT MARKING PLAN STA 690+50 TO STA 714+50
99	R-120	BOOK ROAD PAVEMENT MARKING PLAN STA 714+50 TO STA 738+50
100	R-121	BOOK ROAD PAVEMENT MARKING PLAN STA 738+50 TO STA 759+97.30
101	R-501	BOOK ROAD ROADWAY DETAILS
102	R-502	BOOK ROAD ROADWAY DETAILS

CONTRACT DRAWINGS

103	R-503	BOOK ROAD ROADWAY DETAILS
104	R-504	BOOK ROAD ROADWAY DETAILS
105	R-505	BOOK ROAD ROADWAY DETAILS
106	R-506	BOOK ROAD ROADWAY DETAILS
107	R-507	BOOK ROAD ROADWAY DETAILS
108	R-508	BOOK ROAD ROADWAY DETAILS

EROSION CONTROL

<u>SHEET</u>	<u>DRAWING</u>	
<u>NO.</u>	<u>NO.</u>	<u>DRAWING TITLE</u>
109	EC-101	BOOK ROAD PLANS SHEET 1 OF 7
110	EC-102	BOOK ROAD PLANS SHEET 2 OF 7
111	EC-103	BOOK ROAD PLANS SHEET 3 OF 7
112	EC-104	BOOK ROAD PLANS SHEET 4 OF 7
113	EC-105	BOOK ROAD PLANS SHEET 5 OF 7
114	EC-106	BOOK ROAD PLANS SHEET 6 OF 7
115	EC-107	BOOK ROAD PLANS SHEET 7 OF 7
116	EC-108	DETAILS SHEET 1 OF 2
117	EC-109	DETAILS SHEET 2 OF 2

MAINTENANCE OF TRAFFIC

<u>SHEET</u>	<u>DRAWING</u>	
<u>NO.</u>	<u>NO.</u>	<u>DRAWING TITLE</u>
118	MOT-000	BOOK ROAD SUGGESTED TRAFFIC CONTROL STAGING NOTES
119	MOT-001	BOOK ROAD DETOUR PLANS STAGE 1A
120	MOT-002	BOOK ROAD DETOUR PLANS STAGE 1B
121	MOT-003	BOOK ROAD DETOUR PLANS STAGE 2A
122	MOT-004	BOOK ROAD DETOUR PLANS STAGE 2B
123	MOT-005	BOOK ROAD DETOUR PLANS STAGE 3A
124	MOT-006	BOOK ROAD DETOUR PLANS STAGE 3B
125	MOT-007	BOOK ROAD DETOUR PLANS STAGE 3C
126	MOT-008	BOOK ROAD DETOUR PLANS STAGE 4A
127	MOT-009	BOOK ROAD DETOUR PLANS STAGE 4B
128	MOT-010	BOOK ROAD DETOUR PLANS STAGE 4C
129	MOT-011	BOOK ROAD TYPICAL CROSS SECTIONS
130	MOT-012	BOOK ROAD TYPICAL CROSS SECTIONS
131	MOT-013	BOOK ROAD TYPICAL CROSS SECTIONS
132	MOT-101	BOOK ROAD PLAN STAGE 1A
133	MOT-102	BOOK ROAD PLAN STAGE 1A
134	MOT-103	BOOK ROAD PLAN STAGE 1B
135	MOT-104	BOOK ROAD PLAN STAGE 1B
136	MOT-105	BOOK ROAD PLAN STAGE 2A
137	MOT-106	BOOK ROAD PLAN STAGE 2A
138	MOT-107	BOOK ROAD PLAN STAGE 2B
139	MOT-108	BOOK ROAD PLAN STAGE 2B
140	MOT-109	BOOK ROAD PLAN STAGE 3A

CONTRACT DRAWINGS

141	MOT-110	BOOK ROAD PLAN STAGE 3A
142	MOT-111	BOOK ROAD PLAN STAGE 3B
143	MOT-112	BOOK ROAD PLAN STAGE 3B
144	MOT-113	BOOK ROAD PLAN STAGE 3B
145	MOT-114	BOOK ROAD PLAN STAGE 3C
146	MOT-115	BOOK ROAD PLAN STAGE 3C
147	MOT-116	BOOK ROAD PLAN STAGE 3C
148	MOT-117	BOOK ROAD PLAN STAGE 4A
149	MOT-118	BOOK ROAD PLAN STAGE 4B
150	MOT-119	BOOK ROAD PLAN STAGE 4B
151	MOT-120	BOOK ROAD PLAN STAGE 4C
152	MOT-121	BOOK ROAD PLAN STAGE 4C
153	MOT-501	BOOK ROAD DETAILS
154	MOT-502	BOOK ROAD DETAILS
155	MOT-503	BOOK ROAD DETAILS
156	MOT-504	BOOK ROAD DETAILS
157	MOT-505	BOOK ROAD DETAILS

TRAFFIC SIGNALS

<u>SHEET</u> <u>NO.</u>	<u>DRAWING</u> <u>NO.</u>	<u>DRAWING TITLE</u>
158	TS-101	TEMP TRAFFIC SIGNAL INSTALLATION PLAN & REMOVE EXIST TRAFFIC SIGNAL EQUIP PLAN 75TH STREET AND BOOK ROAD
159	TS-102	BOOK ROAD TEMP TRAFFIC SIGNAL PLAN - MOT STAGES 75TH STREET AND BOOK ROAD
160	TS-103	TEMP CABLE PLAN, PHASE DESIGNATION DIAGRAM AND TEMP EVP SEQUENCE 75TH STREET AND BOOK ROAD
161	TS-104	TRAFFIC SIGNAL RESTORATION PLAN, DETECTOR LOOP REPLACEMENT 75TH STREET AND BOOK ROAD
162	TS-105	TEMP TRAFFIC SIGNAL INSTALLATION PLAN & REMOVE EXIST TRAFFIC SIGNAL EQUIP PLAN 83RD STREET AND BOOK ROAD
163	TS-106	BOOK ROAD TEMP TRAFFIC SIGNAL PLAN - MOT STAGES 83RD STREET AND BOOK ROAD
164	TS-107	TEMP CABLE PLAN, PHASE DESIGNATION DIAGRAM AND TEMP EVP SEQUENCE 83RD STREET AND BOOK ROAD
160	TS-103	TEMP CABLE PLAN, PHASE DESIGNATION DIAGRAM AND TEMP EVP SEQUENCE 75TH STREET AND BOOK ROAD
161	TS-104	TRAFFIC SIGNAL RESTORATION PLAN, DETECTOR LOOP REPLACEMENT 75TH STREET AND BOOK ROAD
162	TS-105	TEMP TRAFFIC SIGNAL INSTALLATION PLAN & REMOVE EXIST TRAFFIC SIGNAL EQUIP PLAN 83RD STREET AND BOOK ROAD
163	TS-106	BOOK ROAD TEMP TRAFFIC SIGNAL PLAN - MOT STAGES 83RD STREET AND BOOK ROAD
164	TS-107	TEMP CABLE PLAN, PHASE DESIGNATION DIAGRAM AND TEMP EVP SEQUENCE 83RD STREET AND BOOK ROAD
165	TS-108	TRAFFIC SIGNAL RESTORATION PLAN, DETECTOR LOOP REPLACEMENT 83RD STREET AND BOOK ROAD
166	TS-109	TEMP TRAFFIC SIGNAL INSTALLATION PLAN & REMOVE EXIST TRAFFIC SIGNAL EQUIP PLAN 87TH STREET AND BOOK ROAD
167	TS-110	BOOK ROAD TEMP TRAFFIC SIGNAL PLAN - MOT STAGES 87TH STREET AND BOOK ROAD

CONTRACT DRAWINGS

168	TS-111	TEMP CABLE PLAN, PHASE DESIGNATION DIAGRAM AND TEMP EVP SEQUENCE 87TH STREET AND BOOK ROAD
169	TS-112	TRAFFIC SIGNAL RESTORATION PLAN, DETECTOR LOOP REPLACEMENT 87TH STREET AND BOOK ROAD
170	TS-113	TEMP TRAFFIC SIGNAL INSTALLATION PLAN & REMOVE EXIST TRAFFIC SIGNAL EQUIP PLAN 95TH STREET AND BOOK ROAD
171	TS-114	BOOK ROAD TEMP TRAFFIC SIGNAL PLAN - MOT STAGES 95TH STREET AND BOOK ROAD
172	TS-115	TEMP CABLE PLAN, PHASE DESIGNATION DIAGRAM AND TEMP EVP SEQUENCE 95TH STREET AND BOOK ROAD
173	TS-116	TRAFFIC SIGNAL RESTORATION PLAN, DETECTOR LOOP REPLACEMENT 95TH STREET AND BOOK ROAD
174	TS-117	TEMP TRAFFIC SIGNAL INSTALLATION PLAN & REMOVE EXIST TRAFFIC SIGNAL EQUIP PLAN CONAN DOYLE ROAD AND BOOK RD
175	TS-118	BOOK ROAD TEMP TRAFFIC SIGNAL PLAN - MOT STAGES CONAN DOYLE ROAD AND BOOK RD
176	TS-119	TEMP CABLE PLAN, PHASE DESIGNATION DIAGRAM AND TEMP EVP SEQUENCE CONAN DOYLE ROAD AND BOOK RD
177	TS-120	TRAFFIC SIGNAL RESTORATION PLAN, DETECTOR LOOP REPLACEMENT CONAN DOYLE ROAD AND BOOK RD
178	TS-121	BOOK ROAD INTERCONNECT PLAN CONAN DOYLE RD TO 103RD ST
179	TS-501	BOOK ROAD DETAILS
180	TS-502	BOOK ROAD DETAILS
181	TS-503	BOOK ROAD DETAILS
182	TS-504	BOOK ROAD DETAILS

CATHODIC PROTECTION

<u>SHEET</u>	<u>DRAWING</u>	<u>DRAWING TITLE</u>
<u>NO.</u>	<u>NO.</u>	
183	CP-501	DETAILS SHEET 1 OF 3
184	CP-502	DETAILS SHEET 2 OF 3
185	CP-503	DETAILS SHEET 3 OF 3

GEOTECHNICAL

<u>SHEET</u>	<u>DRAWING</u>	<u>DRAWING TITLE</u>
<u>NO.</u>	<u>NO.</u>	
186	B-101	BORING PLANS SHEET 1 OF 7
187	B-102	BORING PLANS SHEET 2 OF 7
188	B-103	BORING PLANS SHEET 3 OF 7
189	B-104	BORING PLANS SHEET 4 OF 7
190	B-105	BORING PLANS SHEET 5 OF 7
191	B-106	BORING PLANS SHEET 6 OF 7
192	B-107	BORING PLANS SHEET 7 OF 7
193	B-201	BORING LOGS SHEET 1 OF 7
194	B-202	BORING LOGS SHEET 2 OF 7
195	B-203	BORING LOGS SHEET 3 OF 7
196	B-204	BORING LOGS SHEET 4 OF 7
197	B-205	BORING LOGS SHEET 5 OF 7
198	B-206	BORING LOGS SHEET 6 OF 7
199	B-207	BORING LOGS SHEET 7 OF 7

DUPAGE WATER COMMISSION

**CONTRACT FOR THE CONSTRUCTION OF
CONTRACT TW-6/25 SECTION 1 (BOOK ROAD)**

SPECIFICATIONS

SEE VOLUME II

DuPAGE WATER COMMISSION

CONTRACT FOR THE CONSTRUCTION OF CONTRACT TW-6/25 SECTION 1 (BOOK ROAD)

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: that **[FULL NAME, ADDRESS AND ORGANIZATION OF CONTRACTOR]**, as Principal, hereinafter called Contractor, and **[FULL NAME AND ADDRESS OF SURETY]**, as Surety, a corporation organized and existing under the laws of the State of **[INCORPORATION]**, hereinafter called Surety, are held and firmly bound unto the DuPage Water Commission, 600 East Butterfield Road, Elmhurst, Illinois 60126-4642, as Obligee, hereinafter called Owner, in the full and just sum of **[CONTRACT PRICE]** Dollars (**[\$[CONTRACT PRICE]**), for the payment of which sum of money well and truly to be made, Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents, said amount to include payment of actual costs and damages and for attorneys' fees, architectural fees, design fees, engineering fees, accounting fees, testing fees, consulting fees, administrative costs, court costs, interest and any other fees and expenses resulting from or incurred by reason of Contractor's failure to promptly and faithfully perform its contract with Owner, said contract being more fully described below, and to include attorneys' fees, court costs and administrative and other expenses necessarily paid or incurred in successfully enforcing performance of the obligation of Surety under this bond.

WHEREAS, Contractor has entered into a written agreement dated **[DATE OF CONTRACT AGREEMENT]**, with Owner entitled "Contract Agreement Between DuPage Water Commission and **[CONTRACTOR'S NAME]** for the Construction of *Contract TW-6/25 Section 1(Book Road)* (the "Contract"), the terms and conditions of which are by this reference incorporated herein as though fully set forth herein.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH THAT if Contractor shall well, truly, and promptly perform all the undertakings, covenants, terms, conditions, and agreements of said Contractor under the Contract, including, but not limited to, Contractor's obligations under the Contract: (1) to provide, perform and complete at the Work Site and in the manner specified in the Contract all necessary work, labor, services, transportation, equipment, materials, apparatus, machinery, tools, fuels, gas, electric, water, waste disposal, information, data, and other means and items necessary for the design, if any, construction, and installation of the *Contract TW-6/25 Section 1(Book Road)*, together with related attachments, equipment, and appurtenances thereto; (2) to procure and furnish all permits, licenses, and other governmental approvals and authorizations necessary in connection therewith except as otherwise expressly provided in the Special Conditions of Contract; (3) to procure and furnish all bonds and certificates and policies of insurance specified in the Contract; (4) to pay all applicable federal, state, and local taxes; (5) to do all other things required of Contractor by the

PERFORMANCE BOND

Contract; (6) comply with its obligation to pay not less than the prevailing rate of wages and otherwise comply with the Prevailing Wage Act, 820 ILCS 130/1 *et seq.*; and (7) to provide, perform, and complete all of the foregoing in a proper and workmanlike manner and in full compliance with, and as required by and pursuant to, the Contract; all of which is herein referred to as the "Work," whether or not any of said Work enter into and become component parts of the improvement contemplated, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

Surety, for value received, hereby stipulates and agrees that no changes, modifications, alterations, omissions, deletions, additions, extensions of time, or forbearances on the part of either Owner or Contractor to the other in or to the terms of said Contract; in or to the schedules, plans, drawings, or specifications; in or to the method or manner of performance of the Work; in or to Owner-furnished facilities, equipment, materials, services, or sites; or in or to the mode or manner of payment therefor, shall in any way release Contractor and Surety or either or any of them, or any of their heirs, executors, administrators, successors, or assigns, or affect the obligations of Surety on this bond, all notice of any and all of the foregoing changes, modifications, alterations, omissions, deletions, additions, extensions of time, or forbearances, and notice of any and all defaults by Contractor or of Owner's termination of Contractor being hereby waived by Surety.

Notwithstanding anything to the contrary in the foregoing paragraph, in no event shall the obligations of Surety under this bond in the event of Contractor's default be greater than the obligations of Contractor under the Contract in the absence of such Contractor default.

Notwithstanding anything herein to the contrary, Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner to faithfully fulfill the prevailing wage requirements of the Contract.

In the event of a default or defaults by Contractor, Owner shall have the right to take over and complete the Contract upon 30 calendar days' written notice to Surety, in which event Surety shall pay Owner all costs incurred by Owner in taking over and completing the Contract.

At its option, Owner may instead request that Surety take over and complete the Contract, in which event Surety shall take reasonable steps to proceed promptly with completion no later than 30 calendar days from the date on which Owner notifies Surety that Owner wants Surety to take over and complete the Contract.

Owner shall have no obligation to actually incur any expense or correct any deficient performance of Contractor in order to be entitled to receive the proceeds of this bond.

PERFORMANCE BOND

No right of action shall accrue on this bond to or for the use of any person or corporation other than Owner or the heirs, executors, administrators, or successors of Owner.

Signed and sealed this ____ day of _____, 20____.

Attest/Witness: PRINCIPAL: ***[NAME OF CONTRACTOR]***

By: _____ By: _____
***[NAME OF CONTRACTOR'S
EXECUTING OFFICER]***

Title: _____ Title: ***[TITLE OF CONTRACTOR'S
EXECUTING OFFICER]***

Attest/Witness: SURETY: ***[NAME OF SURETY]***

By: _____ By: _____

Title: _____ Title: _____

Telephone: _____

**SEE GENERAL INSTRUCTIONS TO BIDDERS, SECTION 8,
FOR SIGNATURE REQUIREMENTS**

DuPAGE WATER COMMISSION
CONTRACT FOR THE CONSTRUCTION OF
CONTRACT TW-6/25 SECTION 1 (BOOK ROAD)

LABOR AND MATERIAL PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS: that ***[FULL NAME, ADDRESS AND ORGANIZATION OF CONTRACTOR]***, as Principal, hereinafter called Contractor, and ***[FULL NAME AND ADDRESS OF SURETY]***, as Surety, a corporation organized and existing under the laws of the State of ***[INCORPORATION]***, hereinafter called Surety, are held and firmly bound unto the DuPage Water Commission, 600 East Butterfield Road, Elmhurst, Illinois 60126-4642, as Obligee, hereinafter called Owner, for the use and benefit of itself and of claimants as hereinafter defined, in the full and just sum of ***[CONTRACT PRICE]*** Dollars (\$***[CONTRACT PRICE]***), to be paid to it or the said claimants or its or their assigns, to which payment well and truly to be made Contractor and Surety bind themselves, their heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents, said amount to include attorney's fees, court costs, and administrative and other expenses necessarily paid or incurred in successfully enforcing performance of the obligation of Surety under this bond.

WHEREAS, Contractor has entered into a written agreement dated ***[DATE OF CONTRACT AGREEMENT]***, with Owner entitled "Contract Agreement Between DuPage Water Commission and ***[CONTRACTOR'S NAME]*** for the Construction of *Contract TW-6/25 Section 1 (Book Road)* (the "Contract"), the terms and conditions of which are by this reference incorporated herein as though fully set forth herein.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH THAT if Contractor shall promptly pay or cause to be paid all sums of money that may be due to any claimant with respect to Contractor's obligations under the Contract: (1) to provide, perform, and complete at the Work Site and in the manner specified in the Contract all necessary work, labor, services, transportation, equipment, materials, apparatus, machinery, tools, fuels, gas, electric, water, waste disposal, information, data, and other means and items necessary for design, if any, construction, and installation of the *Contract TW-6/25 Section 1 (Book Road)*, together with related attachments, equipment, and appurtenances thereto; (2) to procure and furnish all permits, licenses, and other governmental approvals and authorizations necessary in connection therewith except as otherwise expressly provided in the Special Conditions of Contract; (3) to procure and furnish all bonds and certificates and policies of insurance specified in the Contract; (4) to pay all applicable federal, state, and local taxes; (5) to do all other things required of Contractor by the Contract; (6) comply with its obligation to pay not less than the prevailing rate of wages and otherwise comply with the Prevailing Wage Act, 820 ILCS 130/1 *et seq.*; and (7) to provide, perform, and complete all of the foregoing in a proper and workmanlike manner and in full compliance with, and as required by and pursuant to, the Contract; all of which is herein referred to as the "Work," whether or not any of said Work enter into and become component parts of the improvement

contemplated, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

For purpose of this bond, a claimant is defined as one having a direct contract with Contractor or with a subcontractor of Contractor to provide, perform or complete any part of the Work.

Contractor and Surety hereby jointly and severally agree that every claimant who has not had all just claims for the furnishing of any part of the Work paid in full, including, without limitation, all claims for amounts due for materials, lubricants, oil, gasoline, rentals of, or service or repairs on, machinery, equipment, and tools consumed or used in connection with the furnishing of any part of the Work, may sue on this bond for the use of such claimant, may prosecute the suit to final judgment for such sum or sums as may be justly due such claimant, and may have execution therein; provided, however, that Owner shall not be liable for the payment of any costs or expenses of any such suit. The provisions of 30 ILCS 550/1 and 30 ILCS 550/2 shall be deemed inserted herein, including the time limits within which notices of claim must be filed and actions brought under this bond.

Notwithstanding anything herein to the contrary, Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner to faithfully fulfill the prevailing wage requirements of the Contract.

Contractor and Surety hereby jointly agree that Owner may sue on this bond if Owner is held liable to, or voluntarily agrees to pay, any claimant directly, but nothing in this bond shall create any duty on the part of Owner to pay any claimant.

Surety, for value received, hereby stipulates and agrees that no changes, modifications, alterations, omissions, deletions, additions, extensions of time, or forbearances on the part of Owner or Contractor to the other in or to the terms of said Contract; in or to the schedules, plans, drawings, or specifications; in or to the method or manner of performance of the Work; in or to Owner-furnished facilities, equipment, materials, services, or sites; or in or to the mode or manner of payment therefor shall in any way release Contractor and Surety or either or any of them, or any of their heirs, executors, administrators, successors, or assigns, or affect the obligations of said Surety on this bond, all notice of any and all of the foregoing changes, modifications, alterations, omissions, deletions, additions, extensions of time, or forbearances and notice of any and all defaults by Contractor or of Owner's termination of Contractor being hereby waived by Surety.

Signed and sealed this ____ day of _____, 20____.

Attest/Witness:

PRINCIPAL: ***[NAME OF CONTRACTOR]***

By: _____

By: _____
***[NAME OF CONTRACTOR'S
EXECUTING OFFICER]***

Title: _____

Title: ***[TITLE OF CONTRACTOR'S
EXECUTING OFFICER]***

Attest/Witness:

SURETY: ***[NAME OF SURETY]***

By: _____

By: _____

Title: _____

Title: _____

Telephone: _____

**SEE GENERAL INSTRUCTIONS TO BIDDERS, SECTION 8,
FOR SIGNATURE REQUIREMENTS**

DuPAGE WATER COMMISSION
CONTRACT FOR THE CONSTRUCTION OF
CONTRACT TW-6/25 SECTION 1 (BOOK ROAD)

MAINTENANCE/WARRANTY BOND

Know ALL MEN BY THESE PRESENTS. That we _____
as Principal, and ___, as Surety, are held and firmly bound unto
_____, State of Illinois as Obligee, in the penal sum of
_____ (\$_____) to which
payment well and truly to be made we do bind ourselves, our and each of our heirs,
executors, administrators, successors, and assigns jointly and severally, firmly by
these presents.

WHEREAS, the said Principal entered into a Contract with the
_____, State of Illinois _____ dated
_____ for _____

WHEREAS, said Contract provides that the Principal will furnish a Bond conditioned
to guarantee for the period of _____ year(s) after approval of the final
payment on said job, by the Owner, against all defects in workmanship and materials
which may become apparent during said period, and

WHEREAS, the said Contract has been completed, and was approved on the
_____ day of _____, 20_____.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH that, if the
Principal shall indemnify the Obligee for all loss that the Obligee may sustain by reason
of any defective materials or workmanship which becomes apparent during the period
of _____ year(s) from _____ and _____ after
_____ then this obligation shall be void,
otherwise to remain in full force and effect.

SIGNED, SEALED, AND DATED

_____(L.S.)

_____(L.S.)

_____(L.S.)

Principal(s)

[Surety Name]

by _____
 , Attorney-in-Fact

DUPAGE WATER COMMISSION
CONTRACT FOR THE CONSTRUCTION OF
CONTRACT TW-6/25 SECTION 1 (BOOK ROAD)
ADDENDA NOS. 1, 2, 3 AND 4

00 91 13 ADDENDUM NO. 1

PART 1 - G E N E R A L

1.01 ADDENDUM

A. Project Information:

1. To: PROSPECTIVE BIDDERS
 2. Project Title: CONTRACT TW-6/25 SECTION 1 (BOOK ROAD)
 3. Date of Addendum: JUNE 10, 2025.
 4. Owner: DUPAGE WATER COMMISSION.
 5. Engineer: LOCKWOOD, ANDREWS & NEWNAM, INC.
- B. This Addendum forms a part of the Contract Documents and modifies the original documents dated May 23, 2025.
- C. Acknowledge receipt of this Addendum in the space provided in the Bidder's Proposal documents included with Bidding Documents Failure to do so may disqualify the Bidder.

1.02 CHANGES TO PROJECT MANUAL

A. Contract Documents – Contract Agreement - Article IV Financial Assurances

1. Remove Subsection “4.2.B Additional Insureds” in its entirety and replace with the following:

B. Additional Insureds

The insurance coverages required pursuant to this Contract shall name Owner, including its Board members and elected and appointed officials, its officers, employees, agents, attorneys, consultants, and representatives, and the Persons identified in Section 4 of the Special Conditions of Contract as additional insured parties (the “Additional Insureds”). The coverage afforded the Additional Insureds shall be primary and non-contributory insurance for the Additional Insureds with respect to claims arising out of operations performed by or on behalf of Contractor. If the Additional Insureds have other insurance which is applicable to the loss, such other insurance shall be on an excess or contingent basis. The amount of the insurance companies’ liability under the insurance policies Contractor maintains shall not be reduced by the existence of such other insurance. All policies shall list the Owner as an additional insured and said coverage must specifically state it is primary and non-contributory.

B. Bidding Documents – General Instructions to Bidders

1. Remove Subsection “9.B Return of Bid Security” in its entirety and replace with the following:

B. Return of Bid Security

Bid Security submitted in the form of Cashier’s Checks or Certified Checks will be returned to all except the Most Favorable Bidders within sixty (60) Days after the opening of Bidder’s Proposals, and to the Most Favorable Bidders within five (5) Days after execution of the Contract Agreement by Owner. Bid Bonds will not be returned unless otherwise requested by Bidder.

C. Bidding Documents – Special Instructions to Bidders

1. Add the following Paragraph under “Bid Form Instructions”:
 7. *Provide name of steel pipe manufacturer, where indicated on the Bid Form. If a bid price is provided for Alternate B or Alternate D, provide name of prestressed concrete cylinder pipe manufacturer, where indicated on the Bid Form. Proposals without at least one pipe manufacturer named in accordance with this instruction will be rejected. Named pipe manufacturer(s) may not be changed after Proposal has been submitted to Owner.*
2. Remove Subsection “Bidder Questions Deadline” in its entirety and replace with the following:

Bidder Questions Deadline
*Bidder questions shall be submitted via email to Bids@dpwc.org. Bidders shall include company name and contact information with submitted questions.
Deadline for Bidder questions is 4:00pm on Friday, June 13th, 2025.*

D. Bidding Documents – Bidder’s Proposal

1. Remove Subsection “3. Contract Time Proposal” in its entirety and replace with the following:
 3. *Contract Time Proposal*

If this Bidder’s Proposal is accepted, Bidder will commence the Work immediately upon execution by Owner of the Contract Agreement (“Commencement Date”) and will perform the Work diligently and continuously and will complete the Work, no later than December 31, 2026 (“Completion Date”).

E. Bidding Documents – Section 00 42 22 – BID FORM

1. Remove Section 00 42 22 in its entirety and replace with the attached revised Section 00 42 22.

1.03 CHANGES TO TECHNICAL SPECIFICATIONS

A. Section 01 30 01 – DIGITAL UTILITY DATA COLLECTION

1. Delete Subsection 3.01.B in its entirety and replace with the following:

B. Contractor shall obtain as-built survey data during or immediately after installation of utility. For open trench and exposed water main or sewer utilities, data points shall be obtained on top of pipe and pipe invert along centerline, at intervals of no more than 50 feet and at all horizontal and vertical directional changes with a minimum of 2 points no more than 5 feet from bend/deflection joints. Utilities that are bored (trenchless) will be surveyed at exposed pit locations at both ends and along boring route with depths manually input every 10 feet from above ground locating devices.

B. Section 01 45 33-13 – STORM WATER POLLUTION PREVENTION PLAN

1. Remove “Anticipated Project Schedule” table under Subsection 3.03.A and replace with the following:

<i>Anticipated Project Schedule</i>		
<i>Activity Description</i>	<i>Estimated Start Date</i>	<i>Estimated End Date</i>
<i>Demolition Activities</i>	<i>Fall 2025</i>	<i>Fall 2026</i>
<i>Surface Restoration and Final Stabilization</i>	<i>Spring 2026</i>	<i>Winter 2026</i>

Note: Contractor to prepare and submit final detailed construction schedule for Owner approval.

C. Section 33 11 01 – PRESTRESSED CONCRETE CYLINDER PIPE

1. Remove Section 33 11 01 in its entirety and replace with the attached revised Section 33 11 01.

D. Section 33 11 02 – STEEL PIPE

1. Remove Section 33 11 02 in its entirety and replace with the attached revised Section 33 11 02.

E. Section 33 11 03 – DUCTILE IRON PIPE

1. Remove Section 33 11 03 in its entirety and replace with the attached revised Section 33 11 03.

F. Section 40 05 05 – DISMANTLING JOINTS

1. Add Section 40 05 05 in its entirety.

G. Section 40 05 61 – GATE VALVES

1. Add Subsection 1.05.B.8:
 8. *Certificate of Compliance*
 - a. *Submit Certificate of Compliance* certifying conformance with American Iron and Steel (AIS) requirements.

H. Section 40 05 62 – PLUG VALVES

1. Add Subsection 1.05.C:
 - C. *Certificate of Compliance*
 1. *Submit Certificate of Compliance* certifying conformance with American Iron and Steel (AIS) requirements.

1.04 CHANGES TO DRAWINGS

- A. Remove Sheet 7 of 199 (Drawing G-007) in its entirety and replace with the attached revised Sheet 7 of 199 containing revised Drawing numbers.

1.05 QUESTIONS AND CLARIFICATIONS

- A. Clarification: Bidder questions shall be submitted via email to Bids@dpwc.org. Bidders shall include company name and contact information with submitted questions.
- B. The following questions were asked during the Pre-Bid Meeting on 6/3/2025 or submitted via email.
1. **Q:** Will pre-bid attendee list be distributed?
A: Yes, attendee list is attached herein.
 2. **Q:** Are accessories (i.e. bolts, nuts, gaskets) included with Owner-furnished butterfly valves?
A: Owner-furnished butterfly valves include valve, bonnet extension, and manual actuator only. Accessories and electric actuator (where applicable) shall be furnished by Contractor and include cost of installation.
 3. **Q:** Can cut-sheets of Owner-furnished valves be shared?
A: Yes, valve cut-sheets for Owner-furnished butterfly valves are attached herein.
 4. **Q:** Will Contractors receive a copy of everyone's Value Engineering (VE) proposals?
A: No, Contractors' VE proposals are confidential and considered propriety information prior to Contract Award. Upon approval of VE Proposal and Contract Award by Owner, the VE Proposal shall be included in Contract Documents, as detailed in Special Instructions to Bidders.
 5. **Q:** On Bid opening day, will award be based on lowest base bid or lowest bid including VE proposals?
A: At Bid opening, Contractor's base bids will be read for each of the submitted Bid Alternates (Page 15 of Bid Form). Determination of Most Favorable Bidder(s) will include subsequent evaluation of Bidder Qualifications and evaluation of VE Proposals submitted with bids, as detailed in Special Instructions to Bidders.
 6. **Q:** Why are trenchless sections designed as steel pipe only?
A: Trenchless crossing at 75th Street (48-inch pipe) was designed as steel pipe only to minimize the casing diameter and maximize depth of cover. Pipe elevation was set based on the connection to the existing 48-inch PCCP water main.

Other trenchless crossings on the Project were designed with vertical drop designs to allow pipe to maintain shallow depth of cover approaching trenchless crossings. This design is based on use of steel pipe. Contractors can propose alternate designs for evaluation, such as use of PCCP with traditional bends, as part of their VE proposal(s).
 7. **Q:** Who is responsible for the LPC-662 (Source Site Certification) & LPC-663 (Uncontaminated Soil Certification) forms?
A: Upon Contract Award, completed forms signed by Owner will be provided to Contractor.
 8. **Q:** Is ductile iron pipe allowed for water main?
A: For pipe 48-inch and 54-inch pipe, PCCP and Steel are the only acceptable pipe material options. Use of ductile iron pipe is acceptable for pipe diameters up to 36-inch.

9. **Q:** Who is responsible for pipe survey layout in the field?
A: Owner has contracted with Robinson Engineering, Ltd. for construction layout of pipeline.
10. **Q:** Who is responsible for video documentation of pipe joints?
A: Owner's Representative (i.e. Construction Engineer/Program Manager) will be responsible for video and photographic documentation of pipe joints. Contractor is responsible for coordination and providing Owner's Representative with proper access to pipe for video and photographic documentation.
11. **Q:** Is winter work allowed?
A: Yes, winter work is allowed and expected. Shutdown of existing 48-inch PCCP water main is only allowed from November 2025 through March 2026. Connections to existing 48-inch water main must be completed during that time.
12. **Q:** Can you specify work restrictions, allowable work hours, and days per week?
A: Allowable work hours and days established by Authority Having Jurisdiction (AHJ) must be followed. Though this has already been discussed with the applicable AHJ(s) at a conceptual level, the Contractor's desired working hours will ultimately be subject to the approval of the Owner and AHJ.
13. **Q:** Can extension to bid period be issued?
A: Bid period will not be extended beyond the June 23, 2025 deadline at this time.

LOCKWOOD ANDREWS &
NEWMAM, INC.



06/10/2025 
Expires: 11/30/2025

END OF ADDENDUM NO. 1

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00 42 22 BID FORM

PART 1 GENERAL

1.01 SUMMARY

A. See Special Instructions to Bidders.

TW-6/25 SECTION 1					
No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
ALTERNATES TABLE					
A1	54-INCH STEEL WATER MAIN BY OPEN-CUT	LF	14,840		
A2	54-INCH STEEL WATER MAIN BY TRENCHLESS CONSTRUCTION	LF	1,400		
A3	ALTERNATE A SUBTOTAL (A1 + A2)				
B1	54-INCH PCCP WATER MAIN BY OPEN-CUT	LF	14,840		
B2	54-INCH STEEL WATER MAIN BY TRENCHLESS CONSTRUCTION	LF	1,400		
B3	ALTERNATE B SUBTOTAL (B1 + B2)				
C1	48-INCH STEEL WATER MAIN BY OPEN-CUT	LF	14,840		
C2	48-INCH STEEL WATER MAIN BY TRENCHLESS CONSTRUCTION	LF	1,400		
C3	ALTERNATE C SUBTOTAL (C1 + C2)				
D1	48-INCH PCCP WATER MAIN BY OPEN-CUT	LF	14,840		
D2	48-INCH STEEL WATER MAIN BY TRENCHLESS CONSTRUCTION	LF	1,400		
D3	ALTERNATE D SUBTOTAL (D1 + D2)				
BASE BID TABLE					
1	MOBILIZATION	LS	1		
2	TEMPORARY FIELD OFFICE	MNTH	18		
3	16-INCH BUTTERFLY VALVE IN VAULT	EA			

PROPOSAL

TW-6/25 SECTION 1					
No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
4	20-INCH BUTTERFLY VALVE IN VAULT	EA			
5	24-INCH BUTTERFLY VALVE IN VAULT	EA			
6	24-INCH REMOTE OPERATED BUTTERFLY VALVE WITH VAULT	EA			
7	30-INCH BUTTERFLY VALVE WITH ACTUATOR MANHOLE	EA			
8	36-INCH BUTTERFLY VALVE WITH ACTUATOR MANHOLE	EA			
9	36-INCH REMOTE OPERATED BUTTERFLY VALVE WITH VAULT	EA			
10	48-INCH BUTTERFLY VALVE WITH ACTUATOR MANHOLE (75 TH STREET – STA 25+00) (OWNER-FURNISHED VALVE)	LS	1		
11	48-INCH BUTTERFLY VALVE WITH ACTUATOR MANHOLE (75 TH STREET – STA 29+25) (OWNER-FURNISHED VALVE)	LS	1		
12	48-INCH BUTTERFLY VALVE WITH ACTUATOR MANHOLE AND DISINFECTION BYPASS ASSEMBLY (BOOK ROAD) (OWNER-FURNISHED VALVE)	LS	1		
13	54-INCH BUTTERFLY VALVE WITH ACTUATOR MANHOLE (OWNER-FURNISHED VALVE)	EA	2		
14	54-INCH REMOTE OPERATED BUTTERFLY VALVE WITH VAULT (OWNER-FURNISHED VALVE)	EA	1		
15	54-INCH BUTTERFLY VALVE WITH ACTUATOR MANHOLE	EA			
16	54-INCH REMOTE OPERATED BUTTERFLY VALVE WITH VAULT	EA			
17	AIR RELEASE VALVE MANHOLE (24-INCH DIA. AND SMALLER PIPE)	EA			
18	AIR RELEASE AND ACCESS MANHOLE (TYPE 1)	EA	6		

PROPOSAL

TW-6/25 SECTION 1					
No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
19	AIR RELEASE AND ACCESS MANHOLE (TYPE 2)	EA	8		
20	BLOW-OFF VALVE WITH MANHOLE (30-INCH DIA. AND SMALLER PIPE)	EA			
21	BLOW-OFF VALVE WITH MANHOLE (36-INCH DIA. AND LARGER PIPE)	EA	5		
22	16-INCH DUCTILE IRON WATER MAIN BY OPEN-CUT	LF			
23	16-INCH DUCTILE IRON WATER MAIN BY TRENCHLESS CONSTRUCTION	LF			
24	20-INCH DUCTILE IRON WATER MAIN BY OPEN-CUT	LF			
25	20-INCH DUCTILE IRON WATER MAIN BY TRENCHLESS CONSTRUCTION	LF			
26	24-INCH DUCTILE IRON WATER MAIN BY OPEN-CUT	LF			
27	24-INCH DUCTILE IRON WATER MAIN BY TRENCHLESS CONSTRUCTION	LF			
28	30-INCH DUCTILE IRON WATER MAIN BY OPEN-CUT	LF			
29	36-INCH DUCTILE IRON WATER MAIN BY OPEN-CUT	LF			
30	36-INCH DUCTILE IRON WATER MAIN BY TRENCHLESS CONSTRUCTION	LF			
31	36-INCH PCCP WATER MAIN BY OPEN-CUT	LF			
32	36-INCH PCCP WATER MAIN BY TRENCHLESS CONSTRUCTION	LF			
33	36-INCH STEEL WATER MAIN BY OPEN-CUT	LF			
34	36-INCH STEEL WATER MAIN BY TRENCHLESS CONSTRUCTION	LF			
35	48-INCH PCCP WATER MAIN BY OPEN-CUT	LF			

PROPOSAL

TW-6/25 SECTION 1					
No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
36	48-INCH PCCP WATER MAIN BY TRENCHLESS CONSTRUCTION	LF			
37	48-INCH STEEL WATER MAIN BY OPEN-CUT	LF			
38	48-INCH STEEL WATER MAIN BY TRENCHLESS CONSTRUCTION	LF			
39	48-INCH STEEL WATER MAIN BY OPEN-CUT (BOOK ROAD STA 752+60.00 TO 756+64.30)	LF	425		
40	48-INCH STEEL WATER MAIN BY TRENCHLESS CONSTRUCTION (BOOK ROAD STA 756+64.30 TO 758+52.24)	LF	188		
41	54-INCH PCCP WATER MAIN BY OPEN-CUT	LF			
42	54-INCH PCCP WATER MAIN BY TRENCHLESS CONSTRUCTION	LF			
43	54-INCH STEEL WATER MAIN BY OPEN-CUT	LF			
44	54-INCH STEEL WATER MAIN BY TRENCHLESS CONSTRUCTION	LF			
45	60-INCH STEEL WATER MAIN BY OPEN-CUT	LF			
46	60-INCH STEEL WATER MAIN BY TRENCHLESS CONSTRUCTION	LF			
47	75 TH STREET CONNECTION TO EXISTING DWC 48-INCH PCCP (STA 25+00)	LS	1		
48	75 TH STREET CONNECTION TO EXISTING DWC 48-INCH PCCP (STA 26+22)	LS	1		
49	75 TH STREET CONNECTION TO EXISTING DWC 48-INCH PCCP (STA 29+25)	LS	1		
50	30-INCH STUB FOR FUTURE CONNECTION	LS	1		
51	REMOVE 36-INCH TEST PLUG AND CONNECT TO 36-INCH WATER MAIN (ADJACENT CONTRACT)	EA			

PROPOSAL

TW-6/25 SECTION 1					
No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
52	REMOVE 54-INCH TEST PLUG AND CONNECT TO 54-INCH WATER MAIN (ADJACENT CONTRACT)	EA	1		
53	TRENCH BACKFILL (SELECT MATERIAL)	CY	39,240		
54	TRENCH BACKFILL (NATIVE MATERIAL)	CY			
55	CATHODIC PROTECTION SYSTEM	LS	1		
56	EARTH EXCAVATION	CY	4,210		
57	AGGREGATE BASE COURSE, TYPE B 2-INCH	SY	760		
58	AGGREGATE BASE COURSE, TYPE B 4-INCH	SY	70		
59	AGGREGATE BASE COURSE, TYPE B 6-INCH	SY	25,100		
60	PORTLAND CEMENT CONCRETE BASE COURSE, 8-INCH	SY			
61	BITUMINOUS MATERIALS (PRIME COAT)	LB	53,000		
62	BITUMINOUS MATERIALS (TACK COAT)	LB	25,220		
63	HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50	TON	13,590		
64	HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N70	TON			
65	HOT-MIX ASPHALT SURFACE COURSE, IL-9.5, MIX D, N50	TON	6,470		
66	HOT-MIX ASPHALT SURFACE COURSE, IL-9.5, MIX D, N70	TON			
67	HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 8-INCH	SY			
68	HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 12-INCH	SY			

PROPOSAL

TW-6/25 SECTION 1					
No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
69	PORTLAND CEMENT CONCRETE PAVEMENT, 12-INCH	SY			
70	PROTECTIVE COAT	SY			
71	PORTLAND CEMENT CONCRETE DRIVEWAY PAVEMENT, 6-INCH	SY			
72	PORTLAND CEMENT CONCRETE DRIVEWAY PAVEMENT, 8-INCH	SY	70		
73	PORTLAND CEMENT CONCRETE SIDEWALK, 5-INCH	SF			
74	PORTLAND CEMENT CONCRETE SIDEWALK, 6-INCH	SF	6,720		
75	DETECTABLE WARNINGS	SF	400		
76	PAVEMENT REMOVAL	SY	24,290		
77	HOT-MIX ASPHALT SURFACE REMOVAL, 1 1/2-INCH	SY			
78	HOT-MIX ASPHALT SURFACE REMOVAL, 1 3/4-INCH	SY	32,470		
79	DRIVEWAY PAVEMENT REMOVAL	SY	430		
80	COMBINATION CURB AND GUTTER REMOVAL	LF	3,630		
81	SIDEWALK REMOVAL	SF	6,590		
82	MEDIAN REMOVAL	SF			
83	COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.12	LF	3,630		
84	COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.18	LF			
85	COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.24	LF			
86	COMBINATION CONCRETE CURB AND GUTTER, TYPE M-4.12	LF			

PROPOSAL

TW-6/25 SECTION 1					
No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
87	CONCRETE MEDIAN, TYPE SB-6.18	SF			
88	STEEL PLATE BEAM GUARDRAIL, TYPE A, 6-FOOT POSTS	LF	50		
89	LONG-SPAN GUARDRAIL OVER CULVERT, 12-FOOT 6-INCH SPAN	LF	30		
90	TRAFFIC BARRIER TERMINAL, TYPE 1B	EA	2		
91	TRAFFIC BARRIER TERMINAL, TYPE 2	EA	2		
92	GUARDRAIL REMOVAL	LF	160		
93	PAVEMENT MARKING BLACKOUT TAPE, 6-INCH	LF	1,220		
94	CHANGEABLE MESSAGE SIGN	CAL DAY	2,920		
95	SHORT TERM PAVEMENT MARKING	LF	9,190		
96	SHORT TERM PAVEMENT MARKING REMOVAL	SF	3,610		
97	TEMPORARY PAVEMENT MARKING LETTERS AND SYMBOLS – PAINT	SF	190		
98	TEMPORARY PAVEMENT MARKING – LINE 4-INCH – PAINT	LF	23,150		
99	TEMPORARY PAVEMENT MARKING – LINE 6-INCH – PAINT	LF			
100	TEMPORARY PAVEMENT MARKING – LINE 24-INCH – PAINT	LF	100		
101	TEMPORARY PAVEMENT MARKING – LINE 4-INCH – TYPE IV TAPE	LF	6,230		
102	TEMPORARY PAVEMENT MARKING – LINE 6-INCH – TYPE IV TAPE	LF			
103	TEMPORARY CONCRETE BARRIER	LF	2,170		
104	IMPACT ATTENUATORS, TEMPORARY (FULLY REDIRECTIVE, NARROW), TEST LEVEL 2	EA	4		

PROPOSAL

TW-6/25 SECTION 1					
No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
105	RELOCATE SIGN PANEL ASSEMBLY – TYPE A	EA	21		
106	THERMOPLASTIC PAVEMENT MARKING – LETTERS AND SYMBOLS	SF	1,040		
107	THERMOPLASTIC PAVEMENT MARKING – LINE 4-INCH	LF	64,350		
108	THERMOPLASTIC PAVEMENT MARKING – LINE 6-INCH	LF	4,910		
109	THERMOPLASTIC PAVEMENT MARKING – LINE 12-INCH	LF	2,460		
110	THERMOPLASTIC PAVEMENT MARKING – LINE 24-INCH	LF	300		
111	PAVEMENT MARKING REMOVAL – GRINDING	SF	16,010		
112	UNDERGROUND CONDUIT, GALVANIZED STEEL, 2-INCH DIA.	LF	1,380		
113	HANDHOLE	EA	3		
114	MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION	EA	6		
115	ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14, ONE PAIR	LF	820		
116	DRILL EXISTING HANDHOLE	EA	2		
117	DETECTOR LOOP, TYPE I	LF	320		
118	DETECTOR LOOP REPLACEMENT	LF	1,770		
119	TEMPORARY TRAFFIC SIGNAL INSTALLATION	EA	5		
120	MODIFY EXISTING CONTROLLER	EA	6		
121	REBUILD EXISTING HANDHOLE	EA			
122	REMOVE EXISTING HANDHOLE	EA	3		
123	CLASS D PATCHES, 12-INCH	SY	1,630		

PROPOSAL

TW-6/25 SECTION 1					
No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
124	BIKE PATH REMOVAL	SY			
125	MAILBOX REMOVE AND REPLACE	EA	2		
126	FENCE REMOVAL AND REINSTALLATION	LF			
127	TEMPORARY ACCESS (PRIVATE ENTRANCE)	EA	12		
128	TEMPORARY ACCESS (COMMERCIAL ENTRANCE)	EA	2		
129	TEMPORARY ACCESS (ROAD)	EA	10		
130	TRAFFIC CONTROL AND PROTECTION, (SPECIAL)	LS	1		
131	HOT-MIX ASPHALT DRIVEWAY PAVEMENT, 4-INCH	SY	330		
132	HOT-MIX ASPHALT DRIVEWAY PAVEMENT, 10-INCH	SY			
133	DRAINAGE AND UTILITY STRUCTURES TO BE ADJUSTED	EA	10		
134	DRAINAGE AND UTILITY STRUCTURES TO BE RECONSTRUCTED	EA	1		
135	TEMPORARY INFORMATION SIGNING	SF	160		
136	TEMPORARY PAVEMENT	SY	740		
137	TEMPORARY TRAFFIC SIGNAL TIMING	EA	27		
138	HOT-MIX ASPHALT SURFACE REMOVAL – BUTT JOINT	SY	740		
139	TELESCOPING STEEL SIGN SUPPORT	LF	25		
140	METAL POST – TYPE A	LF	25		
141	EROSION CONTROL SEEDING, LAWN MIXTURE (CLASS 1)	LB	830		
142	EROSION CONTROL SEEDING, ROADSIDE MIXTURE (CLASS 2)	LB	660		

PROPOSAL

TW-6/25 SECTION 1					
No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
143	EROSION CONTROL SEEDING – PASTURE MIXTURE	LB			
144	EROSION CONTROL SEEDING – SPORTS TURF MIXTURE	LB			
145	HIGH VISIBILITY SAFETY FENCE	LF	9,580		
146	TREE AND SHRUBBERY PROTECTION	EA	130		
147	TREE REMOVAL (6- TO 15-UNIT DIAMETER)	EA			
148	TREE REMOVAL (OVER 15-UNIT DIAMETER)	EA			
149	TREE REMOVAL (AREA)	AC			
150	DUAL FENCE BARRIER (HIGH-VISIBILITY GEOTEXTILE OUTER FENCE)	LF	3,830		
151	SILT FENCE	LF	11,000		
152	INLET PROTECTION, CURB	EA			
153	INLET PROTECTION, AREA	EA	40		
154	ROLLED EROSION CONTROL PRODUCTS	LF			
155	UTILITY RELOCATION/IMPROVEMENT	EA			
156	REMOVE AND REPLACE COMMUNICATIONS LINE	LF			
157	LIGHT POLE RELOCATION	EA			
158	WATER MAIN RELOCATION	LS			
159	REMOVE AND REPLACE 2-INCH GAS MAIN	LF			
160	REMOVE AND REPLACE 4-INCH GAS MAIN	LF			
161	REMOVE AND REPLACE 6-INCH GAS MAIN	LF			
162	REMOVE AND REPLACE 6-INCH SANITARY SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF			
163	REMOVE AND REPLACE 8-INCH SANITARY SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF	130		

PROPOSAL

TW-6/25 SECTION 1					
No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
164	REMOVE AND REPLACE 12-INCH SANITARY SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF			
165	REMOVE AND REPLACE 15-INCH SANITARY SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF			
166	REMOVE AND REPLACE 16-INCH SANITARY SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF			
167	REMOVE AND REPLACE 18-INCH SANITARY SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF			
168	REMOVE AND REPLACE 24-INCH SANITARY SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF			
169	REMOVE AND REPLACE 12-INCH FES	EA			
170	REMOVE AND REPLACE 15-INCH FES	EA			
171	REMOVE AND REPLACE 18-INCH FES	EA			
172	REMOVE AND REPLACE 24-INCH FES	EA			
173	REPLACE 4-INCH STORM SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF			
174	REPLACE 6-INCH STORM SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF			
175	REPLACE 8-INCH STORM SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF			
176	REPLACE 10-INCH STORM SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF	240		
177	REPLACE 12-INCH STORM SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF	630		
178	REPLACE 15-INCH STORM SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF	160		
179	REPLACE 16-INCH STORM SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF			
180	REPLACE 18-INCH STORM SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF	240		

PROPOSAL

TW-6/25 SECTION 1					
No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
181	REPLACE 20-INCH STORM SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF			
182	REPLACE 24-INCH STORM SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF	270		
183	REPLACE 30-INCH STORM SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF			
184	REPLACE 36-INCH STORM SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF			
185	REPLACE 42-INCH STORM SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF			
186	REMOVE AND REPLACE HEADWALL OF 36-INCH RCP CULVERT	LS			
187	REMOVE AND REPLACE 12-INCH STORM CULVERT WITH 12-INCH CMP CULVERT	LF			
188	REMOVE AND REPLACE 15-INCH STORM CULVERT WITH 15-INCH CMP CULVERT	LF			
189	REMOVE AND REPLACE 24-INCH STORM CULVERT WITH 24-INCH CMP CULVERT	LF			
190	REMOVE AND REPLACE 30-INCH STORM CULVERT WITH 30-INCH CMP CULVERT	LF	60		
191	REMOVE AND REPLACE 48-INCH BY 48-INCH REINFORCED CONCRETE BOX CULVERT	LF			
192	REMOVE AND REPLACE HEADWALL OF 65-INCH BY 65-INCH BOX CULVERT	LS			
193	REMOVE AND REPLACE CATCH BASIN	EA	21		
194	REMOVE AND REPLACE STORM MANHOLE	EA			
195	REMOVE AND REPLACE INLET	EA			
196	CONNECTION TO EXISTING SEWER STRUCTURE	EA	42		
197	REMOVE AND REPLACE DUAL STORM CULVERTS 36-INCH AND HEADWALLS	LS	1		

PROPOSAL

TW-6/25 SECTION 1					
No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
198	CROSSING EXISTING 58-INCH BY 91-INCH ELLIPTICAL CONCRETE PIPE (BOOK ROAD)	LS	1		
199	STEEL SHEET PILING COFFERDAM	SF			
200	STRUCTURAL LINER FOR WATER MAIN	LF			
201	STRUCTURAL LINER FOR SEWERS	LF			
202	MS 31A METERING STATION (MONTGOMERY 1)	LS			
203	MS 31B METERING STATION (MONTGOMERY 2)	LS			
204	MS 32A METERING STATION (OSWEGO 1)	LS			
205	MS 32B METERING STATION (OSWEGO 2)	LS			
206	MS 32C METERING STATION (OSWEGO 3)	LS			
207	MS 33A METERING STATION (YORKVILLE 1)	LS			
208	MS 33B METERING STATION (YORKVILLE 2)	LS			
209	CHEMICAL FEED BUILDING	LS			
210	VERTICAL DROP STRUCTURES (STA 619+71 AND STA 623+24)	LS	1		
211	VERTICAL DROP STRUCTURES (STA 677+21 AND STA 679+55)	LS	1		
212	VERTICAL DROP STRUCTURES (STA 700+39 AND STA 708+30)	LS	1		
213	VERTICAL DROP STRUCTURES (STA 724+89 AND STA 726+79)	LS	1		

PROPOSAL

TW-6/25 SECTION 1					
No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
IND1	EXPLORATORY EXCAVATION	CF	1,000		
IND2	ADJUST WATER SERVICE LINE	LF	100		
IND3	ADJUST SEWER SERVICE LINE	LF	100		
IND4	REMOVE AND REPLACE DRAIN TILE	LS			
ALL1	ALLOWANCE: CITY OF NAPERVILLE DPU-E ELECTRIC SERVICES	LS	1	\$25,000	\$25,000
BB1	BASE BID SUBTOTAL (SUM OF BID PRICE FOR ITEMS 1-213 + IND 1-4 + ALL1)				

Steel Pipe Manufacturer: _____

PCCP Manufacturer: _____

TOTAL BID PRICE TABLE
ALTERNATE A (54-INCH STEEL) TOTAL BID PRICE (A3 +BB1)
TOTAL BID PRICE (\$ Figures)
TOTAL BID PRICE (Words)
ALTERNATE B (54-INCH PCCP) TOTAL BID PRICE (B3 +BB1)
TOTAL BID PRICE (\$ Figures)
TOTAL BID PRICE (Words)
ALTERNATE C (48-INCH STEEL) TOTAL BID PRICE (C3 + BB1)
TOTAL BID PRICE (\$ Figures)
TOTAL BID PRICE (Words)
ALTERNATE D (48-INCH PCCP) TOTAL BID PRICE (D3 +BB1)
TOTAL BID PRICE (\$ Figures)
TOTAL BID PRICE (Words)

PROPOSAL

VALUE ENGINEERING PROPOSAL NO. _____

BIDDER NAME: _____

Item No.	Plan Quantity	Plan Unit Price	Plan Bid Price	Revised Quantity	Revised Unit Price	Revised Bid Price	Deductions/Additions (Plan Bid Price – Revised Bid Price, or Price of New Item)
TOTAL DEDUCTIONS (SUM OF ROWS ABOVE)							\$
TOTAL APPLIED DEDUCTIONS ¹ (50% TOTAL DEDUCTIONS)							\$
ALTERNATE A REVISED TOTAL BID PRICE (A3 + BB1 – 50% TOTAL APPLIED DEDUCTIONS)							\$
ALTERNATE B REVISED TOTAL BID PRICE (B3 + BB1 – 50% TOTAL APPLIED DEDUCTIONS)							\$
ALTERNATE C REVISED TOTAL BID PRICE (C3 + BB1 – 50% TOTAL APPLIED DEDUCTIONS)							\$
ALTERNATE D REVISED TOTAL BID PRICE (D3 + BB1 – 50% TOTAL APPLIED DEDUCTIONS)							\$

1. Total applied deductions calculated in accordance with VE Incentive formula provided in Special Instructions to Bidders. Actual final approved Total Applied Deductions will be calculated based on final Owner's costs, as described in the Special Instructions to Bidders.

Reduction in schedule (calendar days): _____

Description of Value Engineering Proposal (provide attachments or additional pages as necessary):

VALUE ENGINEERING SUMMARY TABLE	
Alternates Total Bid Prices from Total Bid Price Table	
Alternate A Total Bid Price	\$
Alternate B Total Bid Price	\$
Alternate C Total Bid Price	\$
Alternate D Total Bid Price	\$
Value Engineering Proposals 50% Deductions from VE Proposal Table(s), as Applicable	
Value Engineering Proposal #1 Deductions (50% Total)	\$
Value Engineering Proposal #2 Deductions (50% Total)	\$
Value Engineering Proposal #3 Deductions (50% Total)	\$
Value Engineering Proposal #4 Deductions (50% Total)	\$
Value Engineering Proposal #5 Deductions (50% Total)	\$
Value Engineering Proposal #6 Deductions (50% Total)	\$
Value Engineering Proposal #7 Deductions (50% Total)	\$
POTENTIAL TOTAL VALUE ENGINEERING DEDUCTIONS IF ALL VE PROPOSALS ARE APPROVED:	\$
Reduced Total Bid Prices (Total Bid Price – Potential Total VE Deductions)	
Alternate A Reduced Total Bid Price	\$
Alternate B Reduced Total Bid Price	\$
Alternate C Reduced Total Bid Price	\$
Alternate D Reduced Total Bid Price	\$

33 11 01 PRESTRESSED CONCRETE CYLINDER PIPE

PART 1 - GENERAL

1.01 SUMMARY

- A. This Section includes requirements for providing supervision, labor, material, tools equipment, testing, training, and related items to install and place in operation prestressed concrete cylinder pipe.
- B. Extent of prestressed concrete cylinder piping is shown on Drawings and/or in Schedules.

1.02 RELATED WORK

- A. Section 01 22 00 – UNIT PRICES
- B. Section 01 33 00 – SUBMITTAL PROCEDURES
- C. Section 01 40 00 – QUALITY REQUIREMENTS
- D. Section 13 47 13 – CATHODIC PROTECTION
- E. Section 31 23 16 – EXCAVATION, BACKFILL, AND COMPACTION FOR UTILITIES
- F. Section 33 11 02 – STEEL PIPE
- G. Section 33 11 03 – DUCTILE IRON PIPE

1.03 REFERENCES

- A. AASHTO HS-20 – Loading Design Specifications.
- B. ACI 318 – Building Code Requirements for Structural Concrete.
- C. ANSI B16.1 – Gray Iron Pipe Flanges and Flanged Fittings: Classes 25, 125, and 250.
- D. ANSI/ASME Boiler and Pressure Vessel Code, Section IX.
- E. ANSI/AWS B2.1 – Welding Procedure and Performance Qualification.
- F. ANSI/AWS D1.1 – Structural Welding Code – Steel.
- G. ANSI/AWS D1.3 – Structural Welding Code – Sheet Steel.
- H. ANSI/NSF 61 – Drinking Water System Components – Health Effects.
- I. ASTM A36 – Carbon Structural Steel.
- J. ASTM A283 – Low and Intermediate Tensile Strength Carbon Steel Plates.
- K. ASTM A370 – Standard Test Methods and Definitions for Mechanical Testing of Steel Products.
- L. ASTM C497 – Standard Test Methods for Concrete Pipe, Concrete Box Sections, Manhole Sections, or Tile.
- M. ASTM C595 – Blended Hydraulic Cements
- N. ASTM A648 – Steel Wire, Hard-Drawn for Prestressed Concrete Pipe.
- O. ASTM C33 – Concrete Aggregates.
- P. AWWA C200 – Steel Water Pipe, 6 Inches (150 mm) and Larger.
- Q. AWWA C206 – Field Welding of Steel Water.

- R. AWWA C207 – Steel Pipe Flanges for Waterworks Service, Sizes 4 Inches Through 144 Inches (100 mm Through 3,600 mm).
- S. AWWA C208 – Dimensions for Fabricated Steel Water Pipe Fittings.
- T. AWWA C210 – Liquid-Epoxy Coatings and Linings for Steel Water Pipe and Fittings.
- U. AWWA C301 – Prestressed Concrete Pressure Pipe, Steel-Cylinder Type.
- V. AWWA C304 – Design of Prestressed Concrete Cylinder Pipe.
- W. AWWA M9 – Concrete Pressure Pipe.

1.04 QUALITY ASSURANCE

A. Quality Assurance Testing

1. Each completed cylinder with joint rings welded to its ends shall be subjected to a hydrostatic test as specified. Reports of all cylinder hydrostatic tests shall be submitted to Owner's Representative on a weekly basis.
2. All welds on fittings, specials, and appurtenances shall be tested and inspected by dye penetrant method. Submit test report to Owner's Representative.
3. Quality control tests shall be conducted for each production coil of wire. Reports shall be submitted to Owner's Representative on a weekly basis.
4. Mill test reports of all steel plates and sheets used in fabrication of pipes, fittings, specials, and appurtenances shall be submitted to Owner's Representative.
5. At least two standard concrete test cylinders shall be made in accordance with AWWA C301, Sec. 4.6.5.5. Quality assurance test to determine modulus of elasticity of concrete shall be made at 2-month intervals, or whenever source of aggregate or cement are changed. Reports shall be submitted to Owner's Representative on a weekly basis.
6. In event that pipe fails to withstand such tests to satisfaction of Owner's Representative, manufacturer shall have right to test two additional standard length of pipes, selected at random by Owner's Representative, from same lot of pipes that faulty pipe was selected. If two pipes successfully pass tests, remainder of lot may be accepted by Owner's Representative. If either of two pipes fails to pass test, remainder of lot will not be accepted, unless each pipe successfully passes quality assurance test.
7. All rejected materials and pipes shall be plainly marked and replaced by Contractor with materials which meet requirements of these Specifications, without additional cost to Owner. Prior to performing tests, manufacturer shall submit proposed test procedures and dates for Owner's Representative review. Owner's Representative reserves right to witness any or all tests.

B. Proof of Design Tests

1. One proof of design test shall be performed for each size of each class of pipe by manufacturer, witnessed, and each witnessed pipe marked by Owner's Representative – at no additional cost to Owner – and results of tests submitted to Owner's Representative for approval prior to start of manufacture. Proof of design test shall be conducted before delivery of any pipe. Purpose of the tests is to prove that design and quality of each size and class of pipe meets Specification requirements. For each test, one standard length from each size of pipe shall be selected. Test results shall meet requirements as outlined in this Specification. In the event that pipe fails to meet above requirements, manufacturer may conduct two additional tests on two lengths of pipe randomly selected by Owner's Representative. Failure of either two lengths shall require an independent thorough review of pipe manufacturing process quality control and quality assurance test program by an outside expert acceptable to Owner's Representative and manufacturer. Manufacturer shall be responsible for all cost incurred by review. Proof of design tests shall be as follows:

a. Hydrostatic Test

- 1) Hydrostatic test to zero concrete stress pressure, P_o , without incipient pipe coating crack, leaks, and seeps. This test pressure shall be maintained for a minimum 20 minutes.
- 2) Test to determine pressure to cause first visible coating crack (0.002 inch x 12 inches long).
- 3) Hydrostatic test to cause bursting pressure, P_b .

C. Restrained Joint Tests

1. In lieu of satisfactory design calculations, a minimum of one test for each type and size of restrained joint shall be performed to prove serviceability of proposed design. Test pipe shall be selected from pipe to be used for Project. Restrained joint tests shall be performed on initial pipe prior to manufacturing remaining of pipe with restrained joints to prove restrained joints meet Specification requirements. Test shall consist of two pipe units from each size pipe harnessed together with each type of proposed restrained joint and hydrostatically tested to zero concrete stress, P_o , or maximum permissible joint design pressure. Restrained joint shall be grouted as recommended by manufacturer for field installation.
2. Restrained joints tests shall be as follows:
 - a. Apply internal pressure to zero concrete stress, P_o , or maximum permissible joint design pressure for minimum of 20 minutes. There shall be no incipient pipe coating cracks, leaks, seeps, or loss of water from pipe or restrained joint. No circumferential crack greater than 0.04 inch on restrained joint cement-mortar grout shall occur.
 - b. In the event that restrained joint fails to withstand such test to satisfaction of Owner's Representative, design of restrained joint will be rejected. It will be manufacturer's responsibility to redesign restrained joint and retest restrained joint without additional cost to Owner's Representative.

D. Test Reports

1. Results of quality assurance tests, proof of design tests, and restrained joint tests shall be summarized in certified reports and submitted to Owner's Representative for review, in accordance with AWWA C301, Sec. 5.1.2.

1.05 SUBMITTALS

A. Conform to requirements of Section 01 33 00 – SUBMITTAL PROCEDURES.

B. No laying schedule will be reviewed without all design data Submittals. Submit shop drawings and product data.

C. Design Calculations

1. All design calculations shall be signed and sealed by a Professional Engineer licensed in the State of Illinois.
2. Manufacturer's pipe design calculations shall be submitted with Contractor's Bid Documents.

D. Laying Schedule

1. Tabulate laying schedules giving order and location of each pipe section and each special corresponding to serial number and/or identification numbers to be painted onto each pipe section, in accordance with AWWA C301, Sec. 4.3.2.
2. Each pipe section and each special shall be identified with a serial number and/or identification number to be painted onto pipe interior or fitting wall.

B. Test Reports

1. Quality assurance, proof of design, and restrained joint tests reports.
2. Concrete Reports, including the following:
 - a. Concrete mix design.
 - b. Concrete compression strength.
 - c. Concrete modulus of elasticity.
 - d. Creep and shrinkage properties.
 - e. Mortar mix design.
 - f. Mortar compression strength and absorption tests.
3. Prestressed wire, steel cylinder, and steel plate test reports.
4. Rubber gasket test reports, joint ring detail dimensions, and gasket sizing calculations.

C. Certificates of Compliance certifying:

1. Conformance with Contract Specifications in every aspect; for example, Certificate of Design.
2. Compliance with NSF/ANSI 61 Standards and certified to be lead-free.
3. Compliance with American Iron and Steel (AIS).

D. Manufacturer's written statement that pipe will meet an $\epsilon = 0.005$ ft (ϵ is defined as specific surface roughness).

E. Manufacturer's written quality control procedures.

F. Written Welding Procedures and Specifications.

G. Manufacturer's Standard Repair Procedures

1. Pipe manufacturer shall submit certificate of approval for each field repair, with a reference to a specific pipe serial number.

H. Detail Drawings and design calculations of prestressed concrete pipe specials and fittings, including combined load design, pipe class, wire size, inches of pitch, cylinder thickness, etc.

I. Details of fittings, specials, and appurtenances.

J. Design calculations for non-restrained and restrained joint rings and connections to steel cylinder. Calculations shall show maximum bending, shearing, compressive, tensile, and combined stresses.

K. If restrained joint calculations are not satisfactory, restrained joint tests may be performed as outlined in Subsection 1.04C of this Specification.

L. Provide 12 feeler gauges to Owner's Representative prior to installation of pipe.

M. Manufacturer's installation guide and approved techniques for field unloading and installation. Provide four copies to Owner's Representative and two copies to Owner.

N. No pipe shall be manufactured until all Drawings and design calculations have been reviewed with no exception noted.

1.06 MEASUREMENT AND PAYMENT

A. Refer to Section 01 22 00 – UNIT PRICES.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to Site and store and protect. Pipe fittings shall be handled by padded slings or devices which will not damage mortar coating. Chains and cables shall not be used.
- B. Rolling or sliding of pipe shall be prohibited under all circumstances, regardless of provisions made to protect pipe. Any pipe dropped shall be returned to manufacturer's plant.
- C. Provide padded bolsters on trucks or rail cars to spread load and provide uniform support.
- D. Provide padded tie-downs on trucks and rail cars. No cables or other metal shall be in contact with mortar coating.
- E. Pipe ends shall be covered/sealed with temporary plastic end caps to prevent debris and foreign materials from contacting pipe interior.
- F. All pipe and fittings damaged in shipment or by handling at Job Site prior to placement at discretion of Owner's Representative shall be repaired at Site, rejected, or returned to fabrication plant for approved repairs or replacement. Manufacturer shall provide recommendations for repairs. Owner's Representative shall be provided written notification 24 hours in advance of all job site repairs.
- G. Pipe shall be strung along route of pipeline to satisfaction of Owner's Representative and shall be protected by pipelaying Contractor with proper lights, barricades, etc.

1.08 WELDING MATERIALS AND PROCEDURES

- A. Conform to ANSI/AWS D1.1, D1.3; ANSI/ASME Boiler and Pressure Vessel Code, Sec. IX; AWWA C206; and applicable state labor regulations. Contractor or manufacturer shall prepare written welding procedure specifications for all welding, in accordance with applicable Standards and AWWA C301.
- B. Contractor or manufacturer shall certify that all welders have been tested and are qualified in accordance with ANSI/ASME Boiler and Pressure Vessel Code Sec. IX or ANSI/AWS B2.1.

PART 2 - PRODUCTS

2.01 GENERAL

- A. Prestressed concrete cylinder pipe specified is a composite structure which consists of the following principal elements: concrete core, steel cylinder and joint rings, high tensile wire, and cement-mortar coating. Compatibility and workability of various pipe elements to act and work together as a single element pipe structure is an essential and basic requirement of Contract Specifications. Maintenance of strict quality control measures at point of manufacture is essential to ensure pipe supplied will function properly over period of intended service life. Special attention is required in design and quality control to provide structurally sound protective cement-mortar coating for pipe during entire service life.
- B. It is Contractor's and pipe manufacturer's responsibility to design, manufacture, deliver, and install pipe in accordance with general guidelines and criteria as defined and specified herein, all in accordance with AWWA C301 and AWWA C304.
- C. Pipe manufacturer shall demonstrate current production capability for volume of work required for Project and shall have had successful fabrication of at least 50,000 linear feet of 48-inch diameter or larger pipe within past 5 years and in accordance with AWWA C301.

2.02 DESIGN AND MANUFACTURE

- A. Design Requirements
 - 1. Pressure class and inside diameter of pipe shall be as specified in Specifications or as shown on Drawings.

2. Fluid to be transported shall be potable water.
 3. Height of cover over pipe shall be 10 feet minimum, or for special applications. Pipe, specials, and fittings shall be designed for a loading condition of not less than indicated on Drawings.
 4. External live load shall be AASHTO HS-20. If indicated on Drawings, external live load (rail load) shall be Cooper E-80 for specific location.
 5. Pipe to be installed inside of tunnel casing shall be designed for full cover, including live load (a single HS-20 or railroad E-80) neglecting casing.
 6. External surcharge, if any, shall be as indicated on Drawings or as specified.
 7. Internal working pressure, P_w , shall be 150 psi (Class 150).
 8. Internal surge pressure, P_t , shall be 100 psi ($P_w + P_t = 250$ psi).
 9. Internal field test pressure, P_{ft} , shall be 1.0 P_w .
 10. Minimum value of time period of pipe exposed to outdoor environment, t_1 , for which pipe shall be designed is 365 days.
 11. Maximum relative humidity for which pipe shall be designed is 60 percent.
 12. Minimum value of time period of exposure of pipe to buried environment before water filling, t_2 , for which pipe shall be designed is 550 days. Contractor and manufacturer shall take action as necessary to ensure that design strength of the pipe is not compromised by any variations of time to installation and filling.
 13. In designing pipe, decompression pressure, P_o (which relieves final prestress in core concrete), shall be equal to, or not less than, sum of internal working pressure, P_w , and internal surge pressure, P_t .
 14. Pipe design shall be made based on materials specified and strictly in accordance with each material's prospective standards and specifications. Design base for specified material strength grade classification shall not be altered or changed from material manufacturer/supplier original designation. No change in specified concrete strength is permitted based on concrete cylinder tests.
- B. For trench conduit, external soil load shall be calculated based upon $W_d = C_d W B_d^2$. When trench width is equal to or greater than transition width, external soil load shall be calculated as embankment conduit, in accordance with AWWA M9: $K\mu=0.15$ and $r_{sd}p= 0.50$.
- C. In calculating external soil load, unit weight, W , of cover shall be 120 pounds per cubic foot with trench width as follows:

Pipe Nominal Diameter (Inches)	Trench Width (B_d)
30	7'-7"
36	8'-3"
42	8'-9"
48	9'-4"
54	10'-0"
60	10'-8"

- D. Bedding coefficients shall be Olander 90 degrees for water weight and earth/live loads. Use Olander zero degrees for pipe weight.
- E. Concrete pipe and fittings shall be designed and manufactured for the "Design Pressure," as stated previously.
- F. The whole of above Specification requirements shall apply with the following modifications or stipulations to AWWA C301 (Section references below have same numerical designation as AWWA C301):
 - 1. Sec. 4.3 – Data to Be Submitted by Manufacturer
 - a. Sec. 4.3.1 – Pipe shall not be supplied from inventory. Manufacturer shall submit detail drawings and tabulated layout schedule for review by Owner's Representative prior to delivery.
 - b. Sec. 4.3.1 – Manufacturer shall provide Owner's Representative with copies of all written quality control procedures, tests, and reports (as required by Specifications) as may be performed by manufacturer during production of pipe. Weekly inspection reports shall be submitted to Owner's Representative.
 - c. Sec. 4.3.2 – Provide a tabulated layout schedule with reference to Stationing and grade line shown on Drawings, as required by Section 1.05B.
 - 2. Sec. 4.4 – Materials
 - a. Sec. 4.4.1.1 – No fly ash or pozzolanic material shall be used to replace cement. Type II cement shall be used for cement-mortar coating and core concrete. Pozzolanic material may be used in core concrete to improve workability.
 - b. Sec. 4.4.2 – Fine aggregate for concrete and mortar shall comply with ASTM C33 and shall not contain coal or lignite.
 - c. Sec. 4.4.3 – Coarse aggregate for concrete shall comply with ASTM C33 and shall not contain coal or lignite.
 - d. Sec. 4.4.4 – Provide samples of each aggregate.
 - e. Sec. 4.4.6 – No admixture shall be used without prior review of Owner's Representative. Test data of admixtures, which manufacturer requests to use, shall be submitted to Owner's Representative for review. Any admixture used shall be chloride free.
 - f. Sec. 4.4.7.1 & 2 – Steel sheets and coils shall have a minimum yield strength of 33,000 psi.
 - g. Sec. 4.4.7.3 – Steel plates for pipe fittings shall be ASTM A283, Grade D or ASTM A36.
 - h. Sec. 4.4.8.1 – Wire for circumferential reinforcement shall conform to ASTM A648, Class II or III.
 - 1) Wire shall be tested in accordance with ASTM A648 and ASTM A370 (and Supplement IV) Specifications with the following modifications or stipulations. Tests shall be conducted on one specimen for every coil of wire for tension, bend, tensile strength, reduction of area, and wrapping tests. Reduction of area test shall meet requirement of 35 percent minimum.
 - 2) In addition to above and tests required under Sec. 4.4.8.1, bolt cutter tests shall be made for one specimen per coil of wire.
 - a) For bolt cutter test, wire specimen shall be cut twice within 3 inches and 90 degrees to each other by a sharp bolt cutter. For acceptance, there shall be no cracks or splits visible to the naked eye.

- 3) Failure of any of test specimens to comply with requirements of this Specification shall constitute grounds for rejection of coil represented by the specimen. Pipe manufacturer, at its discretion, may test three additional new samples to re-examine coil as to why it failed initial test. Should any of these specimens fail, entire coil shall be rejected.
 - 4) Pipe manufacturer shall furnish documents certifying that wire was manufactured and tested in accordance with Specifications, together with reports of test results, to Owner's Representative prior to shipment of pipe.
3. Sec. 4.5 – Design
- a. Sec. 4.5.1 – General Requirements
 - 1) Sec. 4.5.1.5 – Thickness of mortar coating shall provide a minimum cover of 3/4 inch over wire.
 - b. Sec. 4.5.2 – Design of Pipe
 - 1) Sec. 4.5.2.1 – Manufacturer shall submit to Owner's Representative design calculations and supporting test results of concrete properties used in design for review. No pipe shall be manufactured until all design calculations have been reviewed with no exceptions noted.
 - 2) Sec. 4.5.2.2 – Either Class II or Class III wire may be used. Design gross wrapping stress for both Classes of wire shall not exceed 75 percent of Class II minimum tensile strength. All prestressed pipe 48 inches in diameter and larger shall be embedded cylinder pipe.
 - c. Sec. 4.5.3 – Joint Rings
 - 1) Sec. 4.5.3.1 – General
 - a) Joint rings shall be zinc metalized. Minimum thickness of zinc metalizing shall be 0.004 inch. Joint rings shall be designed to provide minimum safety factor of 1.67, based on specified minimum yield strength of joint ring under internal design pressure plus surge pressure.
 - b) For restrained joints, joints shall be designed for internal pressure plus surge and thrust without credit given to blocking resistance. Submit design calculations for Owner's Representative's review.
 - c) Steel bell and spigot joint rings shall be within dimension tolerances permitted under Sec. 4.5.3.2. Spigot ring shall have a groove to receive, hold, and protect gasket, and joints will be self-centering when pipe is laid; therefore, gasket will not be required to support weight of adjoining pipe. Repairs of bell rings are not permitted after core is prestressed. Repair of spigot ring will be permitted if cylinder is welded to ring and weld is dye-tested after repair is made.
 - 2) Sec. 4.5.3.2 – Dimensions and Tolerances
 - a) Where specified or shown on Drawings, joints shall have double gasket for watertightness. Field pressure tests shall be conducted for each joint as pipe is placed.

- b) Steel bell-and-spigot joint rings shall be designed and fabricated so that when pipe is under various design loading. Differential deflection due to external loading and differential radial deformation (strain) – due to internal pressure loading between joint rings and prestressed pipe section – shall be kept to a minimum such that there shall be no visible cracking of mortar coating near joint area. Submit design calculations to justify proposed design for review. No visible initial shrinkage cracks of coating in joint areas, joint, and pipe interface shall be allowed. No separations of coating at joint ring shall be allowed. Each pipe shall be inspected prior to shipping. Any pipe with shrinkage, cracks, or coating separation shall be rejected.
- c) Concrete at ends of pipe shall not extend beyond bell ring or theoretical face of concrete at spigot-end by more than 1/4-inch. Concrete beyond these limits shall be removed by grinding.

d. Sec. 4.5.4 – Rubber Gaskets

- 1) Rubber gasket, or "O-ring," shall be of sufficient volume to substantially fill recess provided when pipe joint is assembled. Volume of the annular space to be occupied by gasket shall be calculated considering the tolerances on spigot groove width and depth, bell ring inside diameter, and spigot outside diameter.
- 2) "O-ring" shall have a minimum stretch of approximately 20 percent and nominal compression of no less than 30 percent after pipe installation. Selection of "O-ring" shall meet all above three criteria. Submit design calculations to justify "O-ring" selection for Owner's Representative's review.
- 3) If more than one size of gasket is required, manufacturer shall label each pipe joint for which type of gasket to use. Deviation from above criteria may be permitted based on history of field performance data or satisfactory field test results provided by pipe manufacturer.
- 4) In the event that more than two gaskets are cut when attempting installation of one pipe section, installation work shall stop and shall not be resumed until pipe manufacturer's representative is on-site and problem has been resolved.

4. Sec. 4.6 – Fabrication

a. Sec. 4.6.3 – Welding Procedure Specifications

- 1) Provide written Welding Procedure Specifications for all welding in accordance with applicable Standard.

b. Sec. 4.6.4 – Fabrication of Steel Cylinders

- 1) Sec. 4.6.4.2 – When wire is wrapped directly on cylinder (lined cylinder pipe), cylinders shall have weld seams that are smooth and plain with continuous surface. Grind as required.
- 2) Sec. 4.6.4.3 – Hydrostatic test for steel cylinder shall be performed only in presence of selected testing service inspector or manufacturer's quality control inspector. Test pressure shall be held for 1 minute or longer.
- 3) Sec. 4.6.4.4 – All indentations and bulges in steel cylinder deviating from cylindrical surface by more than 1/4 inch shall be removed prior to placing concrete. No indentations or bulges shall be permitted in cylinder of concrete-lined cylinder pipe that would cause more than 1/16 inch of clear space between prestressing wire and cylinder after wrapping.

- c. Sec. 4.6.5 – Concrete for Pipe Core
 - 1) Sec. 4.6.5.2 – A minimum of 6.5 sacks (611 lbs.) of cement shall be used per cubic yard of concrete. Water-cement ratio shall not exceed 0.44. Submit concrete mix designs to Owner's Representative.
 - 2) Sec. 4.6.5.4 – Temperature of mix shall not exceed 90°F at time of placement.
 - 3) Sec. 4.6.5.8 – Concrete 28-day compression strength for core concrete shall be limited to $f'_c = 5,400$ psi for cast concrete and $f'_c = 6,900$ psi for spun concrete.
 - a) Concrete test cylinders shall be in accordance with ACI 318, Sec. 5.6.3.3, and no single test cylinder shall be less than f'_c .
- d. Sec. 4.6.7 – Placing of Wire Reinforcement
 - 1) Sec. 4.6.7.1 – At end wraps, all prestress wires shall have a clear distance separation of at least 1/16 inch. Adjacent wires shall not touch at any point except at end of pipe, not more than 1 1/2 inches or less than 1 inch from edge of core to be coated with full depth of mortar coating. Splices in prestress wire shall not be closer than 3 feet, as measured along longitudinal axis of pipe.
 - 2) Sec. 4.6.7.1 – Temperature of cores shall be at least 35°F and free of any frozen particles at time of prestressing. Concrete core shall be properly saturated and surface dry at time cement slurry and prestressing wire are applied. Concrete core shall be thoroughly cleaned prior to wrapping. Pipe manufacturer shall be required to demonstrate that procedure will remove laitance and form release agent from pipe surface, but not cause protrusions of aggregate on surface, which would cause stress concentrations in prestressing wire.
- e. Sec. 4.6.8 – Pipe Coating
 - 1) Sec. 4.6.8.1 – Coating shall be applied within 16 hours after prestressing. If manufacturer has not applied coating within time period, pipe shall be protected and shall show no sign of rust, scale, flaking, or pitting on prestress wires at time of coating. Temperature of pipe shall be at least 40°F at time of coating.
 - 2) Sec. 4.6.8.2 – Mortar for coating shall consist of at least one-part cement to not more than 2 1/2-parts fine aggregate by weight. Design compressive strength of mortar coating shall be limited to $f_{mc} = 5,500$ psi. Mortar coating shall be rounded at ends to avoid thinning of mortar at ends.
 - 3) Sec. 4.6.8.4 – All pipe detected with delamination, hollows, and cracks in coating shall be rejected.
- f. Sec. 4.6.10 – Cracks in Pipe
 - 1) Sec. 4.6.10.2 – Concrete cores which have circumferential cracks greater than 0.04 inch in width shall be repaired with cement or epoxy grout. Concrete cores with visible longitudinal cracks shall be rejected.
- g. Sec. 4.6.11 – Repair of Concrete or Mortar
 - 1) Sec. 4.6.11 – Repairs shall not be permitted without specific prior review of Owner's Representative as to degree of damage, materials, methods, and curing to be used. Prior to pipe repair, standard repair procedures shall be submitted to Owner's Representative for review and stamped "No Exception Noted" or "Exceptions Indicated - Revise and Resubmit for Record Purposes Only."

5. Sec. 4.7 – Fittings and Special Pipe

a. Sec. 4.7.1 – General

- 1) Special fitting details shall be furnished by manufacturer for Owner's Representative review.
- 2) Prestressed concrete cylinder pipe crossing a major waterway – for example, a large stream, river, or channel – shall be designed for negative buoyancy and no allowance shall be taken for earth cover in buoyancy calculation.

b. Sec. 4.7.2 – Fittings

- 1) Sec. 4.7.2.1 – Fittings, flanged pipes, and special pipes – including manhole and blow-off nozzles – shall be designed for same design condition as pipe specified in this Section and Section 33 11 02 – STEEL PIPE, and in accordance with AWWA C200 and AWWA C208.
- 2) Sec. 4.7.2.3 – Interior lining and exterior coating shall be wire fabric reinforced mortar and have minimum thickness of 3/4 inch and 1 1/2 inches, respectively. Inside diameter of fittings shall be smooth and the same as pipe. For outlets and connections, see Section 4.7.4. All exposed steel surfaces not lined or coated with mortar shall be painted with liquid epoxy, in accordance with AWWA C210. Any areas abraded in handling shall be touched up in field.
- 3) Sec. 4.7.2.4 – Interior and exterior surfaces of outlets and connections shall be lined and coated with reinforced mortar as specified in Section 4.7.2.3 for sizes larger than 12 inches. For sizes 12 to 36 inches, thickness of reinforced mortar lining shall be a minimum of 3/8 inch. Mortar shall contain not less than one-part cement to 2 1/2-parts fine aggregate by weight. Interior of all outlets and connections 6 inches and smaller shall be painted with liquid epoxy, in accordance with AWWA C210.

c. Sec. 4.7.4 – Outlets and Connections on Pipe

- 1) Connections for air valves, blow-offs, and other branches larger than 2 inches and less than 12 inches in diameter may be designed and constructed in accordance with Section 4.7.2 with Owner's Representative approval.
- 2) Changes in alignment or grade may be made by deflecting joints of straight pipe or using beveled end pipe, unless single bend fittings are called for on Drawings. Joint openings shall not exceed one-half of maximum opening recommended by pipe manufacturer.
- 3) Pipe joints in vicinity of bend fittings and bevel pipes 2 degrees and greater shall be restrained for distances, as tabulated on Drawings. All fittings and bevel joints shall be furnished with restrained joints.

6. Sec. 5.1 – Inspection and Testing by Purchaser

a. Sec. 5.1.1 – Inspection at Manufacturer's Plant

- 1) Owner's Representative retains right to observe pipe, fittings, all Work performed, and all materials furnished under Contract at manufacturer's plant. During inspection, Owner's Representative shall have free access to those parts of manufacturer's plant that are necessary to ensure compliance with Standard. Manufacturer shall make available gauges necessary for inspection. Manufacturer shall provide Owner's Representative with assistance for handling of pipe and fittings, as necessary. Prior to shipment, each piece of pipe and each fitting may be inspected and stamped by Owner's Representative for their compliance with Specifications.

- b. Sec. 5.1.2 – Inspection of Test Reports
 - 1) Provide to Owner's Representative all test reports required for cylinder assembly, concrete, mortar coating, steel wire, joint, and gasket, as required by Section 1.04F.
 - 7. Sec. 6.3 – Affidavit of Compliance
 - a. Manufacturer shall provide an affidavit that pipe and fittings furnished under Contract comply with all applicable provisions of AWWA C301.
 - 8. Provisions for Corrosion Monitoring and Control System: Provide the following provisions for corrosion monitoring and control system:
 - a. Each pipe segment and fitting shall be provided with a minimum of two bonding plates (14 gauge x 3 inches minimum at 30 degree angle from top) at each end. Bonding plates shall have electrical conducting capacity equivalent to No. 2 copper cable. Bonding plates shall be suitable to accept thermite brazed connections of No. 2 copper cables, each bonded as shown on Drawings.
 - b. For embedded cylinder type pipe, positive bonding connection between bonding plates and prestressing wire is required. A minimum of two 1/32- x2-inch steel shorting straps (180 degrees apart) shall be provided under each layer of prestressing wire with welded connection to bell-and-spigot rings.
 - 9. Based upon chloride test results, which must be received by Owner's Representative prior to laying any pipe, Owner's Representative may designate portions of pipeline to receive an exterior protective coating. Coating system shall be a two-coat vinyl ester system. Primer shall be Tnemec's Vinester Series 120-5002 and topcoat shall be Tnemec's Vinester Series 120-5001. Each coat shall have dry film thickness of 12 to 18 mils. All painting of pipe shall be done strictly in accordance with paint manufacturer's instructions, and all painting shall be performed at pipe manufacturer's plant. Concrete pipe shall be aged for minimum length of time, as recommended by paint manufacturer, before being painted. Any damage to coating shall be touched up with two coats of paint.
- G. Furnished With Pipe
- 1. In addition to straight lengths of pipe, there shall be furnished (within Contract Unit Prices for installed pipe) all fittings, elbows, bends, tees, shorts, reducers, access manholes, special fittings, and wall pieces for manholes – all types of adapters, beveled pipe, outlets, closures, night-caps, plugs, bolts, nuts, etc. – required for complete pipeline construction, not only as shown on Drawings, but also as required by field conditions during construction. Blow-off connections and air valve connections may be fabricated into full pipe lengths where possible with Owner's Representative's approval.
 - 2. Furnish all rubber gaskets, all special materials required for making of joints, and all special materials required to be incorporated in certain pieces of pipe or fittings, such as materials for restrained joints, etc., as shown on Drawings.
 - 3. Pipe supplier shall furnish (within Contract Unit Prices for installed pipe) at no extra cost to Owner, all required closure pieces, shorts, half and full bevel adapters, and all other types of fittings; which, though not specifically called for on Drawings, may still be required by field conditions during construction. Wire mesh required to finish installation of closure pieces shall be supplied by manufacturer.
- H. Wall Pipes
- 1. When connecting a prestressed concrete pipe to a ductile iron pipe, wall pipes shall be ductile iron, in accordance with Section 33 11 03 – DUCTILE IRON PIPE. When connecting a prestressed concrete pipe to a prestressed concrete pipe or a steel pipe, steel wall pipes shall be provided, in accordance with Section 33 11 02 – STEEL PIPE.

I. Restrained Joints

1. Unbalanced forces at pipe bends, tees, valves, etc., shall be restrained by transmitting those forces to pipe wall by means of flexible-tied jointing systems, which shall be accomplished at joint and not between joints. Restrained joint system to be used shall be bell bolt, snap ring, and harnessed clamp type flexible-tied joints, or approved equal. Welding of joints shall not be permitted. Restrained joint materials shall be non-corrosive.
2. Each restrained joint pipe cylinders and steel joint rings shall be designed to withstand and transmit whole angle component of longitudinal thrust force caused by deflection angle, Δ , in accordance with AWWA M9, from pipe pressure of working plus surge, as specified in this Section.
 - a. Required length for restrained pipe on each side of valves, bends and bevel pipes, or tees shall be calculated in accordance with AWWA M9 (latest edition) and shall meet or exceed lengths shown on Drawings.
 - b. All bevel joints shall be restrained as shown on Drawings. Reduction of design longitudinal thrust force along pipeline from maximum thrust point will be permitted. Maximum longitudinal cylinder tensile stress shall have minimum factor of safety of 1.67, based on minimum steel plate yield strength.
 - c. Joint ring circumferential welded joint maximum shearing stress shall not exceed 75 percent of maximum allowable stress of welds, in accordance with applicable AISC Specification.
 - d. Submit design calculations of restrained joint pipes and fittings to Owner's Representative. In designing restrained joints, combined effect of both longitudinal thrust force and radial hoop tensile force (caused by design internal pressure plus surge pressure) shall be considered. Restrained joint system shall have minimum safety factor of 1.67.
 - 1) Soil Type IV.
 - 2) Use minimum soil cover over the entire restrained area.
 - e. Design calculations shall be submitted for Owner's Representative's review. In lieu of satisfactory design calculations, satisfactory restrained joint test results, as specified in Subsection 1.04E, will be accepted.

J. Flanged Joints

1. Concrete pipe flange joints shall be compatible with flange joints specified for ductile iron pipe and valves. Concrete pipe flanges shall have same dimensions as steel pipe and/or valve flanges. Steel flanges shall be in accordance with AWWA C207, Class D.
2. For pipe connected to valves, drilling shall be in accordance with ANSI B16.1, Class 125, or as required. All bolts for buried flange joints shall be COR-TEN type corrosion-resistant steel (CRS).

K. Bolts, Studs, and Nuts

1. All bolts, studs, and nuts shall be in accordance with Section 05 55 00 – BOLTS, ANCHOR BOLTS, AND EXPANSION ANCHORS
2. Cathodic Protection Refer to Section 13 47 13 – CATHODIC PROTECTION.

PART 3 - EXECUTION

3.01 CLEANING AND INSPECTION

- A. Thoroughly clean and dry interior of pipe and fittings of foreign matter before installation and keep interior clean until Work has been accepted. Keep joint contact surfaces clean until jointing is completed. Do not place debris, tools, clothing or other materials in pipe. After pipe laying and joining operations are completed, clean inside of pipe and remove debris.
- B. Before installation, inspect each pipe and fitting for defects. Reject defective, damaged or unsound pipe and fittings and remove them from site.

3.02 INSTALLATION

- A. Do not install pipe without approved lay schedule.
- B. Manufacturer will make available services of representative throughout project duration when deemed necessary by Owner's Representative to advise aspects of installation; including, but not limited to, handling, storing, cleaning and inspecting, coatings and linings repairs, and general construction methods affecting pipe.
- C. Gasketed pipe joints shall be checked around entire circumference with feeler gauge to ensure gasket remains seated in the spigot groove. If displacement has occurred, remove pipe section and remake joint as if for new pipe. Remove old gasket and replace before remaking joint.
- D. In addition to pipe manufacturer's installation guide, the following requirements shall be met:
 - 1. Pipe manufacturer may provide Contractor with suitable lifting devices to be used during pipe unloading operations, to move pipe, to place pipe in trench, or during any other pipe handling operations. Prior approval of pipe manufacturer and Owner's Representative shall be required for lifting devices not furnished by manufacturer.
 - 2. Pipe shall be unloaded, handled, and placed using padded slings or other lifting devices furnished by pipe manufacturer to prevent damage to interior and exterior coating.
 - 3. Joint deflection in field to correct alignment shall be limited to one-half of maximum amount recommended by pipe manufacturer.
 - 4. 1/2-inch minimum joint gap, measured on inside of completed pipe, is required for mortar-filled joint.
- E. Protection of Pipeline:
 - 1. Securely place stoppers or bulkheads in openings and in end of line when construction is stopped temporarily and at end of each day's work.
- F. BEDDING AND BACKFILLING
 - 1. Conform to requirements of Section 31 23 16 – EXCAVATION, BACKFILL, AND COMPACTION FOR UTILITIES.
 - 2. Align pipe at proper grade prior to joint connection and do not shift after jointing operation has been completed.
 - 3. Do not move trench support system (trench safety system) once bedding material is compacted.
 - 4. Excavate outside specified trench section for bell holes and for spaces sufficient to permit removal of slings. Provide bell holes at proper locations for unrestricted access to joint. Form bell holes large enough to facilitate joint wrapping and to permit visual examination of process. Enlarge bell holes as required or directed by Owner's Representative. Subsequent backfilling, thereof, will not be considered as authorized additional excavation and backfill. Backfill bell holes and spaces to satisfaction of Owner's Representative.

5. Remove blocking after placing sufficient backfill to hold pipe in position.
6. Use CLSM in areas of trench excavation 16 feet and greater as embedment material up to springline of pipe.
- G. Follow manufacturer's specifications for nonshrink grouting.
- H. Install each pipe section in sequence identified on lay schedule. Deviations from lay schedule sequence shall be approved by Owner's Representative and denoted on final lay schedule.
- I. Static Electricity
 1. Properly ground pipeline during construction as necessary to prevent build-up of static electricity.
 2. Electrically test, where required, after installation of pipeline is complete.

3.03 CLOSURES AND APPROVED PIPE MODIFICATIONS

- A. No modifications of standard pipe for closures will be permitted in the field.
- B. Pipe manufacturer's representative and Owner's Representative to entirely witness closures and approved pipe modification efforts.
- C. If a butt strap is being used to complete a closure the provide minimum lap of 4 inches between member being joined and edge of butt strap. Weld on both interior and exterior, unless otherwise approved by Owner's Representative.
- D. Provide full circumferential welds on closure joints required to be welded. Owner's Representative will employ an independent certified testing laboratory to perform weld tests on field welds. Use magnetic particle test method for lap welds (or X-ray methods for butt welds) for 100 percent of joint welds. Maintain records of tests. When defective weld is revealed, repair defective weld and retest. Use wire and flux from same manufacturer throughout entire Project.
- E. Fill wrapper in field and allow excess grout water to seep out. Refill wrapper as necessary. When joint mortar level has stabilized and begun to mechanically stiffen, place Ethafoam wrapper over top of joint and secure in place.
- F. Stretch test each gasket splice to twice its unstretched length and inspect for defects.

3.04 VISIBLE CRACKS

- A. No visible cracks longer than 6 inches, measured to be within 15 degrees of line parallel to pipe longitudinal axis, are permitted except:
 1. In surface laitance of centrifugally cast concrete,
 2. In sections of pipe with steel reinforcing collars or wrappers, OR
 3. Within 12 inches of pipe ends.
- B. Repair interior lining cracks that exceed 1/16 inch (0.0625 inch) wide.
- C. Reject pipe with exterior coating cracks that exceed 0.01 inch wide.
- D. Immediately remove pipe from Site when pipe has cracks exceeding limitations and cracks are not repairable.

3.05 FIELD REPAIR PROCEDURES FOR COATING AND LINING

- A. Areas less than or equal to 6 inches in diameter: Patch honeycomb and minor defects in concrete surfaces with nonshrink grout. Use only manual or small (low pressure) air chisels to chip away mortar coating or lining. Cut out unsatisfactory material and replace with nonshrink grout, securely bonded to existing coating or lining. Finish junctures between patches and existing concrete as inconspicuous as possible. Strike off nonshrink grout flush with surrounding surface after patch has stiffened sufficiently to allow for greatest portion of shrinkage. Finish surface in accordance with lining requirements.
- B. Pipe with defective coating areas greater than 6 inches in diameter cannot be used. Immediately remove pipe from Project.
- C. Reject pipe when steel cylinder is dented while making field repair. Immediately remove pipe from Project.

3.06 SURVEYING

- A. Use adequate surveying methods and procedures and employ competent personnel to ensure pipe sections are laid to line and grade and within stipulated tolerances. Measure and record, in form approved by Owner's Representative, in-place survey data for pipe laid each day and submit data to Owner's Representative in accordance with Section 01 30 01 – DIGITAL UTILITY DATA COLLECTION and Section 01 31 00 – PROJECT MANAGEMENT AND COORDINATION.

3.07 PHOTOGRAPH AND VIDEO REPORTING OF PIPE JOINTS

- A. Each completed pipe joint shall be photographed by Owner's Representative. Contractor shall notify Owner's Representative when joints are complete, prior to backfilling pipe. Contractor shall mark date that joint was completed and initials of foreman next to factory painted pipeline station number. Lettering size shall be same as used for pipe stationing number.
- B. Owner's Representative will provide internal pipe joint video report for the pipeline. Video report shall show full circumference of each joint with pipe mark number and station number labeled or identified by voice. Date and time shall be recorded on video.
- C. Contractor shall coordinate with Owner's Representative upon completion of pipe joints and provide access to pipe for visual observation and documentation.

END OF SECTION

33 11 02 STEEL PIPE

PART 1 - G E N E R A L

1.01 SUMMARY

- A. This Section includes requirements for providing supervision, labor, material, tools, equipment, testing, training, and related items to install and place in operation steel pipe for water mains 6 inches and larger.
- B. Extent of steel piping is shown on Drawings and in Schedules.

1.02 RELATED WORK

- A. Section 01 22 00 – UNIT PRICES
- B. Section 01 33 00 – SUBMITTAL PROCEDURES
- C. Section 01 40 00 – QUALITY REQUIREMENTS
- D. Section 13 47 13 – CATHODIC PROTECTION
- E. Section 33 23 16 – EXCAVATION, BACKFILL, AND COMPACTION FOR UTILITIES

1.03 REFERENCES

- A. AASHTO HS-20 – Loading Design Specifications.
- B. AMPP – Associated for Materials Protection and Performance
- C. ANSI B16.1 – Gray Iron Pipe Flanges and Flanged Fittings: Classes 25, 125, and 250.
- D. ANSI/AISC 360 – Structural Steel Buildings.
- E. ANSI/ASME Boiler and Pressure Vessel Code, Sec. IX.
- F. ANSI/AWS B2.1 –Welding Procedure and Performance Qualification.
- G. ANSI/AWS D1.1 – Structural Welding Code – Steel.
- H. ANSI/AWS D1.3 – Structural Welding Code – Sheet Steel.
- I. ANSI/NSF 61 – Drinking Water System Components – Health Effects.
- J. ASTM A6 – General Requirements for Rolled Structural Steel Bars, Plates, Shapes, and Sheet Piling.
- K. ASTM A36 – Carbon Structural Steel.
- L. ASTM A139 – Electric-Fusion (Arc)-Welded Steel Pipe (NPS 4 and Over).
- M. ASTM A572 – High-Strength Low-Alloy Columbium Vanadium Structural Steel.
- N. ASTM A1018 – Steel, Sheet and Strip, Heavy-Thickness Coils, Hot-Rolled, Carbon, Commercial, Drawing, Structural, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength.
- O. ASTM C33 – Concrete Aggregates.
- P. ASTM C150 – Portland Cement.
- Q. ASTM C595 – Blended Hydraulic Cements.
- R. ASTM D1557 – Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2,700 kN-m/m³)).
- S. AWS D1.1 – Structural Welding Code – Steel.

- T. AWS QC1 – AWS Certification of Welding Inspectors.
- U. AWWA C115 – Flanged Ductile-Iron Pipe with Ductile-Iron or Gray-Iron Threaded Flanges.
- V. AWWA C200 – Steel Water Pipe, 6-Inches (150 mm) and Larger.
- W. AWWA C205 – Cement-Mortar Protective Lining and Coating for Steel Water Pipe 4 In. (100 mm) and Larger.
- X. AWWA C206 – Field Welding of Steel Water.
- Y. AWWA C207 – Steel Pipe Flanges for Waterworks Service, Sizes 4 In. Through 144 In. (100 mm Through 3,600 mm).
- Z. AWWA C208 – Dimensions for Fabricated Steel Water Pipe Fittings.
- AA. AWWA C209 – Cold-Applied Tape Coatings for Steel Water Pipe, Special Sections, Connections, and Fittings.
- BB. AWWA C210 – Liquid-Epoxy Coatings and Linings for Steel Water Pipe and Fittings.
- CC. AWWA C216 – Heat-Shrinkable Cross-Linked Polyolefin Coatings for Steel Water Pipe and Fittings.
- DD. AWWA C218 – Liquid Coatings for Aboveground Steel Water Pipe and Fittings.
- EE. AWWA C222 – Polyurethane Coatings and Linings for Steel Water Pipe and Fittings.
- FF. AWWA C602 – Cement-Mortar Lining of Water Pipelines in Place – 4 In. (100 mm) and Larger.
- GG. AWWA M11 – Steel Pipe: A Guide for Design and Installation.
- HH. SSPC-SP 1 – Surface Preparation Standard No. 1 – Solvent Cleaning.
- II. SSPC-SP 10 – Surface Preparation Standard No. 10 – Near-White Metal Blast Cleaning.
- JJ. SSPC-SP 11 – Surface Preparation Standard No. 11 – Power-Tool Cleaning to Bare Metal.
- KK. SSPC-VIS 1 – Guide and Reference Photographs for Steel Surfaces Prepared by Dry Abrasive Blast Cleaning.

1.04 QUALITY ASSURANCE

- A. All steel pipe and fittings shall be furnished by manufacturers who are fully experienced, SPFA or IOS 9000-2000 certified, reputable, and qualified in manufacture of products to be furnished.
- B. Quality Assurance Tests
 - 1. After joint configuration is complete, regardless of quality of steel selected for use, each length of pipe shall be shop-tested hydrostatically to a pressure which will induce hoop stress equal to at least 75 percent of yield stress of steel. Daily certified reports of hydrostatic tests shall be submitted to Owner's Representative on a weekly basis.
 - 2. All fittings, specials, and appurtenances shall be hydrostatically tested in accordance with requirements above. Above test could be substituted with nondestructive testing, if approved by Owner's Representative. Submit test reports to Owner's Representative.
 - 3. All quality control tests conducted by manufacturer for each production run of pipe shall be submitted to Owner's Representative on a weekly basis.
 - 4. Mill test reports of all steel plates, sheets, or coils used in fabrication of pipe, fittings, specials, and appurtenances shall be submitted to Owner's Representative.
- C. All rejected materials shall be plainly marked and shall be replaced by the Contractor to meet requirements of Specifications, without additional cost to Owner's Representative.

- D. Owner's Representative to provide a welding inspector whenever there is welding to be done. Welding inspector shall have prior pipe welding experience and shall be a certified welding inspector (CWI), in accordance with AWS QC1.
- E. Provide administrative documents showing that QA/QC personnel in both shop and field are certified as AMPP/NACE International Coating Inspector (Level III).

1.05 SUBMITTALS

- A. Conform to requirements of Section 01 33 00 – SUBMITTAL PROCEDURES.
- B. Design Calculations
 - 1. All design calculations shall be signed and sealed by a Professional Engineer licensed in the State of Illinois.
 - 2. Manufacturer's pipe design calculations shall be submitted with Contractor's Bid Documents.
- C. Pipe Manufacturer's Submittals
 - 1. Detailed drawings of pipes, specials, fittings, and joints with design calculations for internal pressure, vacuum, and external load conditions.
 - 2. Design calculations for non-restrained and restrained joints, and rubber gasket reports and gasket sizing calculations.
 - 3. Tabulate laying schedules corresponding to serial numbers and/or identification numbers to be painted on pipes, specials, and fittings.
 - 4. Quality assurance test procedures and test reports for pipes, specials, and fittings (as specified under Subsection 1.04B).
 - 5. Quality control test reports for each production run of pipe, including production welds, welding operator tests, and mill test reports of all steel plates, sheets, and other materials used.
 - 6. Manufacturer's installation guide.
 - 7. Certificates of compliance with Contract Specifications; for example, Certificate of Design. Certificates shall include:
 - a. Pipes, specials, and fittings, in accordance with AWWA C200 and AWWA C208.
 - b. Cement-mortar protective interior lining, in accordance with AWWA C205 or AWWA C602.
 - c. Polyurethane coating for exterior, in accordance with AWWA C222.
 - d. Paint system for exterior, in accordance with AWWA C210 or C218.
 - e. Manufacturer's standard repair procedures.
 - f. Manufacturer's written quality control procedures.
 - g. Manufacturer's written statement that pipe will meet an $\epsilon = 0.005$ ft. (ϵ is defined as specific surface roughness).
 - 8. Certificates of Compliance certifying:
 - a. Compliance with NSF/ANSI 61 Standards and certified to be lead-free.
 - b. Compliance with American Iron and Steel (AIS).
 - 9. No pipe, special section, or fitting shall be manufactured until Drawings and design calculations have been reviewed, with no exception noted or stamped "Exceptions as Noted – Resubmit for Record Purpose Only."

D. Field Welding Report

1. Welding Reports for each field-welded joint shall be submitted and signed to Owner's Representative daily by welding inspector. Welding Report shall include:
 - a. Weld joint station number.
 - b. Date of weld.
 - c. Welder's name and signature.
 - d. Actual weld size at four quadrants of pipe and total number of weld passes.

1.06 MEASUREMENT AND PAYMENT

- A. Refer to Section 01 22 00 – UNIT PRICES.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Deliver Products to Site to store and protect.
- B. Pipe fittings shall be handled by padded slings or manufacturer's approved devices, which will not damage pipe exterior coating or mortar lining.
- C. Rolling or sliding of pipe shall be prohibited under all circumstances, regardless of provisions made to protect pipe. Any pipe dropped shall be returned to manufacturer plant.
- D. Pipe shall be studded for shipping as required by manufacturer's recommendations to maintain pipe roundness of ± 1 percent and provide temporary plastic end caps on all pipe and fittings.
- E. Provide padded bolsters on trucks or rail cars to spread load and provide uniform support.
- F. All pipe and fittings damaged in shipment or by handling at Job Site prior to placement shall be returned to fabrication plant for approved repairs.
- G. Pipe shall be strung along route of pipeline to satisfaction of Owner's Representative and shall be protected by pipelaying Contractor with proper lights, barricades, etc.
- H. Pipe shall be stored on padded skids, sand dirt berms, sandbags, old tires, or other suitable means so that coating will not be damaged.

1.08 WELDING MATERIALS AND PROCEDURES

- A. Conform to AWS D1.1, D1.3; ANSI/ASME Boiler and Pressure Vessel Code, Sec. IX; AWWA C206; and applicable State Labor Regulations. Welding procedures shall be required for (but not limited to) longitudinal and girth or spiral welds for pipe cylinders, spigot-and-bell ring attachment, reinforcing plates, outlet reinforcement, ring flange welds, and plates for lug connections.
- B. Contractor or manufacturer shall certify that all welders have been tested and maintain current qualification in accordance with ANSI/ASME Boiler and Pressure Vessel Code Sec. IX or ANSI/AWS B2.1.

PART 2 - PRODUCTS

2.01 GENERAL

- A. Pipe manufacturer shall demonstrate current production capability for volume of work required for this Project and shall have had successful fabrication to AWWA C200 Standards of at least 50,000 linear feet of 48-inch diameter or larger pipe within past 5 years.

2.02 STEEL PIPE DESIGN

- A. All steel pipe, specials, and fittings shall be designed as herein specified and shall be manufactured in accordance with minimum wall thickness, as shown in Subsections 2.02E and 2.02F of this Specification, all in accordance with AWWA C200 and AWWA M11.

- B. Unless otherwise shown on Drawings, all specials and fittings shall conform to dimensions of AWWA C208. Fittings shall be of same material and minimum thickness as pipe.

1. Minimum radius of elbows shall be 2.5 times the pipe diameter, and maximum miter angle on each section of elbow shall not exceed 11 1/4 degrees.
2. If elbow radius is less than 2.5 times the pipe diameter, stresses shall be checked per AWWA M11 and wall thickness shall be increased as required.
3. Fittings shall be equal in pressure design strength and shall have same lining and coating as abutting pipe.
4. Specials and fittings, unless otherwise shown on Drawings, shall be made of segmentally welded sections from hydrostatically-tested pipe with end compatible and type of joint or coupling specified for pipe.

- C. Design Pressure

1. Internal Pressure

	Class 150
Working Pressure (psi)	150
Surge Pressure (psi)	100
Total Transient Pressure (psi)	250
Field Test Pressure (psi)	150

2. Vacuum: Collapse vacuum pressure of -14.7 psi. Design with trench soil compacted to 95 percent of maximum density, per ASTM D1557, and a minimum factor of safety 2.0, based on actual external loading [10-foot minimum] plus vacuum of -14.7 psi. Proper credit may be given to cement-mortar lining.
3. External Loading: Minimum 10-foot depth of cover or as indicated on Drawings at 120 pounds per cubic foot soil weight with one AASHTO HS-20 truck. If indicated on Drawings, external load (rail load) shall be Cooper E-80. Water table shall be at ground surface.
4. Deflection: Maximum deflection shall be 2 percent of pipe diameter.

5. Where Drawings show depth of cover exceeds 10 feet or for special applications, pipes, specials, and fittings shall be designed for loading condition of not less than indicated on Drawings. Pipes to be installed inside of tunnel casing shall be designed for full cover, including live load (HS-20 or railroad E-80, neglecting casing).

D. Design Stress and Materials

1. Steel plate for all fabricated pipe, specials, and fittings shall, unless otherwise specified in Specification, conform to latest edition of one of the following: ASTM A1018, Gr 36 minimum; ASTM A572, Grade 42; ASTM A36; ASTM A139, Grade C. Maximum tensile stress under design internal working pressure shall not exceed 50 percent of minimum specified yield strength of material. Combined design internal working pressure of 150 psi plus water hammer of 100 psi shall not exceed 75 percent of minimum specified yield strength of material for all unburied and buried pipe, specials, and fittings.

E. Diameter or Size of Pipe

1. Unless otherwise specifically stated in Drawings, Specifications, or both, nominal diameter shall mean inside diameter (I.D.) of pipe after lining, except for pipe 12 inches and smaller. Pipe manufacturer shall provide dimensions of outside diameter of each pipe supplied.

F. Minimum Wall Thickness

1. All pipe, specials, and fittings shall be designed in accordance with specified design pressure, design stress, and materials and shall have the following minimum wall thickness, in accordance with ASTM A6. No pipe shall have walls less than minimum due to tolerances.

Water Main Pipe		
	Minimum Wall Thickness¹	
Nominal Pipe Diameter (Inch)	Unburied² (Inch)	Buried (Inch)
60	0.468	0.297
54	0.422	0.250
48	0.376	0.250
42	0.330	0.250
36	0.284	0.250
30	0.250	0.250

Note 1: Wall thickness shall be designed based on specified internal pressure, collapse vacuum pressure, and external loads, and shall not be less than minimum thickness shown above.

Note 2: Including all pipe installed inside of tunnel casing pipe and vaults.

Note 3: Wall thickness may be calculated using AWWA M11. For calculating earth load, use Equation 5-3.

Note 4: For pipe wall thickness greater than 1/2 inch in buried pipe and inside tunnel casing, Charpy V-notch impact test shall be at 25 pound-foot average at 30°F.

G. Design and Manufacture

1. Steel pipe, specials, and fittings shall be designed and manufactured in accordance with specified design pressure, materials, and stresses.
2. Steel pipe crossing a major waterway such as a large stream, river, or channel shall be designed for negative buoyancy by concrete encasement, or other approved means, and no allowance for earth cover in buoyancy calculation.
3. AWWA C200 and AWWA C208 shall apply, except as specified under these Specifications, with the following modifications or stipulations. The following Sections have same numeral designation as AWWA C200:
 - a. Sec. 4.3 – Submit design detail drawings of pipe, specials, fittings, and joints to Owner's Representative for review.
 - b. Sec. 4.4 – Submit design calculations of pipe, specials, fittings, and joints to Owner's Representative for review.
 - c. Sec. 4.12 – Protective Lining and Coating of Pipe, Specials, and Fittings
 - 1) Lining: Interior of all pipes, specials, and fittings shall have cement-mortar lining.
 - a) Cement-Mortar Lining: All pipe shall be cement-mortar lined in shop with centrifugally spun lining, in accordance with AWWA C205. All specials and fittings shall be cement-mortar lined in shop, in accordance with AWWA C205. Field joints shall be made in accordance with AWWA C205, Sec. 4.7.
 - b) No pozzolanic material shall be used to replace cement. Interior of all outlets and connections smaller than 12 inches shall be painted with liquid epoxy, in accordance with AWWA C210.
 - c) Fine aggregate for lining shall comply with requirements of ASTM C33 and shall not contain coal or lignite.
 - 2) Coating
 - a) All material, procedures, etc. shall conform to applicable AWWA Standards and coating manufacturer's recommendations. Overlap factory-applied coating system with pipe manufacturer's specified heat-shrink sleeve system by minimum 6 inches.
 - b) Buried Pipe, Specials, and Fittings:
 - i. All buried specials and fittings shall be coated with polyurethane, in accordance with AWWA C222. Total thickness of 35 mils and materials used for coating shall be compatible with coating applied to pipe.
 - ii. Finish Coat color shall be approved by Owner's Representative.
 - c) Unburied Pipe, Specials, and Fittings:
 - i. All unburied pipe (i.e. exposed, in vaults), specials, and fittings, which will be exposed after installation, shall receive one coat of rust-inhibitive primer, in accordance with AWWA C218.
 - ii. Pipe shall be coated with epoxy coating system, in accordance with AWWA C210.
 - iii. Total thickness of coating shall not exceed manufacturer's recommended maximum dry film thickness.

- iv. Finish Coat color shall match adjacent buried piping, or as approved by Owner's Representative.
- d) Provide shop-applied primer on coating holdback areas at joint in accordance with type of joint utilized.
- e) Pipe ends, fittings, and specials, which require field heat-shrink sleeves, shall have their pipeline station number painted near joint at 2:00 or 10:00 position. Size of lettering for stationing shall be readable when a photograph is taken of completed joint.
- f) Heat-Shrink Joint Sleeves for Polyurethane Coating
 - i. Provide heat-shrink (cross-linked polyolefin wrap or sleeve with a mastic sealant) suitable for pipeline operating temperature, in accordance with AWWA C216. Provide Canusa-CPS's "Aqua-Shield," Seal For Life's "Covalence," or approved equal. Where weld-after-backfill procedures are used, conform to manufacturer's recommendations for installation.
- g) Field-Applied Heat-Shrink Sleeves: Contractor shall select between two options for method of application of joint heat-shrink sleeves:
 - i. Welding Before Sleeve: First option is to weld joint, then apply exterior joint sleeve. Wrap joints with heat-shrink sleeve system conforming to AWWA C216. Overlap factory-applied coating system with a sleeve minimum of 6 inches.
 - ii. Sleeve Before Welding: Second option is to apply heat-shrink sleeve for post-welding, backfill trench, and then weld joint from pipe interior. Wrap joints with heat-shrink sleeve as recommended by pipe manufacturer.
 - iii. For either option, Contractor shall be responsible for its operations so that no damage is done to mortar lining or coating system (factory-applied or joint-shrink sleeve).
 - iv. If second option is chosen, Contractor shall provide to Owner's Representative documentation necessary to prove validity of method and demonstrate that operation will not damage polyurethane coating system or the field-applied shrink-sleeve.
 - v. Contractor will be required to fully uncover a total of ten joints, selected at random by Owner's Representative (five at beginning of construction period and five spread throughout period) to visually inspect joints after welding from pipe interior. Inspection of welds' interior and exterior is to check integrity of welding and heat-shrink sleeve.
 - vi. If Contractor's welding procedure causes damage to heat-shrink sleeve, Contractor shall uncover all joints installed prior to test (or between this test and a prior test) to inspect joints and repair as required. Contractor, at option of Owner's Representative, may be allowed to modify welding procedure or be required to perform welding before applying heat-shrink sleeve to joint.
 - vii. If Contractor is required to change welding procedure before heat-shrink sleeve application, no additional compensation will be made to Contractor by Owner's Representative.

- d. Sec. 4.5 – All steel plate, sheet, or coils for fabricated pipe, specials, and fittings shall conform to latest edition of ASTM A1018, Grade 36 minimum; ASTM A572, Grade 42; ASTM A36; or ASTM A139, Grade C, unless otherwise specified in this Specification.
- e. Sec. 4.11 – Preparation of Pipe Ends
 - 1) Buried pipe, specials, fittings, and tied joints, except as shown or noted, shall have single fillet lap-welded slip joint welded inside or outside, as approved by Owner's Representative. Provide a nominal lap of 2 1/4 inches.
 - 2) For pipe 60-inch diameter and under, bell-and-spigot "O-ring" joints may be used. Bell-and-spigot ends shall be formed integrally with steel cylinder or may be fabricated from separate plates, sheets, or special sections for attachment to pipe ends. All welds on inside of bell and outside of spigot shall be continuous and ground even with plate surface for a distance not less than insertion depth.
 - 3) For pipe installed inside casing, joints shall be lap-welded slip joint and welded inside and outside. Outside welding shall be single pass weld adequate for joint testing. Provide tapped hole at each joint for field air testing of lap welds. In addition to hydrostatic test, double-welded lap joint shall be tested by applying 40 psi air pressure into connection between two fillet welds, as outlined in AWWA C206, Sec. 5.2.2.2.
 - 4) For pipes 60-inch diameter and under, bell-and-spigot ends may be sized by forcing over a sizing die or expanding to stretch steel beyond elastic limit. Difference in diameter between outside of spigot and inside of bell at normal engagement shall not exceed 0.04 inch – measured on circumference with a diameter tape.
 - 5) Spigot ring shall have a groove to receive, hold, and protect gasket; and joint surfaces shall be of such shape and dimensions that joints will be self-centering when pipe is laid so that gasket will not be required to support weight of adjacent pipe. "O-ring" gasket shall have sufficient volume (approximately 100 percent) to fill area of groove, and shall conform to AWWA C200, Sec. 4.11.3.3. "O-ring" shall have minimum stretch of approximately 20 percent and compression of no less than 30 percent after pipe installation. Selection of "O-ring" shall meet above three criteria. Submit gasket design calculations for Owner's Representative's review. Deviation from above criteria may be permitted based on satisfactory field performance data provided by pipe manufacturer. Joint shall be suitable for total design pressure equal to Class of pipe furnished and shall operate satisfactorily with deflection.
 - 6) Shop-applied outside coating shall be continuous to end of pipe on bell end and shall be cut back on spigot end so coating extends at least 1/2 inch inside bell end at normal engagement. Shop-applied inside lining shall be continuous to end of pipe on spigot end and shall be cut back on bell end to point of maximum engagement or further, as shown on Plans. Inside of bell and outside of spigot shall be painted one shop coat of primer to prevent rust.
 - 7) Pipe manufacturer shall demonstrate current production capability for volume of work required for Project and shall have had successful fabrication to AWWA C200 Standards of at least 50,000 linear feet of 48-inch diameter or larger pipe within past five years.
 - 8) Changes in alignment or grade may be made by breaking joints of straight pipe or by use of beveled-end pipe, unless single-bend fittings are called for on Drawings. Joint openings shall not exceed one-half of maximum joint opening recommended by pipe manufacturer.

- 9) Unburied pipe, specials, and fittings, except as shown or noted, shall have single or double butt-weld joints.
- f. Sec. 4.15 – Specials and fittings shall be provided in accordance with details shown on Drawings, as specified or required.
 - g. Sec. 5.1 – Owner's Representative retains right to observe pipe, fittings, all work performed, and all materials furnished under Contract at manufacturer's plant. During inspection, Owner's Representative shall have free access to those parts of manufacturer's plant that are necessary to ensure compliance with this Standard. Manufacturer shall make gauges necessary for inspection available for Owner's Representative's use. Manufacturer shall provide Owner's Representative with assistance handling pipe and fittings as necessary. Prior to shipment, each piece of pipe and fitting may be inspected and stamped by Owner's Representative for compliance with Specifications.
 - 1) Manufacturer shall provide Owner's Representative with copies of all written quality control procedures, tests, and reports, as required by Specifications, and as may be employed by manufacturer during production of pipe. Weekly inspection reports shall be submitted to Owner's Representative.
 - h. Sec. 5.2 – Each length of pipe and fitting shall be hydrostatically-tested in accordance with Subsection 1.05. Submit test procedures to Owner's Representative for review.
 - i. Sec. 5.2.2 – Testing of special sections shall be either hydrostatically-tested or nondestructively tested, in accordance with Subsection 1.05. Submit test procedures to Owner's Representative for review.
 - j. Sec. 6.1 – Provide Owner's Representative with laying schedules showing where each numbered pipe or special section belongs in pipeline.
 - 1) Designations on schedule shall correspond with those painted on pipe and special sections.
 - 2) Pipe, fittings, and specials shall be marked as to serial number, date of manufacture, type with head classification, and/or depth of bury for insertion into pipeline at designated points, in conformance and corresponding with approved laying schedule.
 - 3) Fittings and specials shall be marked with pipeline stationing.
 - m. Sec.6.3 – Furnish Owner's Representative with an affidavit certifying that pipe, specials, fittings, and other Products or materials furnished comply with all applicable provisions of these Standards
 - n. Installation Requirements: In addition to pipe manufacturer's installation guide, the following requirements shall be met:
 - 4) Pipe manufacturer may provide Contractor with suitable lifting devices to be used during pipe unloading operations to move pipe, to place pipe in trench, or during any other pipe handling operations. Prior approval of pipe manufacturer and Owner's Representative shall be required for lifting devices not furnished by manufacturer.
 - 5) Pipe shall be unloaded, handled, and placed using padded slings or other lifting devices furnished by pipe manufacturer to prevent damage to interior and exterior coating.
 - 6) Unloading or movement of pipe by rolling or sliding is strictly prohibited at any time.
 - 7) An acceptable device shall be used to distribute rubber gaskets uniformly on all joints.

- 8) Joint pull in-field to correct alignment shall be limited to one-half of maximum amount recommended by pipe manufacturer.

H. Flanged Joints

1. Flanges for steel pipe, specials, and fittings shall be in accordance with AWWA C207, Class D (for pressure, Class 150) and drilled compatible with concrete pipe and ductile iron pipe with ANSI B16.1 (Class 125 Cast Iron) drilling. For pipe connected to valves, drilling shall be ANSI B16.1, Class 125 or Class 250, or as required.
2. All flanged joints shall be made with single-piece, red rubber gaskets 1/8-inch or 1/16-inch thick, as recommended by pipe manufacturer. Gaskets shall be full-face or ring-type, as recommended by pipe manufacturer, meeting AWWA C115, Appendix A, or AWWA C207 requirements. All bolts for buried flange joints shall be COR-TEN type corrosion-resistant steel (CRS).

I. Welded Joints for Steel Pipe

1. Factory-Welded Joints

- a. All welds shall be sound and free from embedded scale or slag, shall have tensile strength across weld not less than that of the thinner of the connected sections, and shall be watertight. Butt welds shall be used for all welded joints in fabrication of bends and other specials. Fillet welds shall be used for flange attachment, in accordance with AWWA C207.
- b. A yield point determination of a welded joint shall be made by an independent or manufacturer's certified testing laboratory at beginning of Work. All costs for laboratory testing shall be paid for by Contractor. Submit test report to Owner's Representative.

2. Field-Welded Joints

- a. Field-welded joints shall conform to AWWA C206.
 - b. Qualifications of Procedures and Welders
 - 1) All welders and welding procedures used to install pipe shall be qualified under provisions of ANSI/AWS B2.1 or ANSI/ASME Boiler and Pressure Vessel Code, Sec. IX.
 - c. If requested by Owner's Representative, Contractor shall furnish a weld test specimen from each welder used on Project for inspection by an independent testing laboratory. If independent testing laboratory determines weld does not meet Specification, welder shall not perform any welding on Project and all welder's welds may be inspected for compliance with Specification at no cost to Owner.
 - d. Where exterior welds are performed, adequate space shall be provided for welding and inspection of joints.
 - e. All welded pipe joints shall have a minimum of two passes. First pass for sealing joint shall be continuous seal weld around joint.
3. Unless double fillet welds are specified or shown on Plans, field-welded lap joints and butt straps shall be fillet-welded from inside or outside of pipe when pipe is larger than 30 inches, and from outside of pipe for pipe 30 inches and smaller.
 - a. Fillet weld for pipe wall 1/4 inch and thinner shall be thickness of thinner part. For pipe wall thicker than 1/4 inch, weld shall be designed for thrust force at weld joint and meeting AWS D1.1 minimum weld size requirement, but shall not be less than 1/4 inch.

- b. Butt straps, where used or required, shall be minimum of 12 inches wide (same thickness as pipe wall) and shall provide for minimum of 2 inches lap at each pipe joint.
- 4. All welds shall be visually inspected and shall be acceptable for the following criteria:
 - a. Weld shall have no cracks.
 - b. Thorough fusion shall exist between adjoining layers of weld metal.
 - c. All craters shall be filled to cross-section of weld.
 - d. Weld profiles shall be in conformance with AWS D1.1, Sec. 5.24.
 - e. A fillet weld in single continuous weld is permitted to underrun nominal fillet size specified by 1/16 inch, provided that undersize portion of weld does not exceed 10 percent of length of weld.
 - f. Undercut shall be no more than 0.01 inch deep.
 - g. Frequency of piping porosity in weld shall not exceed 1 in each 4 inches of weld length, and maximum diameter shall not exceed 3/32 inch.

J. Restrained joints

- 1. Unbalanced forces at pipe bends, tees, valves, etc., shall be restrained by transmitting those forces to pipe wall by means of harnessed, flanged, or welded joints. Restrained joint materials shall be non-corrosive.
- 2. Each of restrained joint pipe sections and steel joints shall be designed to withstand and transmit whole angle component of longitudinal thrust of force caused by deflection angle (Δ) from pipe total transient pressure, in accordance with AWWA M11. Required length for restrained pipe on each side of bends and bevel pipes or tees shall be calculated in accordance with AWWA M11, and shall meet or exceed lengths shown on Drawings. Reduction of design longitudinal thrust force along pipeline from maximum thrust point will be permitted. Maximum longitudinal cylinder tensile stress shall have minimum factor of safety of 1.67, based on minimum steel plate yield strength. Circumferential welded joint maximum stresses shall not exceed allowable stress of weld shown in ANSI/AISC 360, Table J2.5.
- 3. Submit design calculations of restrained joint pipes and fittings to Owner's Representative. In designing restrained joints, combined effect of both longitudinal thrust force and radial hoop tensile force, caused by design internal pressure plus surge pressure, shall be considered. Restrained joint system shall have a minimum safety factor of 1.67. Design calculations shall be submitted for Owner's Representative's review.

K. Furnished With Pipe

- 1. In addition to straight lengths of pipe, the following (within Contract Unit Prices for installed pipe) shall be furnished: all bends, tees, reducers, access manholes with butt strap joints or butt joints, special fittings, and wall pieces for manholes, adapters, beveled pipe, sleeves, caps, plugs, blind flanges, butt straps, bolts, studs, nuts, etc., required for complete pipeline construction, not only as shown on Drawings but also as required by field conditions during construction. Fittings, elbows, tees, access manholes, blow-off connections, and air valve connections may be fabricated into full pipe lengths where possible.
- 2. Furnish all rubber gaskets and all special materials required for making of joints, and all special materials required to be incorporated in certain pieces of pipe or fittings, restrained joints, etc., as shown or noted on Drawings.
- 3. Pipe supplier shall furnish, within Contract Unit Prices for installed pipe, all required butt straps and adapters; which, though not specifically called for on Drawings, may still be required by field conditions during construction at no additional cost to Owner's Representative.

L. Wall Pipes

1. Wall pipes shall be steel pipe where both connecting pipes are steel pipe. Minimum wall thickness shall be as specified under in Subsections 2.01E and 2.01F of this Specification and in no case shall be thinner than the connecting pipes. They shall extend beyond wall, as shown on Plans. Wall pipes shall have intermediate wall collars and flanged end at inside and outside of structure, or as shown on Plans. Protective coating and lining of these pipes shall be in accordance with Sec. 4.5.1.

M. All unburied steel pipe, specials, and fittings shall be designed for the following minimum combined conditions:

1. Internal Pressure

	Class 150
Working Pressure (psi)	150
Surge Pressure (psi)	100
Total Transient Pressure (psi)	250

2. Vacuum: Collapse vacuum pressure of -14.7 psi with a minimum factor of safety of 1.5 as shown in AWWA M11.

PART 3 - EXECUTION

3.01 PIPING INSTALLATION

A. Comply with following:

1. Make available services of manufacturer's representative when deemed necessary by Owner's Representative. Representative to advise in aspects of installation, including but not limited to handling and storing, cleaning and inspecting, coating and lining repair, and general construction methods as applicable to pipe.
2. Handling and Storage: Install struts or stulls prior to shipping, horizontally and vertically, as proposed by manufacturer and approved by Owner's Representative.
3. Stulls: Installed in joint ends of fittings. Stulls to remain in place, horizontally and vertically, positioned under following conditions:
 - a. During storage and shipping.
 - b. Until welding is complete.
4. Install stulls prior to placement of pipe, bends, and fittings to prevent deflection during installation. Provide stulls consisting of timber struts with end blocks shaped to fit curvature of interior surface of pipe, or other appropriate configuration and material. Firmly edge and secure stulls to blocks so that they will remain intact position during handling and installation. Provide stulls adequate to resist handling loads encountered without structural failure to stull members or damage to pipe.
5. Repair, reject, and remove from Site pipe that arrives with defects in lining, including sand pockets, voids, and oversanded areas. Repairs must be made to satisfaction of Owner's Representative to be accepted.
6. Store pipe at Job Site with securely fastened plastic endcaps to maintain moist pipe interior. Promptly replace damaged endcaps to avoid shrinkage or cracking of cement-mortar lining.

7. Immediately replace damaged plastic end caps. Do not leave uncapped for more than 4 hours. If left uncapped for more than 4 hours add four gallons of potable water per 40 feet of pipe before replacing plastic cap.
 8. Bedding and Backfilling
 - a. Conform to requirements of Section 33 23 16 – EXCAVATION, BACKFILL, AND COMPACTION FOR UTILITIES.
 - b. Align pipe at proper grade prior to joint connection and do not shift after jointing operation has been completed.
 - c. Take necessary precautions during bedding and backfilling operations to prevent deformation or deflection of pipe's cylindrical shape by more than allowable pipe deflection. Do not move trench support system (trench safety system) once bedding material is compacted.
 - d. Excavate outside specified trench section for bell holes and for spaces sufficient to permit removal of slings. Provide bell holes at proper locations for unrestricted access to joint. Form bell holes large enough to facilitate joint wrapping and to permit visual examination of process. Enlarge bell holes as required or directed by Owner's Representative. Subsequent backfilling thereof will not be considered as authorized additional excavation and backfill. Backfill bell holes and spaces to satisfaction of Owner's Representative.
 - e. Blocking may be removed 24 hours after placing backfill to top of pavement or natural ground level.
 9. Pipe Deflection: After backfill is complete, test pipe for excessive deflection by measuring actual inside vertical diameter. For maximum deflection allowable, see Subsection 2.02C.4.
 - a. Deflection may be measured by Owner's Representative at any location along pipe. Arithmetical averages of deflection are not acceptable.
 - b. If deflection exceeds that specified, Contractor shall do one of the following:
 - 1) Remove backfill and side support. Reround pipe and properly replace compacted backfill and side support. Review cement-mortar lining to assure that no harmful damage has occurred.
 - 2) Remove entire portion of deflected pipe section and install new pipe as directed by Owner's Representative at no additional cost to Owner.
 - c. Move pipe in such manner not to damage pipe or coating. Do not roll pipe nor drag on ground. Use a minimum of two wide non-abrasive slings or belts to lift and lower pipe. Handle pipe using a spreader bar. Provide adequate spacing of pipe supports to prevent cracking or damage to lining or coating. Inspect and repair coating abrasions before pipe is lowered into trench.
 10. Use of dogs, clips, lugs, or equivalent devices welded to steel pipe to force it into position will not be permitted unless approved by Owner's Representative. Remove foreign matter and protective material from surfaces that are to be in contact at joints. Leave surfaces of joint areas thoroughly clean for metal-to-metal contact of field joints.
- B. Static Electricity
1. Properly ground steel pipeline during construction as necessary to prevent build-up of static electricity.
 2. Electrically test where required after installation of pipeline is complete.
- C. Any time that laying of additional pipe is stopped for more than 8 hours, plug ends of installed pipe and take proper precautions against flotation of pipe segments.

3.02 EXTERNAL COATING SYSTEM FOR BURIED STEEL PIPE

A. Polyurethane Coating System

1. Conform to requirements of AWWA C222.

B. Epoxy Coating System

1. Conform to requirements of AWWA C210.

C. Heat-Shrink Joint Sleeves

1. Provide field-applied shrink-wrap coating system for coating field joints, tie-ins, and other field-welded joints. Apply heat-shrink sleeves prior to internal welding of pipe using approved procedure compatible with coating system. Install heat-shrink joint sleeves in accordance with manufacturer's recommendations. Provide services of manufacturer's technical representative available on Site at beginning of pipe laying operations. Representative to advise Contractor and Owner's Representative regarding installation, repairs, and general construction methods.
2. Do not expose heat-shrink joint sleeves to harmful ultraviolet light for longer than recommended by coating manufacturer.

3.03 JOINTS AND JOINTING

A. Rubber Gasketed Bell-and-Spigot Joints

1. Use "O-ring" gasket with sufficient volume to approximately fill area of groove and gasket material, in accordance with AWWA C200. Check each splice in gasket by stretching gasket to at least twice original length of gasket. Visually check stretched splice by rotating 360 degrees. Reject splices showing visible separation or cracks.
2. Equalize rubber gasket cross-section after rubber gasket is placed in spigot groove of pipe by inserting tool or bar, such as large screwdriver, under rubber gasket and moving it around periphery of pipe spigot. Lubricate gaskets with nontoxic water-soluble lubricant before pipe units are joined. Fit pipes together in manner to avoid twisting or otherwise displacing or damaging rubber gasket.
3. Check gaskets after pipe sections are joined with feeler gauge to ensure that no displacement of gasket has occurred at point around circumference after joining. If displacement has occurred, remove pipe section and remake joint as if for new pipe. Remove old gasket and replace before remaking joint.
4. Bond "O-ring" joints as on Drawings.

B. Welded Joints

1. For welded lap joints, conform to requirements of Subsection 2.02.I
2. Butt joints to be complete penetration for entire circumference.

C. Do not allow steel plugs for threaded outlets to project beyond inner surface of pipe shell and seal weld by at least two passes. Apply weld around outside of plug after it has been inserted in final position. Coat outlets and plugs inside and outside as required at field joints on pipe.

3.04 COATINGS AND LININGS INSPECTION RESPONSIBILITIES

- A. Contractor is responsible for quality control of coatings and linings applications and testing and inspection, as stipulated in this Section. Owner's Representative is responsible for quality assurance and reserves right to inspect or acquire services of independent third-party inspector who is fully knowledgeable and qualified to inspect surface preparation and application of high-performance coatings at phases of coatings and linings, field- or shop-applied. Contractor is responsible for proper application and performance of coatings and linings, whether or not Owner's Representative provides such inspection.
- B. Cement-Mortar Lining and Joint Finish: Finished surface of lining and joint to be comparable to surface rubbed with No. 16 Carborundum stone. Rub joint mortar sufficiently to bring paste to surface to remove depressions and projections, and to produce smooth, dense surface. Add cement to form surface paste as necessary. Leave interior with clean, neat, and uniform-appearing finish.

3.05 FIELD REPAIR PROCEDURE OF COATINGS FOR POLYURETHANE

- A. Remove oil or grease by solvent wiping pipe and adjacent coating in accordance with SSPC-SP1, Solvent Cleaning.
- B. Clean pipe surface in accordance with SSPC-SP11, Power-Tool Cleaning to Bare Metal or abrasively blast in the field in accordance with SSPC-SP10, Near-White Metal Blast Cleaning. Clean the full circumference of the pipe and feather the edges of the existing polyurethane coating a minimum of 2 inches.
- C. Apply repair material as described above in accordance with manufacturer's recommendations.
- D. Use heat applied patches or single use polyurethane coating repair product.
- E. If a heat-applied repair patch is used, do not overlap patches or use more than one patch for a single repair. If repair area exceeds the size of a single patch, use alternate repair method as listed above.

3.06 FIELD REPAIR PROCEDURES AND SPECIAL FITTINGS APPLICATION FOR CEMENT-MORTAR LINING

- A. Areas Less Than or Equal to 6 Inches in Diameter: Patch honeycomb and minor defects in concrete surfaces with non-shrink grout. Repair defects by cutting out unsatisfactory material and replacing with nonshrink grout, securely bonded to existing concrete. Finish to make junctures between patches and existing concrete as inconspicuous as possible. After each patch has stiffened sufficiently to allow for greatest portion of shrinkage, strike off grout flush with surrounding surface.
- B. Areas Greater Than 6 Inches in Diameter
 1. Remove defective lining down to bare steel by chipping, making sure care is taken to prevent further lining damage. Ends of lining where defective lining is removed are to be left square and uniform, not feathered.
 2. Clean bare steel with wire brush to remove loose or other foreign matter.
 3. Remove existing wire reinforcement and replace. Overlap new reinforcement to existing reinforcement by 1/2 inch. Secure reinforcement against wall of pipe at frequent intervals by tack welding to pipe.
 4. Prepare cement-mortar mixture. Mixture to be composed of cement, sand, and water per AWWA C205. Proportions of sand to cement not to exceed three-parts sand to one-part cement, by weight. Use only enough water to obtain proper placement characteristics. Set-up time before mixture is to be discarded is to be no longer than 30 minutes. Non-shrink grout may also be used. Do not use combination of cement-mortar and non-shrink grout within same repair.

5. Apply Larsen Products' Weld-Crete, or approved equal, concrete bonding agent to bare steel and interface of existing lining. After bonding agent is applied to steel and lining, new mix must be applied within 10 minutes.
6. Apply cement-mortar to repair area 1/2-inch thick, then hand trowel to achieve smooth dense finish, making sure wire is not left exposed. To ensure proper thickness while placing new mortar, check thickness with 1/2-inch long wire gauge.
7. Curing: Place plastic sheeting over repair area; use tape to adhere plastic to area surrounding repair area. Let cure for 4 days, then remove plastic sheeting.

3.07 SURVEYING

- A. Use adequate surveying methods and procedures and employ competent personnel to ensure pipe sections are laid to line and grade and within stipulated tolerances. Measure and record, in form approved by Owner's Representative, in-place survey data for pipe laid each day and submit data to Owner's Representative in accordance with Section 01 30 01 – DIGITAL UTILITY DATA COLLECTION and Section 01 31 00 – PROJECT MANAGEMENT AND COORDINATION.

3.08 PHOTOGRAPH AND VIDEO REPORTING OF PIPE JOINTS

- A. Each completed pipe joint shall be photographed by Owner's Representative. Contractor shall notify Owner's Representative when joints are complete, prior to backfilling pipe. Contractor shall mark date that joint was completed and initials of foreman next to factory painted pipeline station number. Lettering size shall be same as used for pipe stationing number.
- B. Owner's Representative will provide internal pipe joint video report for the pipeline. Video report shall show full circumference of each joint with pipe mark number and station number labeled or identified by voice. Date and time shall be recorded on video.
- C. Contractor shall coordinate with Owner's Representative upon completion of pipe joints and provide access to pipe for visual observation and documentation.

END OF SECTION

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33 11 03 DUCTILE IRON PIPE

PART 1 - G E N E R A L

1.01 SUMMARY

- A. This Section includes requirements for providing supervision, labor, material, tools equipment, testing, training, and related items to install and place in operation ductile iron pipe for water mains.
- B. Extent of ductile iron piping is shown on Drawings and shall include all buried or exposed yard piping and interior process piping.

1.02 RELATED WORK

- A. Section 01 22 00 – UNIT PRICES
- B. Section 01 33 00 – SUBMITTAL PROCEDURES
- C. Section 01 40 00 – QUALITY REQUIREMENTS
- D. Section 13 47 13 – CATHODIC PROTECTION
- E. Section 31 23 16 – EXCAVATION, BACKFILL, AND COMPACTION FOR UTILITIES

1.03 REFERENCES

- A. AASHTO HS-20 – Loading Design Specifications.
- B. ANSI B16.1 – Gray Iron Pipe Flanges and Flanged Fittings: Classes 25, 125, and 250.
- C. ANSI/NSF 61 – Drinking Water System Components – Health Effects.
- D. AWWA C104/A21.4-22 – Cement-Mortar Lining for Ductile Iron Pipe and Fittings.
- E. AWWA C105/A21.5-18 – Polyethylene Encasement for Ductile-Iron Pipe Systems.
- F. AWWA C110 – Ductile-Iron and Gray-Iron Fittings.
- G. AWWA C111/A21.11-23 – Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings.
- H. AWWA C115 – Flanged Ductile-Iron Pipe with Ductile-Iron or Gray-Iron Threaded Flanges.
- I. AWWA C116/A21.16 – Protective Fusion-Bonded Coatings for the Interior and Exterior Surfaces of Ductile-Iron and Gray-Iron Fittings.
- J. AWWA C150/A21.50-21 – Thickness Design of Ductile-Iron Pipe.
- K. AWWA C151/A21.51 – Ductile-Iron Pipe, Centrifugally Cast.
- L. AWWA C153 – Ductile-Iron Compact Fittings.
- M. AWWA C207 – Steel Pipe Flanges for Waterworks Service, Sizes 4 Inches Through 144 Inches (100 mm Through 3,600 mm).
- N. AWWA C600 – Installation of Ductile-Iron Mains and Their Appurtenances.
- O. AWWA M41 – Ductile-Iron Pipe and Fittings
- P. ISO 8179 – Ductile Iron Pipes, Fittings, Accessories and Their Joints – External Zinc-Based Coating – Part 1: Metallic Zinc with Finishing Layer.

1.04 SUBMITTALS

- A. Conform to requirements of Section 01 33 00 – SUBMITTAL PROCEDURES.
- B. Design Calculations
 - 1. All design calculations shall be signed and sealed by a Professional Engineer licensed in the State of Illinois.
 - 2. Manufacturer's pipe design calculations shall be submitted with Contractor's Bid Documents.
- C. No laying schedule will be reviewed without all design data submittals.
- D. Submit shop drawings and product data as required below:
 - 1. Submit detailed drawings and data on pipe, fittings, gaskets, and appurtenances in conjunction with shop drawings required.
 - 2. Pipe Manufacturer's Submittals
 - a. Pipe Design Calculations: Detailed drawings of pipes, specials, fittings, and joints with design calculations for internal pressure, vacuum, and external load conditions.
 - b. Design Calculations for Restrained Joints: Rubber gasket reports and gasket sizing calculations.
 - c. Written transcripts of results of acceptance test, low temperature impact test, and foundry records – in accordance with AWWA C151, Sec. 5.2.2, Sec. 5.3, and Sec. 5.4, respectively.
 - d. Rubber gasket test report.
 - e. Certificate of Compliance with Contract Specifications and specified AWWA Standards; specifically, AWWA C151, Sec.5.1.1.2 – Manufacturer's Statement.
 - 1) Basis for design of pipe.
 - 2) Details of fittings, specials, and appurtenances.
 - 3) Manufacturer's installation guide.
 - 4) Manufacturer's written statement that pipe lining will meet an $\epsilon = 0.005$ ft (ϵ is defined as specific surface roughness).
 - f. Certificate of Compliance certifying:
 - 1) Compliance with NSF/ANSI 61 Standards and certified to be lead-free.
 - 2) Compliance with American Iron and Steel (AIS).

1.01 MEASUREMENT AND PAYMENT

- A. Refer to Section 01 22 00 – UNIT PRICES.

1.02 DELIVERY, STORAGE, AND HANDLING

- A. Pipe and fittings shall be handled by padded slings, hooks, or pipe tongs, or by manufacturer's approved devices which will not damage pipe exterior surface and internal lining.
- B. Rolling or sliding of pipe under all circumstances, regardless of provisions made to protect pipe, shall be prohibited. Any pipe dropped shall be returned to manufacturer's plant.
- C. All pipe and fittings damaged in shipment or by handling at Job Site prior to placement shall be returned to manufacturer's plant.
- D. Pipe ends shall be covered/sealed with temporary plastic end caps to prevent debris and foreign materials from contacting pipe interior.

- E. The pipe shall be strung along route of the pipeline to satisfaction of Owner's Representative and shall be protected by Contractor with proper lights, barricades, etc.

PART 2 - PRODUCTS

2.01 DESIGN REQUIREMENTS

- A. All ductile iron pipe shall be in accordance with AWWA Standards; specifically, AWWA C104, AWWA C110, AWWA C115, AWWA C151, and AWWA C153.
- B. Ductile iron pipe crossing a major waterway such as a large stream, river, or channel shall be designed for negative buoyancy by concrete casing or other approved means and no allowance for earth cover in buoyancy calculations.
- C. All ductile iron pipe and fittings shall have a minimum design strength for a combined loading of an internal pressure of 150 psi, an external loading of 10 feet cover of 120 pounds per cubic foot soil weight and trench width of outside pipe diameter plus 4 feet with a single AASHTO HS-20 truck live load on unpaved road or flexible pavement, plus a water hammer allowance of 100 psi. If indicated on Drawings, external load (rail load) shall be Cooper E-80. Water table shall be at ground surface.
- D. Ductile iron pipe and fittings, unless otherwise specified, shall be double-thickness cement-lined without seal-coating, in accordance with AWWA C104/A21.4-22. Cement mortar lining shall comply with ANSI/NSF Standard 61.
- E. Coatings
 - 1. All pipe shall be coated as follows:
 - a. Zinc Basecoat: Exterior of ductile iron pipe shall be coated with a layer of arc-sprayed zinc, per ISO 8179. Mass of zinc applied shall be 200 grams per square meter of pipe surface area. A finishing layer topcoat shall be applied to zinc. Mean dry film thickness of finishing layer shall not be less than 3 mils with local minimum not less than 2 mils. Coating system shall conform in every respect to ISO 8179-1. Ductile iron fittings shall also have zinc protective coating sprayed on at factory at a minimum of 3 mils.
 - b. Asphaltic Coating: All ductile iron pipe and fittings shall be outside-coated with an asphaltic material applied by airless spray method. For this kind of coating, exterior coating shall comply with AWWA C151/A21.51, and shall be smooth without pinholes and no thin, bare, or overly thick areas. Smoothness shall be such that when hand rubbed, no "sandpaper" feeling will be experienced and spigot area will readily slide through gasket without pulling, tearing, rolling, or otherwise disturbing sealing capabilities of gasket. Spigot ends shall be beveled prior to coating to an extent that will permit ready insertion of spigot through gasket area outside, in accordance with AWWA C151, Sec. 4.4.1.
- F. Minimum Thickness
 - 1. Where Drawings show depth of cover exceeds 10 feet or for special applications, pipe shall be designed for a loading condition of not less than indicated on Drawings. Use standard pipe laying condition Type 4 for thickness design calculation. Pipes to be installed inside tunnel liner or casing shall be designed for full overburden neglecting liner or casing.
 - 2. In addition to external load, all pipe and fittings shall be designed for collapse vacuum pressure -14.7 psi with a factor of safety of 2.0.

3. All pipe shall have a nominal wall thickness as follows:

Diameter (Inches)	Depth of Cover¹ (Feet)	Pressure Class	Laying Condition Type	Thickness (Inches)
3	100	350	4	0.25
4	85	350	4	0.25
6	47	350	4	0.25
8	34	350	4	0.25
10	28	350	4	0.26
12	28	350	4	0.28
14	27	350	4	0.31
16	28	350	4	0.34
18	28	350	4	0.36
20	28	350	4	0.38
24	20	250	4	0.37
30	19	250	4	0.42
36	18	250	4	0.47

Note 1: If depth of cover shown on Drawings exceeds depth of cover shown in this column, pressure class of pipe shall be increased in accordance with AWWA C151.

G. Ductile-Iron Outlets

1. Welded on bosses or outlets may be permitted. Outlets must be fabricated from centrifugally-cast ductile iron pipe, manufactured and tested in accordance with AWWA C151. Outlets must be rated for a minimum 350 psi water pressure. Flange or mechanical joint bosses may also be furnished.

H. Joint

1. Restrained Joints

- a. Unbalanced forces at pipe bends, tees, valves, etc., shall be restrained by transmitting those forces to pipe wall by means of flexible-tied jointing systems, which shall be accomplished at joint and not between joints. Each restrained joint shall be designed to withstand and transmit longitudinal thrust forces due to pipe working pressure plus transient pressure. For ductile iron pipe, system to be used shall be AMERICAN "Lok-Ring" or "Flex-Ring"; or U.S. Pipe's "TR FLEX." or approved equal. Mechanical joint retaining glands with set screws or Megalug type will not be accepted. All nuts and bolts shall be COR-TEN steel. Pipe joints in vicinity of bend fittings shall be restrained for distances tabulated on Drawings.

2. Flanged Joints

- a. All flanged joints shall be made with single-piece, red rubber gaskets 1/8 or 1/16-inch thick, as recommended by pipe manufacturer. Gaskets shall be full-face (meeting AWWA C115, Appendix A and AWWA C207 requirements) and as recommended by manufacturer.
- b. Flanges for ductile iron pipe fittings, companion flanges, and castings shall be in conformity with current ANSI B16.1, Class 125. Flat-faced flanges shall be used where mating flange is flat-faced. All bolts for buried flange joints shall be COR-TEN steel, as specified under Subsection 2.01L.

3. Mechanical Joint and Push-on Joint

- a. All mechanical joints and push-on joints for ductile iron pipe shall be in conformity with requirements of AWWA C111/A21.11-23. Joints shall be restrained where shown. All bolts for buried mechanical joints shall be COR-TEN steel, as specified under Subsection 2.01H.2.a.

I. Furnished With Pipe

1. In addition to straight lengths of pipe, access manholes, reducers, special fittings, and wall pieces for manholes, adapters, outlets, sleeves, caps, plugs, blind flanges, etc., there shall be furnished (within Contract Unit Prices for installed pipe) all fittings, elbows, bends, tees, solid sleeves, night-caps, bolts, nuts, etc., required for complete pipeline construction, not only as shown on Drawings but also as required by field conditions during construction. Blow-off connections and air valve connections may be fabricated into full pipe lengths where possible.
2. Furnish all rubber gaskets and special materials required for making joints and all special materials required to be incorporated in certain pieces of pipe or fittings (such as materials for restrained joints, etc.) as shown on Drawings.
3. Pipe supplier shall furnish – within Contract Unit Prices for installed pipe – all required solid sleeves, shorts, and adapters, which, though not specifically called for on Drawings, may still be required by field conditions during construction, at no extra cost to Owner's Representative.

J. V-Bio Polyethylene Encasement

1. V-Bio Enhanced Polyethylene Encasement shall be installed on all underground ductile iron pipe and ductile iron appurtenances, in accordance with AWWA C600 and AWWA C105/A21.5-18. Color shall be blue for potable water, purple for recycled water, and green for sanitary sewage service. Polyethylene encasement for use with ductile iron pipe systems shall consist of three layers of co-extruded linear low-density polyethylene (LLDPE) fused into a single thickness of no less than 8 mils. Inside layer of polyethylene wrap to be in contact with pipe exterior shall be infused with corrosion inhibitor and antimicrobial biocide to control galvanic corrosion. Product shall be "V-Bio" or approved equal.
2. Polyethylene encasement for ductile iron pipe shall be supplied as a flat tube meeting dimensions of AWWA C105/A21.5-18, Table 1, and shall be supplied by ductile iron pipe manufacturer.
3. Plastic adhesive tape shall consist of polyolefin backing and adhesive, which bonds to common pipeline coatings, including polyethylene. Products: Canusa-CPS's "WrapidTape"; "Tapecoat H35"; "Polyken 934"; AA Thread Seal Tape, Inc.; or approved equal.

K. Wall Pipes

1. Wall pipes shall be ductile iron where both connecting pipes are ductile iron with a minimum wall thickness as called for under Subsection 2.02F. They shall extend beyond the wall, as shown on Drawings. Wall pipes shall have intermediate wall collars and flanged-end at inside and outside of structure, or as shown on Plans. These pipes shall be cement-mortar lined and have an asphaltic coating. Wall collars shall be designed as not to transmit any load or force to the wall.
2. Wall pipes shall conform to AWWA C110, except for length of fittings which may be varied as needed. These fittings shall be cement-mortar lined and have an outside asphaltic coating. Length of fittings may be varied as needed.

L. Dielectric Connection Between Dissimilar Pipe Materials

1. In all cases where dissimilar pipe materials are connected together, corrosion caused by galvanic action shall be avoided by insulating connection by means of a dielectric connector for small pipe or an insulated flange. Strength of coupling or connection shall in no case be less than pipe to which it is connected. Refer to Section 13 47 13 – CATHODIC PROTECTION.

PART 3 - EXECUTION

3.01 INSTALLATION

A. In addition to pipe manufacturer's installation guide, the following requirements shall be met:

1. Install in accordance with AWWA C600.
2. Pipe shall be unloaded, handled, and placed using padded slings or other pipe manufacturer approved devices which distribute weight of pipe and prevent damage to exterior coating, joint rings, or pipe interior lining. Use of cables and other metal surfaces in contact with pipe exterior is prohibited.
3. Unloading or movement of pipe by rolling or sliding at any time is strictly prohibited.
4. Joint pull in-field to correct alignment shall be limited to one-half maximum amount recommended by pipe manufacturer.
5. Check gaskets after pipe sections are joined with feeler gauge to ensure that no displacement of gasket has occurred at point around circumference after joining. If displacement has occurred, remove pipe section and remake joint as if for new pipe. Remove old gasket and replace before remaking joint.
6. Install double wrap polyethylene encasement in conformance with AWWA C105/A21.5.
 - a. Polyethylene encasement shall be installed by Modified Method A for wet trench condition, unless otherwise approved by Owner's Representative.
 - b. Install polyethylene to completely encase pipe and fittings to provide a watertight corrosion barrier. Continuously secure overlaps and ends of sheet and tube with polyethylene tape. Make circumferential seams with two or more complete wraps and no exposed edges. Tape longitudinal seams and longitudinal overlaps, extending tape beyond and beneath circumferential seams. Wrap bell-spigot interfaces, restrained joint components, and other irregular surfaces with wax tape or moldable sealant prior to placing polyethylene encasement. Minimize voids beneath polyethylene.

- c. Place circumferential or spiral wraps of polyethylene tape at 2-foot intervals along barrel of pipe to minimize space between pipe and polyethylene. Overlap adjoining polyethylene tube coatings a minimum of 1 foot and wrap prior to placing concrete anchors, collars, supports, or thrust blocks. Hand-wrap polyethylene sheet, apply two complete wraps with no exposed edges to provide a watertight corrosion barrier, and secure in place with 2-inch wide plastic adhesive tape. Repair polyethylene material that is damaged during installation. Use polyethylene sheet, place over damaged or torn area and secure in place with 2-inch wide plastic adhesive tape.
 - d. Repair polyethylene encasement at all service connections, in accordance with AWWA C600, Sec. 4.8.
 - 7. Holiday Testing
 - a. Fusion-Bonded Epoxy: Conform to requirements for new fittings in AWWA C116/A21.16.
 - 8. Provide electrical continuity bonding across buried mechanical and push-on joint assemblies, except where insulating flanges are required by Drawings.
 - a. Provide minimum number of bond wires shown on Drawings. Remove 1 inch of HMWPE insulation from each of bond wire prior to attaching.
 - b. Secure wire onto pipe using approved thermite welding procedures.
 - c. Coat bare metal and weld metal after weld is secure. Use coal-tar compound or other compatible coating. For polyurethane-coated pipe, use compatible polyurethane coating.
 - d. Visually inspect thermite weld connections for electrical continuity, strength, and suitable coating prior to backfilling or placing pipe in augered hole or casing.
- 3.02 FIELD REPAIR OF COATINGS
- A. Fusion Bonded Epoxy: Conform to requirements for new fittings in AWWA C116/A21.16.
- 3.03 SURVEYING
- A. Use adequate surveying methods and procedures and employ competent personnel to ensure pipe sections are laid to line and grade and within stipulated tolerances. Measure and record, in form approved by Owner's Representative, in-place survey data for pipe laid each day and submit data to Owner's Representative in accordance with Section 01 30 01 – DIGITAL UTILITY DATA COLLECTION and Section 01 31 00 – PROJECT MANAGEMENT AND COORDINATION.
- 3.04 PHOTOGRAPH AND VIDEO REPORTING OF PIPE JOINTS
- A. Each completed pipe joint shall be photographed by Owner's Representative. Contractor shall notify Owner's Representative when joints are complete, prior to backfilling pipe. Contractor shall mark date that joint was completed and initials of foreman next to factory painted pipeline station number. Lettering size shall be same as used for pipe stationing number.
 - B. Owner's Representative will provide internal pipe joint video report for the pipeline. Video report shall show full circumference of each joint with pipe mark number and station number labeled or identified by voice. Date and time shall be recorded on video.
 - C. Contractor shall coordinate with Owner's Representative upon completion of pipe joints and provide access to pipe for visual observation and documentation.

END OF SECTION

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40 05 05 DISMANTLING JOINTS

PART 1 - GENERAL

1.01 SUMMARY

- A. This Section includes design, manufacture, and installation of 3- through 72-inch dismantling joints with a maximum rated pressure equal to AWWA C207 flange.

1.02 RELATED WORK

- A. Section 01 22 00 – UNIT PRICES
- B. Section 01 33 00 – SUBMITTAL PROCEDURES
- C. Section 01 40 00 – QUALITY REQUIREMENTS

1.03 REFERENCES

- A. ASTM A36 – Carbon Structural Steel.
- B. ASTM A53/A53M – Pipe, Steel, Black and Hot Dipped, Zinc-Coated, Welded and Seamless.
- C. ASTM A193/193M – Alloy-Steel and Stainless-Steel Bolting Material for High Temperature or High Pressure Service and Other Special Service Applications.
- D. ASTM A194/A194M – Carbon Steel, Alloy Steel, and Stainless Steel Nuts for Bolts for High Pressure or High Temperature Service, or Both.
- E. ASTM A283/A283M – Low and Intermediate Tensile Strength Carbon Steel Plates.
- F. ASTM A536 – Ductile Iron Castings.
- G. ASTM A588/A588M – High-Strength Low-Alloy Structural Steel, up to 50 ksi [345 MPa] Minimum Yield Point, with Atmospheric Corrosion Resistance.
- H. ASTM D2000 – Standard Classification System for Rubber Products in Automotive Applications.
- I. AWWA C207 – Steel Pipe Flanges for Waterworks Service, Sizes 4 In. Through 144 In. (100 mm Through 3,600 mm).
- J. AWWA C213 – Fusion-Bonded Epoxy Coatings and Linings for Steel Water Pipe and Fittings.
- K. ISO 9001 – Quality Management Systems – Requirements.
- L. NSF/ANSI 61 – Drinking Water System Components – Health Effects.
- M. NSF/ANSI/CAN 372 – Drinking Water System Components – Lead Content.

1.04 QUALITY ASSURANCE

- A. Manufacturer shall demonstrate a minimum of 10 years' experience in manufacture of dismantling joints.
- B. Manufacturer shall have a quality management system that is certified to ISO 9001 by an accredited, certifying body.

1.05 SUBMITTALS

- A. Conform to requirements of Section 01 33 00 – SUBMITTAL PROCEDURES.
- B. Shop drawings shall include:
 - 1. Critical dimensions.

2. Parts list.
 3. Materials of construction.
 4. Manufacturer's installation instructions.
- C. Certificate of Compliance
1. Submit Certificate of Compliance certifying conformance with American Iron and Steel (AIS) requirements.

1.06 MEASUREMENT AND PAYMENT

- A. Refer to Section 01 22 00 – UNIT PRICES.

PART 2 - P R O D U C T S

2.01 GENERAL

- A. Pressure ratings shall be 175 psi for sizes through 12 inches, and 150 psi for 14 inches and larger with AWWA C207, Class D flanges.
- B. All Materials shall comply with NSF/ANSI/CAN 372.

2.02 ACCEPTABLE MANUFACTURERS

- A. Romac Industries, Inc.
- B. Xylem's Smith-Blair, Inc.; OR
- C. Approved equal.

2.03 FLANGE SPOOL

- A. Flange spool shall be fabricated from ASTM A36, ASTM A53/A53M, or ASTM A283/A283M carbon steel having a minimum yield of 30,000 psi or greater.
- B. Flange shall comply with AWWA C207, Class D.

2.04 END RING AND BODY

- A. End ring and body shall be made of ASTM A536, Grade 65-45-12 ductile iron or ASTM A36 steel with a minimum yield of 36,000 psi or greater.

2.05 GASKETS

- A. Gaskets shall be NBR rubber compounded for water service in accordance with ASTM D2000 MBA810Z.

2.06 FASTENERS

- A. Bolts and nuts shall be ASTM A588/A588M, HSLA Type 316 Stainless Steel.
- B. Tie-rods shall comply with ASTM A193/193M, B8M and ASTM A194/A194M, Grade 8 heavy hex nuts.

2.07 ASSEMBLY TOLERANCE

- A. For 3 to 13-Inch Sizes: 2 inches flange face to flange face.
- B. For 14 to 72-Inch Sizes: 3 inches flange face to flange face.

2.08 COATINGS AND LININGS

- A. Interior and exterior of dismantling joint shall be coated with an NSF/ANSI 61 approved fusion-bonded epoxy in accordance AWWA C213.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Dismantling joints shall be installed in strict accordance with manufacturer's published recommendations.
- B. Extreme care shall be used in handling, storage, and installation of dismantling joint to prevent damage or distortion of equipment and to ensure proper performance.

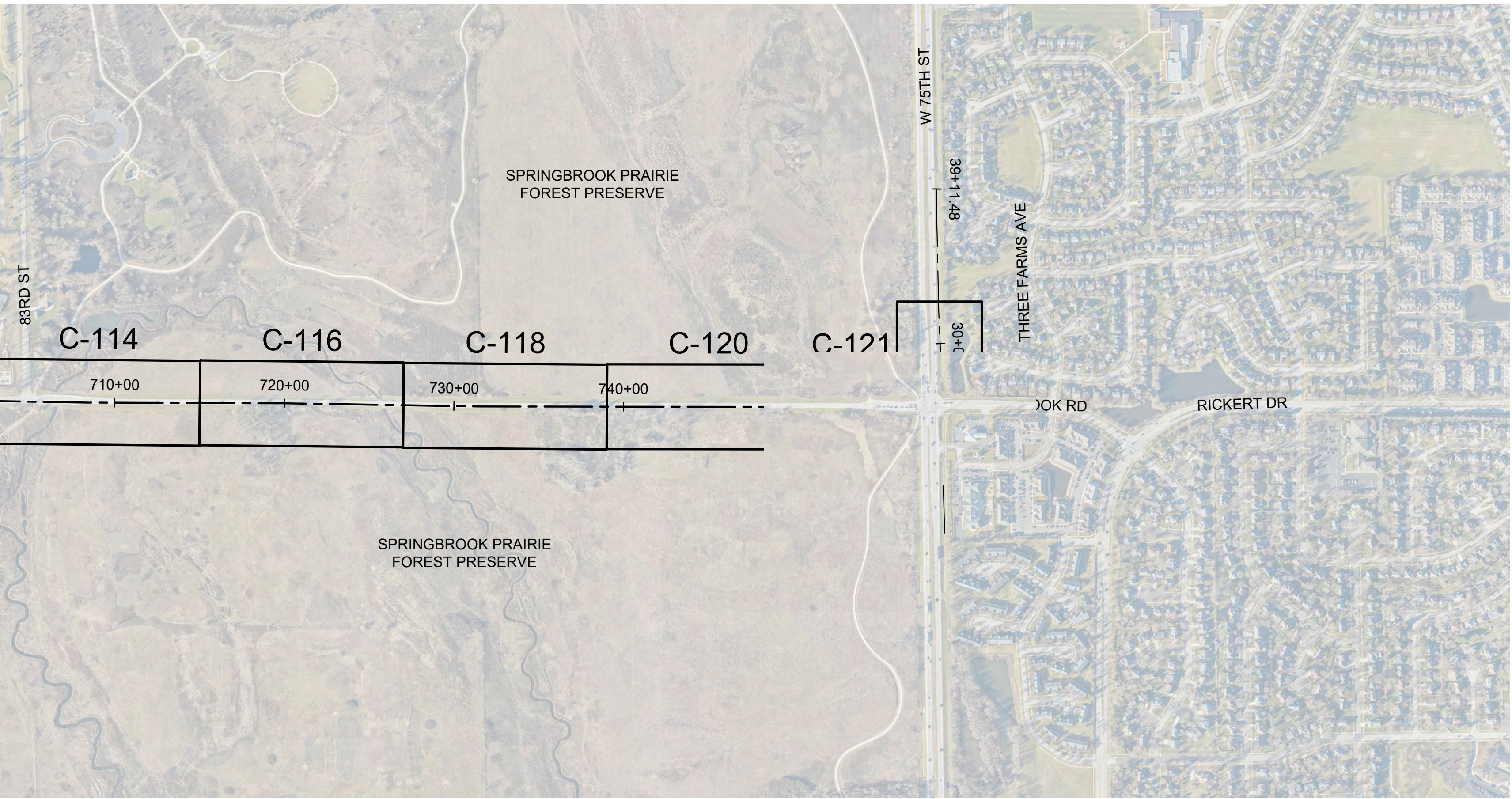
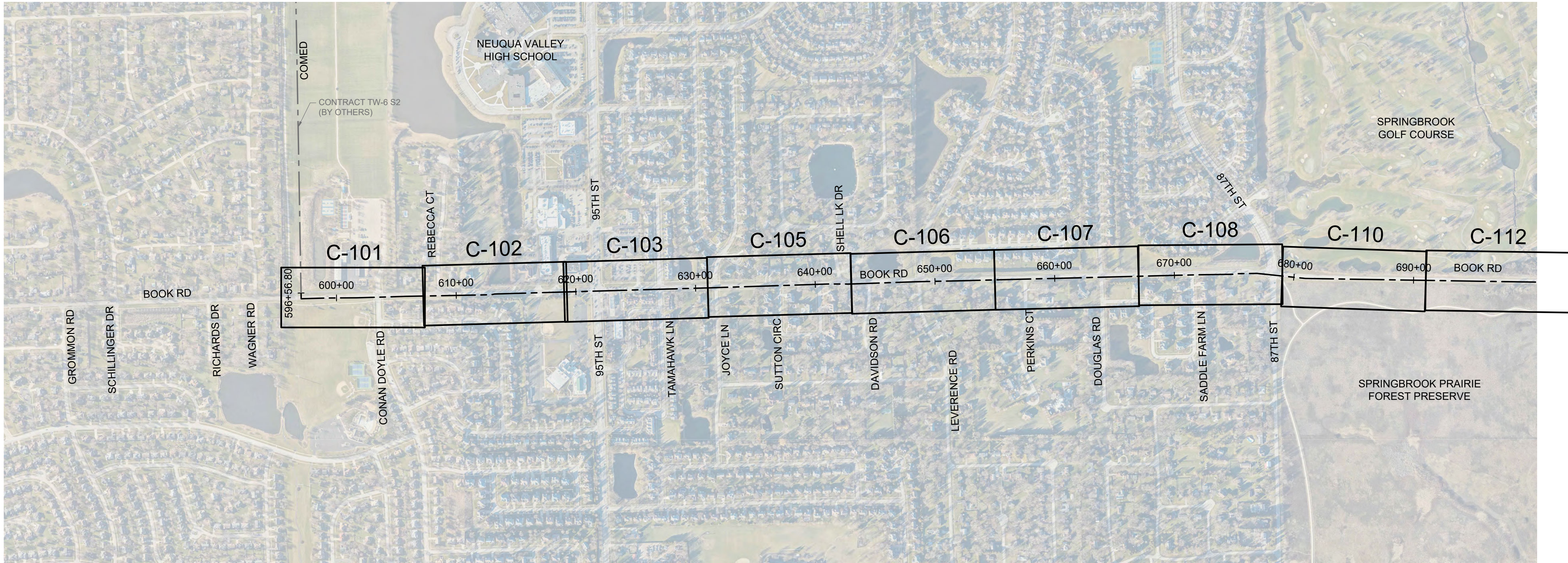
3.02 FIELD PAINTING

- A. Touch-up field painting shall be performed using manufacturer's recommended materials and procedures.

END OF SECTION

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1

JURISDICTION TABLE			
JURISDICTION	STATION START (APPROX)	STATION END (APPROX)	
CITY OF NAPERVILLE	596+00	710+50	
NAPERVILLE TOWNSHIP	710+50	757+25	
DUPAGE COUNTY DIVISION OF TRANSPORTATION (DuDOT) ⁽¹⁾	757+25	758+80	

NOTE:
1. DuDOT JURISDICTION INCLUDES WORK ALONG 75TH STREET (STA 24+50 TO 30+00).

REV.	DATE	DESCRIPTION	BY	DATE	DESIGNED	—	OG
1	06/10/25	ADDENDUM NO. 1	OG	MAY 2025	CHECKED	—	JWG
					DRAWN	—	EDB
					CHECKED	—	OG



DUPAGE WATER COMMISSION
WATERLINK EXTENSION
CONTRACT TW-6/25 SECTION 1 WEST TRANSMISSION MAIN

GENERAL
KEY MAP
BOOK ROAD



00 91 13 ADDENDUM NO. 2

PART 1 - G E N E R A L

1.01 ADDENDUM

- A. Project Information:
 - 1. To: PROSPECTIVE BIDDERS
 - 2. Project Title: CONTRACT TW-6/25 SECTION 1 (BOOK ROAD)
 - 3. Date of Addendum: JUNE 16, 2025
 - 4. Owner: DUPAGE WATER COMMISSION
 - 5. Engineer: LOCKWOOD, ANDREWS & NEWNAM, INC.
- B. This Addendum forms a part of the Contract Documents and modifies the original documents dated May 23, 2025.
- C. Acknowledge receipt of this Addendum in the space provided in the Bidder's Proposal documents included with Bidding Documents Failure to do so may disqualify the Bidder.

1.02 CHANGES TO PROJECT MANUAL

- A. Bidding Documents – Invitation for Bidder's Proposals
 - 1. Revise Bid Opening time and date under Subsection "6. Bid Opening" as follows:
 - 6. *Bid Opening*
Owner will receive sealed Bidder's Proposals for the Work until 10:00 o'clock, a.m., local time, July 1, 2025, at Owner's office listed above, at which time, or as soon thereafter as possible, all Bidder's Proposals will be publicly opened and read aloud.
- B. Bidding Documents – Special Instructions to Bidders
 - 1. Revise deadline for Bidder Questions as follows:
Deadline for Bidder questions is 12:00pm on Friday, June 20th, 2025.
- C. Contract Documents – Apprenticeship and Training Program Certification
 - 1. Remove Apprenticeship and Training Program Certification form in its entirety (2 pages) and replace with the attached revised form.
- D. Contract Documents – Qualified Illinois Bidder Certification
 - 1. Remove Qualified Illinois Bidder Certification form in its entirety (1 page) and replace with the attached revised form (1 page).
- E. Contract Documents – Notice of Award
 - 1. Remove Notice of Award in its entirety (2 pages) and replace with the attached revised notice (2 pages).
- F. Contract Agreement - Article I The Work
 - 1. Revise Subsection "1.3. Interpretation of Contract Documents" and replace reference to "Burns & McDonnell" with the following:
Burns & McDonnell Engineering Company, Inc.

G. Contract Documents – General Conditions - Article IV Insurance

1. Revise Subsection “4.3.5. Owner’s and Contractor’s Protection Liability Insurance” and replace reference to “Burns & McDonnell” with the following:

Burns & McDonnell Engineering Company, Inc.

H. Contract Documents – Special Conditions of Contract

1. Revise Subsection “2.A. Additional Insureds/Indemnities” and replace reference to “Burns & McDonnell” with the following:

Burns & McDonnell Engineering Company, Inc.

1.03 QUESTIONS AND CLARIFICATIONS

A. Clarifications:

1. Bidders shall note that Bids will be received at Owner’s office located at 600 E. Butterfield Rd, Elmhurst, IL 60126, on revised Bid Opening date listed above.
2. Due to change in Bid Opening date, Bid Award date will be shifted to August 21, 2025 to coincide with Owner’s next board meeting. Owner and Engineer recognize reduced timeline between Bid Award and start of low demand shutdown period for 48-inch water main connections. Owner, Engineer, and Owner’s Representative will prioritize and expedite shop drawing reviews related to 48-inch water main connection.
3. Pipe calculations to be submitted with Bid shall be signed and sealed by a licensed Professional Engineer. Professional Engineer may be licensed in another U.S. State for calculations submitted with Bids. After Contract Award, Contractor’s Pipe Supplier shall submit pipe design calculations signed and sealed by Professional Engineer licensed in the State of Illinois with official shop drawings.

LOCKWOOD ANDREWS &
NEWNAM, INC.



06/16/2025 
Expires: 11/30/2025

END OF ADDENDUM NO. 2

DUPAGE WATER COMMISSION
CONTRACT TW-6/25 SECTION 1 (BOOK ROAD)

SOLICITATION NO. _____

APPRENTICESHIP AND TRAINING PROGRAM CERTIFICATION

BIDDERS MUST RETURN THIS EXECUTED CERTIFICATION WITH THE BID

**FAILURE TO RETURN THIS EXECUTED CERTIFICATION MAY RESULT IN
DISQUALIFICATION OF YOUR BID**

COMPANY NAME: _____

DuPage Water Commission's Bylaws ("Bylaws") requires the Board of Commissioners to consider various factors in determining the responsibility of bidders or offerors on contracts. In addition to all other responsibility factors in the Bylaws, with respect to contracts for construction of public works, all bidders and all bidders' subcontractors must participate in active apprenticeship and training programs that are approved by and registered with the United States Department of Labor's Bureau of Apprenticeship and Training for each of the trades of work contemplated under the contract.

Therefore, all bidders are required to complete the following certification:

- I. Except as provided in paragraph IV below, the undersigned bidder certifies that it is a participant, either as an individual or as part of a group program, in an approved, active apprenticeship and training program registered with the U.S. Department of Labor's Office of Apprenticeship applicable to each type of work or craft that the bidder will perform with its own employees.
- II. The undersigned bidder further certifies for work to be performed by subcontract that each of its subcontractors submitted for approval either (A) is, at the time of such bid, participating in an approved, active apprenticeship and training program registered with the U.S. Department of Labor's Office of Apprenticeship applicable to the type of work or craft that the subcontractor will perform; or (B) will, prior to commencement of performance of work pursuant to this contract, establish participation in an approved active apprenticeship or training program registered with the U.S. Department of Labor's Office of Apprenticeship applicable to the type of work of the subcontract.
- III. The undersigned bidder, by inclusion in the list in the space below, certifies the official name of each program sponsor holding the Certificate of Registration for all the types of work or crafts in which the bidder is a participant and that will be performed with the bidder's employees. **Types of work or craft that will be subcontracted shall be included and listed as subcontract work.** The list shall also indicate any type of work or craft job category for which there is no applicable apprenticeship or training program available.

(add sheets if necessary)

APPRENTICESHIP PROGRAM CERTIFICATION

IV. Except for any work identified above, any bidder or subcontractor that shall perform all or part of the work of the contract or deliver and install materials solely by individual owners, partners or members and not by employees to whom the payment of prevailing rates of wages would be required, shall be identified, including the owner/operator workforce and positions of ownership.

(add sheets if necessary)

The requirements of this Certification and disclosure are a material part of the contract, and **the contractor shall require this Certification provision to be included in all approved subcontracts**. The bidder is responsible for making a complete report and shall make certain that each type of work or craft job category that will be utilized on the project is accounted for and listed. The DuPage Water Commission at any time before or after award may require the production of a copy of each applicable Certificate of Registration issued by the United States Department of Labor evidencing such participation by the contractor and any or all its subcontractors. To fulfill the participation requirement, it shall not be necessary that any applicable program sponsor be currently taking or that it will take applications for apprenticeship, training or employment during the performance of the work of this contract or deliver and install proposal.

Signature and Title

CORPORATE SEAL (if available)

Business Address

City and State

Phone

email address

Subscribed and Sworn to before me this _____ day of _____, 20__.

Notary Public My Commission Expires: _____

DUPAGE WATER COMMISSION

CONTRACT TW-6/25 SECTION 1 (BOOK ROAD)

SOLICITATION NO. _____

QUALIFIED ILLINOIS BIDDER CERTIFICATION

**BIDDERS MUST RETURN THIS EXECUTED CERTIFICATION WITH THE BID TO BE
CONSIDERED AN ILLINOIS BIDDER FOR PURPOSES OF THIS BID**

**FAILURE TO RETURN THIS EXECUTED CERTIFICATION WILL RESULT IN YOUR
INELIGIBILITY FOR QUALIFIED ILLINOIS BIDDER STATUS**

The affiant deposes and states that he/she has reviewed the qualified Illinois bidder preference provisions of this Invitation for Bids and the DWC's Bylaws regarding qualified Illinois bidder preference and certifies that the Bidder is/is not (circle one) a Qualified Illinois Bidder as defined by this Invitation for Bids and DWC's Bylaws. Bidder is (mark applicable criterion):

- ___ a sole proprietor whose primary residence is in Illinois;
- ___ a business incorporated or organized as a domestic corporation under the Illinois Business Corporation Act of 1983 (805 ILCS 5/1.01 et seq.);
- ___ a business organized as a domestic partnership under the Uniform Partnership Act of 1997 (805 ILCS 206/100 et seq.);
- ___ a business organized as a domestic limited partnership under the Uniform Limited Partnership Act of 2001 (805 ILCS 215/0.01 et seq);
- ___ a business organized under the Illinois Limited Liability Company Act (805 ILCS 180/1-1 et seq.); or
- ___ a business organized under the Illinois Professional Limited Liability Company Act (805 ILCS 185/1 et seq.);
- ___ A joint venture in which each joint venturer satisfies one of the qualifications above.

Signature and Title

CORPORATE SEAL (if available)

Business Address

City and State

Phone

email address

Subscribed and Sworn to before me this _____ day of _____, 20__.

Notary Public My Commission Expires: _____

DUPAGE WATER COMMISSION
CONTRACT FOR THE CONSTRUCTION OF
CONTRACT TW-6/25 SECTION 1 (BOOK ROAD)

NOTICE OF AWARD

PERSONAL DELIVERY OR CERTIFIED MAIL/RETURN RECEIPT REQUESTED

TO: **[SUCCESSFUL BIDDER]**

[ADDRESS Of

SUCCESSFUL BIDDER]

("Contractor")

FROM: DuPage Water Commission
600 East Butterfield Road
Elmhurst, Illinois
60126-464270

("Owner")

On the [] day of [MONTH], 20____, Owner found to be most favorable to the interests of Owner the Bidder's Proposal submitted by Contractor and dated on the [] day of [MONTH], 20____, in which Contractor proposes to contract with Owner, in the form of the Contract Agreement included in the Bid Package to perform the following Work: (1) to provide, perform, and complete at the Work Site and in the manner described and specified in the Bid Package all necessary work, labor, services, transportation, equipment, materials, apparatus, machinery, tools, fuels, gas, electric, water, waste disposal, information, data, and other means and items necessary for the design, if any, construction, and installation of the WEST TRANSMISSION MAIN ALONG BOOK ROAD – 75TH STREET TO COMED ROW (Contract TW-6/25 Section 1) together with related attachments, equipment, and appurtenances thereto; (2) to procure and furnish all permits, licenses, and other governmental approvals and authorizations necessary in connection therewith except as otherwise expressly provided in the Special Conditions of Contract included in the Bid Package; (3) to procure and furnish all Bonds and all certificates and policies of insurance specified in the Bid Package; (4) to pay all applicable federal, state, and local taxes; (5) to do all other things required of Contractor by the Contract; and (6) to provide, perform, and complete all of the foregoing in a proper and workmanlike manner and in full compliance with, and as required by or pursuant to, the Contract.

OWNER ACCORDINGLY AWARDS CONTRACTOR, EFFECTIVE AS OF THE DATE OF DELIVERY OF THIS NOTICE OF AWARD, THE CONTRACT FOR SAID WORK FOR THE LUMP SUM AND/OR UNIT PRICES SET FORTH IN THE BIDDER'S PROPOSAL.

NOTICE OF AWARD

A Closing will be held at [__:___.m.] on the [] day of [MONTH], 20____, at the above listed office of Owner at which time the Contract Agreement will be executed by Owner provided that all Conditions Precedent to Closing have been satisfied. Contractor must have complied with all Conditions Precedent to Closing set forth in Section 18 of the General Instructions to Bidders included in the Bid Package on or before the Closing Date.

The failure or refusal to comply with the Conditions Precedent to Closing on or before the Closing Date or to Close on the Closing Date shall result, at Owner's option, in the imposition of liquidated damages and the annulment of this award, or in Owner's exercise of any or all equitable remedies Owner may have, all as more specifically set forth in Sections 9, 18, and 19 of the General Instructions to Bidders included in the Bid Package.

CONTRACTOR WILL BE DIRECTED TO COMMENCE THE WORK IMMEDIATELY UPON EXECUTION OF THE CONTRACT AGREEMENT BY OWNER AT THE CLOSING.

DATED this [] day of [MONTH], 20____.

DUPAGE WATER COMMISSION

By: /s/ _____ Paul D. May,

General Manager

P.E. _____

00 91 13 ADDENDUM NO. 3

PART 1 - G E N E R A L

1.01 ADDENDUM

- A. Project Information:
 - 1. To: PROSPECTIVE BIDDERS
 - 2. Project Title: CONTRACT TW-6/25 SECTION 1 (BOOK ROAD)
 - 3. Date of Addendum: JUNE 23, 2025
 - 4. Owner: DUPAGE WATER COMMISSION
 - 5. Engineer: LOCKWOOD, ANDREWS & NEWNAM, INC.
- B. This Addendum forms a part of the Contract Documents and modifies the original documents dated May 23, 2025.
- C. Acknowledge receipt of this Addendum in the space provided in the Bidder's Proposal documents included with Bidding Documents Failure to do so may disqualify the Bidder.

1.02 CHANGES TO PROJECT MANUAL

- A. Bidding Documents – Section 00 42 22 – BID FORM
 - 1. Remove Section 00 42 22 in its entirety and replace with the attached revised Section 00 42 22.
- B. Bidding Documents – Section 00 85 00 – WIFIA Program & Related Requirements
 - 1. Remove Section 00 85 00 in its entirety and replace with the attached revised Section 00 85 00.

1.03 CHANGES TO TECHNICAL SPECIFICATIONS

- A. Section 01 22 00 – UNIT PRICES
 - 1. Remove Section 01 22 00 in its entirety and replace with the attached revised Section 01 22 00.
- B. Section 01 45 33-13 – STORM WATER POLLUTION PREVENTION PLAN
 - 1. Remove Subsection 3.01.E in its entirety and replace with the following:
 - E. *Kane-DuPage Soil & Water Conservation District requirements (for the portion of Project within Kane and DuPage Counties):*
 - 1. *Unless otherwise indicated, all vegetative and structural erosion and sediment control practices will be constructed according to minimum standards and specifications in the Illinois Urban Manual's latest edition.*
 - 2. *The Kane-DuPage Soil and Water Conservation District (KDSWCD) must be notified one week prior to the pre-construction conference, one week prior to the commencement of land-disturbing activities, and one week prior to the final inspection.*
 - 3. *A copy of the approved erosion and sediment control plan shall be maintained on the site at all times.*

4. Any additional means in-stream means and methods should be communicated and confirmed at the preconstruction meeting (or additional meeting) prior to implementation.
 5. Prior to commencing land-disturbing activities in areas other than indicated on these plans (including but not limited to, additional phases of development and off-site borrow or waste areas) a supplementary erosion control plan shall be submitted to the owner for review by the KDSWCD.
 6. The contractor is responsible for the installation of any additional erosion control measures necessary to prevent erosion and sedimentation as determined by the KDSWCD.
 7. The contractor shall keep backup BMPs on-site in order to implement corrective actions following instances of noncompliance.
 8. During dewatering operations, water will be filtered or pumped into sediment basins or silt traps. Dewatering directly into field tiles or stormwater structures is prohibited.
 9. The means, methods, and locations for any dewatering work should be coordinated with KDSWCD prior to implementation.
 10. It is the responsibility of the Contractor to inform any sub-contractor(s) who may perform work on this project, of the requirements in implementing and maintaining these erosion control plans and assure compliance with all applicable local, state, and federal regulations.
2. Add the following text as Subsection 3.01.G:
- G. Illinois Department of Natural Resources requirement for work within or adjacent to Springbrook Prairie INAI, Springbrook Marsh Land and Water Reserve, and Springbrook Prairie Nature Preserve (Approx. Stations Left 705+00 to 757+00 and Right 678+50 to 757+00)
1. No equipment should be stored within the right-of-way.
 2. Parking and staging in areas adjacent to the Nature Preserve should also be avoided.
 3. High-visibility Safety Fence shall be installed along the Limits of Construction within the boundaries of the Nature Preserve. Additionally, signage identifying the area as "NATURE PRESERVE -NO DISTURBANCE BEYOND THIS POINT" shall be affixed to the safety fence at least every 200'.
 4. Good housekeeping practices will be implemented and maintained during and after construction to prevent trash and other debris from inadvertently blowing or washing away.
 5. Any required night lighting should follow International Dark-Sky Association's (IDA) Five Principles for Responsible Outdoor Lighting to minimize the effect of light pollution on wildlife.
 6. All equipment should be power washed off-site to remove exotic/invasive seed or propagules prior to working within this area.
 7. All equipment, including but not limited to boots, tools, equipment, tires, and treads, should be cleaned of all debris prior to entry of the project area in order to avoid spreading of exotic or invasive plant seeds into the Nature Preserve.

8. *A rigorous long-term invasive species management program shall be coordinated and implemented between Contractor and Owner. The plan shall cover a period of a minimum of three years, to minimize the spread of invasive species into the Nature Preserve.*
9. *Should any herbicide use be required for construction or operation, wind speed and direction should be carefully monitored, in order to avoid herbicide drift into the Nature Preserve.*
10. *Prescribed burns may be used adjacent to the Project boundary for vegetation management by Nature Preserve Staff or designated representatives. Contractor shall coordinate with Nature Preserve staff to identify potential burn dates and locations. Reasonable adjustments shall be made if necessary to the work area to accommodate burn activities (for instance: temporary relocation of flammable perimeter fencing).*

C. Section 13 47 13 – CATHODIC PROTECTION FOR PIPELINES

1. Remove Section 13 47 13 in its entirety and replace with the attached revised Section 13 47 13.

D. Section 33 07 00 – TUNNEL SHAFTS

1. Remove Subsection 1.06.C in its entirety and replace with the following:

C. Design shaft located within 100-year flood plain with water retaining liner extending 2 feet above 100-year flood elevation. It's acceptable, when liner is stored at Site, for immediate installation in lieu of it being installed at shaft, provided that shaft liner extends at least 2 feet above existing ground elevation. Contractor may submit alternate method of protecting shaft above ground from surface water with shop drawings.

E. Section 33 11 01 – PRESTRESSED CONCRETE CYLINDER PIPE

1. Remove Section 33 11 01 in its entirety and replace with the attached revised Section 33 11 01.

F. Section 33 11 02 – STEEL PIPE

1. Remove Section 33 11 02 in its entirety and replace with the attached revised Section 33 11 02.

G. Section 33 11 03 – DUCTILE IRON PIPE

1. Add the following Subsections 3.05 and 3.06.

3.05 HYDROSTATIC TESTING

A. Pipe shall be hydrostatically tested in accordance with AWWA C600.

1. Maximum allowable leakage shall not exceed requirements of AWWA C600.

2. All visible leaks shall be repaired regardless of the amount of leakage.

3.06 DISINFECTION

A. Disinfection of water main pipe shall be performed in accordance with AWWA C651.

H. Section 40 05 57 – ELECTRIC VALVE ACTUATORS

1. Remove Section 40 05 57 in its entirety and replace with the attached revised Section 40 05 57.

1.04 CHANGES TO DRAWINGS

- A. Remove Sheet 4 of 199 (Drawing G-004) in its entirety and replace with the attached revised Sheet 4 of 199.
- B. Remove Sheet 8 of 199 (Drawing G-008) in its entirety and replace with the attached revised Sheet 8 of 199.
- C. Remove Sheet 9 of 199 (Drawing G-009) in its entirety and replace with the attached revised Sheet 9 of 199.
- D. Remove Sheet 14 of 199 (Drawing C-105) in its entirety and replace with the attached revised Sheet 14 of 199.
- E. Remove Sheet 17 of 199 (Drawing C-108) in its entirety and replace with the attached revised Sheet 17 of 199.
- F. Remove Sheet 18 of 199 (Drawing C-109) in its entirety and replace with the attached revised Sheet 18 of 199.
- G. Remove Sheet 30 of 199 (Drawing C-121) in its entirety and replace with the attached revised Sheet 30 of 199.
- H. Remove Sheet 32 of 199 (Drawing C-123) in its entirety and replace with the attached revised Sheet 32 of 199.
- I. Remove Sheet 33 of 199 (Drawing C-124) in its entirety and replace with the attached revised Sheet 33 of 199.
- J. Remove Sheet 34 of 199 (Drawing C-125) in its entirety and replace with the attached revised Sheet 34 of 199.
- K. Remove Sheet 35 of 199 (Drawing C-126) in its entirety and replace with the attached revised Sheet 35 of 199.
- L. Remove Sheet 40 of 199 (Drawing C-505) in its entirety and replace with the attached revised Sheet 40 of 199.
- M. Revise Sheet 44 of 199 (Drawing C-509) as follows: Replace all references to "Owner-Furnished BFV" with "Butterfly Valve".
- N. Revise Sheet 57 of 199 (Drawing C-522) as follows: Revise all stations in Detail titles from "STA 756+07" to "STA 752+80".
- O. Remove Sheet 72 of 199 (Drawing E-501) in its entirety and replace with the attached revised Sheet 72 of 199.
- P. Remove Sheet 73 of 199 (Drawing E-502) in its entirety and replace with the attached revised Sheet 73 of 199.
- Q. Remove Sheet 74 of 199 (Drawing E-503) in its entirety and replace with the attached revised Sheet 74 of 199.
- R. Remove Sheet 112 of 199 (Drawing EC-104) in its entirety and replace with the attached revised Sheet 112 of 199.
- S. Remove Sheet 113 of 199 (Drawing EC-105) in its entirety and replace with the attached revised Sheet 113 of 199.
- T. Remove Sheet 114 of 199 (Drawing EC-106) in its entirety and replace with the attached revised Sheet 114 of 199.
- U. Remove Sheet 115 of 199 (Drawing EC-107) in its entirety and replace with the attached revised Sheet 115 of 199.

- V. Remove Sheet 183 of 199 (Drawing CP-501) in its entirety and replace with the attached revised Sheet 183 of 199.
- W. Remove Sheet 184 of 199 (Drawing CP-502) in its entirety and replace with the attached revised Sheet 184 of 199.
- X. Remove Sheet 185 of 199 (Drawing CP-503) in its entirety and replace with the attached revised Sheet 185 of 199.

1.05 QUESTIONS AND CLARIFICATIONS

A. The following Bidder questions were submitted via email:

1. **Q:** The bid list states only 4,210 CY of earth excavation; what item contains the rest of the excavation?
A: The Earth Excavation Bid Item is for pavement-related earth excavation only. This includes 6-inches of stone/earth removal under the pavement removal area as noted on the Roadway Typical Sections and Roadway Restoration Plan Sheet Legend. Excavation Quantity has also been included in the Contract for removal of 9-inches of earth/stone in preparation for temporary pavement installation as noted on the Maintenance of Traffic Plan Sheets. Excavation for installation of pipeline is included in cost of related water main, valve, or appurtenance bid items as described in Section 01 22 00 – UNIT PRICES.
2. **Q:** The bid list is greyed out for curb inlet protection but in the erosion control sheets it shows curb inlet protection. Do I still need to figure for the curb style inlet protection?
A: See revised Bid Form included with this Addendum No. 3. Bid item has been revised to include curb inlet protection.
3. **Q:** Is there a PSI rating available for the weathered limestone shown on the geotechnical bore logs?
A: Yes, compressive strength of limestone is available in Geotechnical Report included in Appendix of Project Manual. Test results can be found starting on Page 1034 of 1183 of Project Manual PDF file. Rock core data is also included after boring log sheets.
4. **Q:** Upon reviewing the staging plan are there any key dates that coincide with each stage?
A: Section 01 11 00 – SUMMARY OF WORK, Subsection 1.04 Work Sequence provides key dates and time restrictions for Work. Additionally, see General Notes on Sheet 118 (MOT-000) which includes various requirements including but not limited to completing roadway restoration within an active construction zone prior to moving into a subsequent construction stage which utilizes that pavement for detour traffic.
5. **Q:** Does the Contractor need to pay for water used for testing, flushing etc.? If so at what rate?
A: Contractor is responsible for procuring potable water for the purposes of testing/flushing/etc., the source of which shall be subject to Owner approval. If Owner is able to provide water, the current rate is \$5.80/1,000 gallons, which is subject to annual increases. All costs associated with the procurement of water for the project shall be considered incidental.
Q: In Section 00 85 00 WIFIA Program & Related Requirements the link for goals <https://www.dol.gov/agencies/ofccp/construction> leads to a page not found. Please post the correct link.
A: Revised Section 00 85 00 is included in this Addendum No. 3. The link for goals is no longer active, but the requirements are listed in the specification.

6. **Q:** In Section 00 85 00 WIFIA Program & Related Requirements the link for the six good faith efforts <https://www.epa.gov/grants/disadvantaged-business-enterprise-program-requirements#sixgoodfaithefforts> leads to a page that does not exist, please post the correct link.
- A:** Revised Section 00 85 00 is included in this Addendum No. 3. The link has been updated.
7. **Q:** In the Naperville Standard Specification 103 Developer/Contractor Responsibilities 103.2 Bonding and Licensing stats that “all contractors must provide a surety bond or letter of credit equal to 110 percent of the value of the proposed improvements...” Is that applicable to this project, or is that just added as part of Naperville’s standard specs? Also, would we need a bond for DuPage County? Will County?
- A:** For any excavation work performed in the public right-of-way, the City of Naperville requires a Construction & Performance Bond equal to 110% of the cost of estimated construction.
- The final permit from DuPage County DOT is still in process and will require a Bond to be posted by the Contractor. The final Bond amount is still pending from the County. However, the County requires a Bond in an amount of 110% of the value of improvements within the County ROW. The Contractor will be required to post this Bond.
- The final written authorization to utilize IDOT IL Route 59 for the Project’s various Detour Routes is still in process and typically requires a Bond to be posted by the Contractor. The Detour has been approved by the IDOT District 1 Detour Committee on 5/29/2025, and final written authorization is still in process by IDOT Permit Section. A final Bond Amount is still pending from IDOT for the use of IL Route 59 as a Detour Route. For bidding purposes, the Contractor can assume a max Bond amount of \$50,000 for IDOT for use of IL Route 59 as a detour route.
- There are no permits or bonds required from Will County DOT.
8. **Q:** Is there any additional work needed, or processes to be followed, associated with the Owner obtained permits and licenses that are not included in the specifications?
- A:** All permit requirements are covered on Drawings or Specifications. The permits are listed under Section 6 of the General Instructions. Final permits/licenses will be provided with the Issued for Construction Documents.
- Review Section 01 45 33-13 – STORM WATER POLLUTION PREVENTION PLAN for additional permitting requirements.
- The Contractor shall assist Owner in obtaining required permits from DuPage County DOT and IDOT by posting required bonds and providing required Certificates of Insurance for the respective permitting agency.
- Permit requirements for DuPage County can be found on their website:
<https://willcounty.gov/County-Offices/Economic-Development/Division-of-Transportation/Permit-and-Access-Regulations/Utility-Permit>
- Permit requirements for IDOT can be found on their website:
<https://idot.illinois.gov/doing-business/permits.html>
- Notifications are required to Soil & Water Conservations districts as shown on General Notes Sheet of Drawings. Revised General Notes sheet included with this Addendum No. 3.

9. **Q:** Will item IND1 Exploratory Excavation be used to locate each utility on the project, or is it only to be measured and paid as Directed by the Owners Representative? It also states that this work is to be done "...by traditional excavation means or vacuum excavation, as directed by Owners Representative" if the excavation means are up to the Owners rep, can separate items be made 1. Traditional Exploratory Ex., and 2 Vacuum Exploratory Ex.?
- A:** Indeterminate Bid Item for Exploratory Excavations is intended to be used only as directed by Owner's Representative. Bid Item is to be used for conflicting utilities found in the field that are not shown on Drawings. Additional Item has been added to Bid Form to separate traditional and vacuum excavation.
10. **Q:** Has a Geotech Baseline Report been prepared for this project? If so, please provide.
- A:** A Geotechnical Baseline Report was not prepared for this project, only the Geotechnical Data Report included in Appendix of the Project Manual is available.
11. **Q:** Section 31 23 16 – EXCAVATION BACKFILL AND COMPACTION FOR UTILITIES, 1.05 Quality Assurance Tests states that the testing company will be provided by the Owner, but also states that the Contractor will arrange for all in-place moisture or density testing on the project, and also states that the Contractor will have the option to demonstrate acceptable compaction at the start of the project as an alternative to the testing frequency specified. Please clarify if the Owner will provide compaction testing or if it's the Contractor's responsibility to hire a testing agency.
- A:** Owner will provide testing company for compaction tests. Contractor will be required to coordinate and schedule testing with Owner's Representative as Work progresses.
12. **Q:** In Section 33 07 00 – TUNNEL SHAFTS, it is mentioned that a water retaining liner must extend 2 feet above the 50-year flood elevation. Please clarify what type of liner material you are referencing.
- A:** Requirement refers to liner plate, sheet piling, or other shoring used for shaft construction to protect from flood waters entering shaft. Contractor may propose alternative method for providing protection with shop drawings. Requirement revised in this Addendum No. 3 above.
13. **Q:** For some of the remove and replace catch basins there are no existing grades or type of catch basin. Will this information be provided so the correct structures can be manufactured?
- A:** Type of catch basins are unknown to Engineer. Field-verification by Contractor will be required to verify type(s). Existing grades and rim elevations are shown on Drawings.
14. **Q:** Can a combination of stages be used so the work can be done more efficiently? For example, not set up stage 1B but stay in 2A for a longer duration.
- A:** Contractor may submit modified MOT staging plans for review and approval by Owner and City of Naperville as part of shop drawing reviews. The intent of the plan was that Stage 2A would have a relatively short duration for the trenchless operations under 83rd Street. Modified MOT plan and schedule submittals that do not have conflicting detour route signage may be considered for approval.
15. **Q:** Does the owner want any of the asphalt, concrete, and waste dirt?
- A:** No.

16. **Q:** At the tie-in location 75th and Book Road can the existing 34"x54" RCP culvert be salvaged and reused?
- A:** Re-use of existing elliptical RCP culvert can be submitted as Value Engineering proposal. Condition of removed culvert will need to be evaluated and accepted by Owner's Representative during construction and any re-use may be subject to the approval of the authority having jurisdiction.
17. **Q:** Where are the existing valve locations for the tie-ins in 75th?
- A:** Existing valves are located approximately 2,400 ft east and 2,700 ft west of the tie-in area along 75th Street.
18. **Q:** Will the Owner operate all valves?
- A:** Yes, Owner will operate all valves on their water main (i.e. 48-inch pipe). If valve operation is required on smaller (local) distribution mains, Contractor coordination with municipal utility owner will be required.
19. **Q:** Are the working times 7 AM to 7 PM Monday thru Saturday?
- A:** Working times are subject to requirements of Authority Having Jurisdiction (AHJ). The majority of this Project is located in the City of Naperville, which has published work hours of 7 AM to 7 PM Monday through Friday, and 8 AM to 4 PM on Saturdays. Preliminary discussions indicated that extended hours may be allowed for work in non-residential areas but will ultimately be subject to approval of Owner and AHJ.
20. **Q:** Is the completion date going to be pushed back due to Addendum #2 since lead time on the pipe is roughly 16 weeks?
- A:** Completion date will not be pushed back at this time. Discussions with pipe manufacturers have indicated that 48-inch steel pipe can be supplied for 48-inch connections in time for low-demand shutdown period. Owner and Engineer recognize the reduced timeline between Bid Award and start of shutdown window and will prioritize and expedite initial shop drawing reviews related to 48-inch water main connection.
21. **Q:** Boring B-2 shows the asphalt to be a depth of 18". Is this depth of asphalt to be expected over a large area?
- A:** City of Naperville's standard pavement section for Book Road is 12 inches of asphalt. The boring logs show varying depths of asphalt within the project area some more and some less than 12 inches. Roadway Special Provision Section 31 10 00-2 1.04 notes payment limits for PAVEMENT REMOVAL and EARTH EXCAVATION, of which both items may include combinations of asphalt, aggregate and earth.
22. **Q:** Is there any known concrete under the asphalt?
- A:** There is no known concrete pavement under the asphalt pavement on Book Road. City of Naperville's standard pavement section for Book Road is asphalt pavement over aggregate base. None of the borings encountered concrete under the asphalt along Book Road.
23. **Q:** Can topsoil be stockpiled in the RW?
- A:** Topsoil can be stockpiled in right-of-way in areas closed to traffic, provided access is maintained where required by MOT plan. Owner's Representative reserves right to review and modify stockpiling plan.

24. **Q:** Can excess waste material be stockpiled on the RW?
A: See Response to Question No. 23.
25. **Q:** Are both remove and replace mailboxes decorative brick?
A: Yes.
26. **Q:** Is the Owner to provide line and grade stakes?
A: Yes, staking and layout to be provided by Owner.
27. **Q:** Is NDT only needed for the steel casing pipe?
A: Steel casing pipe can be shop tested by either hydrostatic testing or 100% NDT per Subsection 2.06 of Section 33 08 00 – TUNNEL EXCAVATION AND PRIMARY LINER.
28. **Q:** Requested change to Section 33 11 01 – PRESTRESSED CONCRETE CYLINDER PIPE, Subsection 2.02.A.12: Request to change decompression Pressure, P_o , requirement to “equal to, or not less than, 1.4 times the sum of the working pressure, P_w , and the internal surge pressure, P_t .”
A: No change. P_o requirement is Owner standard design requirement.
29. **Q:** Requested change to Section 33 11 01 – PRESTRESSED CONCRETE CYLINDER PIPE, Subsection 2.02.F.3.(b).(2): Request to allow manufacturer to use and wrap Class III wire.
A: No change. Requirement is Owner standard design requirement.
30. **Q:** Section 33 11 01 – PRESTRESSED CONCRETE CYLINDER PIPE and Section 33 11 02 – STEEL PIPE.
- PCCP Subsection 1.04.A.2 states: All welds on fittings, specials, and appurtenances shall be tested and inspected by dye penetrant method. Submit test report to Owner's Representative. Steel Pipe Subsection 1.04.B.2 states: All fittings, specials, and appurtenances shall be hydrostatically tested in accordance with requirements above. Above test could be substituted with nondestructive testing, if approved by Owner's Representative. Submit test reports to Owner's Representative.*
- Knowing PCCP fittings are built in conformance to Section 33 11 02 –STEEL PIPE, the testing for fabricated fittings and specials should match in both specification sections. Please clarify the use of dye penetrant method in the steel pipe specification.
- In Steel Pipe Subsection 1.04.B.2, Hydrostatic testing should be completed on full pipe lengths and dye penetrant testing on all fittings.
- A:** Requirements of both Specifications have been updated to include Non-Destructive (NDT) testing per AWWA C200. Revised Specifications are included in this Addendum No. 3.
31. **Q:** Steel Pipe section: 1.04.D Is the referring to Fabrication or, and field welding. Is Owner to provide all welding inspections?
A: Field welding. Owner will not provide all welding inspections. Owner may, at their discretion, provide welding inspector for independent verification of welds. However, Contractor is responsible for quality and inspection of field welds meeting requirements of AWWA C206.

32. **Q:** What is the tolerance of the ϵ value? Is it a positive or negative tolerance? Can C factor of 140 be used instead of ϵ surface roughness?
- A:** Surface roughness is used to determine the Darcy friction factor for use of the Darcy-Weisbach formula as shown in AWWA M11. Certification that pipe meets a Hazen-Williams coefficient (C) value is acceptable. See revised Section 33 11 03 – STEEL PIPE included with this Addendum for requirements.
33. **Q:** Steel Pipe Section: 1.05.D.1 Can the inspections (CWI) completing the VT be a full-time CWI employee of the Contractor, so long as they are certified by A.W.S.
- A:** Yes.
34. **Q:** Requested change to Section 33 11 02 – STEEL PIPE, Subsection 1.05.D.1: Request to revise to add Contractor to supply field welding reports for reach field-welded joint.
- A:** See Response to Question No. 31.
35. **Q:** Requested change to Section 33 11 02 – STEEL PIPE, Subsection 1.07.C & 1.07.F: Request to add “All pipe dropped shall be repaired in the field or returned to the manufacturer’s plant, if repair is not possible in the field. Field repair to adhere or return to manufacturer’s plan if field repair is not possible.
- A:** No change. Dropped pipe shall be returned to manufacturer’s plant.
36. **Q:** Steel Pipe Section: 1.08B Welders will meet ANSI/ASME BPVC Sect. IX , if so required although AWWA recognizes A.W.S D1.1 so should they not also be certified to that code?
- A:** Welder Qualification Record (WQR) meeting requirements of AWWA C206 will need to be submitted for Contractor’s welders. Manufacturer’s welders shall meet qualification requirements of AWWA C200.
37. **Q:** Requested change to Section 33 11 02 – STEEL PIPE, Subsection 2.02.C.4: Request to modify maximum deflection from 2% to 3% in accordance with AWWA C200.
- A:** No change. Maximum deflection remains 2% per Specification.
38. **Q:** Specification Section 33 11 02 – STEEL PIPE, Subsection 2.02.F: Please allow 0.209-inch nominal steel thickness on the 48-inch buried steel pipe, and 0.235-inch nominal steel thickness on the 54-inch buried steel pipe. Current minimum thickness of 0.250-inch for both diameters exceed requirements for working and transient pressure designs, thus adding significant steel tons to the project with little benefit to the Owner.
- A:** Minimum thickness for buried steel pipe shall be in accordance with AWWA M11 and requirement has been removed from Specification. Revised Specification is included with this Addendum No. 3.
39. **Q:** Requested change to Section 33 11 02 – STEEL PIPE, Subsection 2.02.G.3.c.(2).(d): Request to remove requirement for primed ends.
- A:** No change. Rust-inhibitive primer shall be provided on coating holdback areas.

40. **Q:** Requested change to Section 33 11 02 – STEEL PIPE, Subsection 2.02.G.3.c.(2).(g): Request to reduce requirement to uncover 10 joints for visual inspection of welds to 1-2 joints. Request for same requirement to be included in Section 33 11 01 PRESTRESSED CONCRETE CYLINDER PIPE.
- A:** Specification modified to clarify that uncovering pipe and inspection of joints will be at discretion of Owner's Representative, but requirement remains at up to ten joints. The requirement is for inspection of welding and heat-shrink sleeves, no change to PCCP Specification. Revised Specification is included in this Addendum No. 3.
41. **Q:** Requested change to Section 33 11 03 – STEEL PIPE, Subsection 2.02.G.3.n. Request to remove *"furnished by pipe manufacturer"* from paragraph.
- A:** Revision incorporated into revised Specification included with this Addendum No. 3.
42. **Q:** Requested change to Section 33 11 02 – STEEL PIPE, Subsection 2.03.H.1: Request to clarify AWWA Class D Flange requirements, as Detail Drawings C-526 and C-527 show AWWA Class E Flanges for blind flanges at top of vertical shaft piping.
- A:** Specification modified to clarify that AWWA C207 Class D Flanges are required, unless otherwise shown on Drawings. Detail Drawings on C-526 and C-527 specifically require AWWA Class E flanges due to tapped hole requirements at those locations. AWWA Class D Flanges are acceptable elsewhere. Revised Specification is included in this Addendum No. 3.
43. **Q:** Requested change to Section 33 11 03 – STEEL PIPE, Subsection 3.03.A.3. Request to add *"If a seal cannot be made, the joint should be sealed by welding rolled steel round bar into the flare of the outside of the bell or seal weld the interior of the joint per AWWA C604"*.
- A:** Revision incorporated into revised Specification.
44. **Q:** Section 33 11 03 – STEEL PIPE. What will the allowable leakage be for the pipeline? What will be the difference in the allowable leakage between the push on O-ring joints and lap welded joints?
- A:** During hydrostatic testing, no leakage will be allowed for welded joints. Leakage allowance for rubber gasketed pipe shall be in accordance with AWWA C604. Specification has been updated to include requirements. Revised Specification is included in this Addendum No. 3.
45. **Q:** My landscaper is looking for some clarification on the Erosion Control Seeding Class 1 and Erosion Control Seeding Class 2. The spec doesn't note anything about erosion control blanket, hydro mulch, or straw cover. Do these items need to have a cover? And is this just a temporary application even though Class 1 and Class 2 seeds are technically permanent seeds?
- A:** Seeding is covered in Section 01 45 33-13 and Division 34. Due to relatively short duration of Work in any given area, no interim seeding is required. Seeding indicated is permanent/final restoration seeding. Seeding shall meet requirements of Illinois Urban Manual Code 880, IDOT Standard Spec 250.07, and Division 34. Mulch shall be in accordance with IUM 875 and Division 34.
46. **Q:** Please clarify that the air release and valves are not incidental to item 39.
- A:** Air release and valves are not incidental to Bid Item 39. Include cost under applicable Air Release and Access Manhole, and 48-inch Butterfly Valve bid items.

47. **Q:** Item 39 48-inch Steel Water Main by Open Cut (Book Road Sta 752+60 to 756+64.3) has a quantity of 425 LF but the Item description calls for only 404 LF. Please clarify.
- A:** Additional quantity accounts for 48-inch pipe north of 75th Street trenchless crossing between end of casing and connection to existing 48-inch water main. Pipe installed in shafts but beyond limits of casing is paid as open-cut.
48. **Q:** The stationing for Item 12 48-inch Butterfly Valve with Actuator Manhole and Disinfection Bypass Assembly is shown 752+80 on the plans and 756+07 on Details. Please clarify.
- A:** Station 752+80 is correct location. Revision to sheet included in this Addendum No. 3 above.
49. **Q:** Please clarify if all the steel pipe used for item 47 is incidental to Item 47.
- A:** Yes, steel pipe and fittings used for Bid Item 47 are incidental to that Bid Item.
50. **Q:** Detail for 30-inch and 36-inch Butterfly valve with actuator manhole calls out an Owner-Furnished BFV. The spec for item 50 states to supply the Butterfly valve. Please clarify if the 30-inch BFV for item 50 is owner furnished.
- A:** 30-inch butterfly valve is a Contractor-furnished valve. Revision to sheet included in this Addendum No. 3 above.
51. **Q:** What is the distance needed from pipe springline to the floor of the Chemical vault on plan page C-523? What is the thickness needed for the floor?
- A:** Distance needed from center line of injection quill at pipe springline to floor of Chemical Vault is 4 to 4.5 feet. Thickness of cast-in-place floor is 4 to 6 inches.
52. **Q:** Will it be allowed to work in multiple stages to at the same time to hit the completion date? Many of the trenchless crossing have long durations that will need to be completed to maintain schedule.
- A:** Contractor may submit modified MOT staging plans for review and approval by Owner and City of Naperville as part of shop drawing reviews. Modified MOT plan and schedule submittals that do not have conflicting detour route signage may be considered for approval.
53. **Q:** Will it be allowed to work 24/7 on the trenchless crossings? Once crews start they must work 24/7 to complete the trenchless crossings.
- A:** Yes.

LOCKWOOD ANDREWS &
NEWMAN, INC.



06/23/2025
Expires: 11/30/2025

END OF ADDENDUM NO. 3

00 42 22 BID FORM

PART 1 GENERAL

1.01 SUMMARY

A. See Special Instructions to Bidders.

TW-6/25 SECTION 1					
No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
ALTERNATES TABLE					
A1	54-INCH STEEL WATER MAIN BY OPEN-CUT	LF	14,840		
A2	54-INCH STEEL WATER MAIN BY TRENCHLESS CONSTRUCTION	LF	1,400		
A3	ALTERNATE A SUBTOTAL (A1 + A2)				
B1	54-INCH PCCP WATER MAIN BY OPEN-CUT	LF	14,840		
B2	54-INCH STEEL WATER MAIN BY TRENCHLESS CONSTRUCTION	LF	1,400		
B3	ALTERNATE B SUBTOTAL (B1 + B2)				
C1	48-INCH STEEL WATER MAIN BY OPEN-CUT	LF	14,840		
C2	48-INCH STEEL WATER MAIN BY TRENCHLESS CONSTRUCTION	LF	1,400		
C3	ALTERNATE C SUBTOTAL (C1 + C2)				
D1	48-INCH PCCP WATER MAIN BY OPEN-CUT	LF	14,840		
D2	48-INCH STEEL WATER MAIN BY TRENCHLESS CONSTRUCTION	LF	1,400		
D3	ALTERNATE D SUBTOTAL (D1 + D2)				
BASE BID TABLE					
1	MOBILIZATION	LS	1		
2	TEMPORARY FIELD OFFICE	MNTH	18		
3	16-INCH BUTTERFLY VALVE IN VAULT	EA			

PROPOSAL

TW-6/25 SECTION 1					
No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
4	20-INCH BUTTERFLY VALVE IN VAULT	EA			
5	24-INCH BUTTERFLY VALVE IN VAULT	EA			
6	24-INCH REMOTE OPERATED BUTTERFLY VALVE WITH VAULT	EA			
7	30-INCH BUTTERFLY VALVE WITH ACTUATOR MANHOLE	EA			
8	36-INCH BUTTERFLY VALVE WITH ACTUATOR MANHOLE	EA			
9	36-INCH REMOTE OPERATED BUTTERFLY VALVE WITH VAULT	EA			
10	48-INCH BUTTERFLY VALVE WITH ACTUATOR MANHOLE (75 TH STREET – STA 25+00) (OWNER-FURNISHED VALVE)	LS	1		
11	48-INCH BUTTERFLY VALVE WITH ACTUATOR MANHOLE (75 TH STREET – STA 29+25) (OWNER-FURNISHED VALVE)	LS	1		
12	48-INCH BUTTERFLY VALVE WITH ACTUATOR MANHOLE AND DISINFECTION BYPASS ASSEMBLY (BOOK ROAD) (OWNER-FURNISHED VALVE)	LS	1		
13	54-INCH BUTTERFLY VALVE WITH ACTUATOR MANHOLE (OWNER-FURNISHED VALVE)	EA	2		
14	54-INCH REMOTE OPERATED BUTTERFLY VALVE WITH VAULT (OWNER-FURNISHED VALVE)	EA	1		
15	54-INCH BUTTERFLY VALVE WITH ACTUATOR MANHOLE	EA			
16	54-INCH REMOTE OPERATED BUTTERFLY VALVE WITH VAULT	EA			
17	AIR RELEASE VALVE MANHOLE (24-INCH DIA. AND SMALLER PIPE)	EA			
18	AIR RELEASE AND ACCESS MANHOLE (TYPE 1)	EA	6		

TW-6/25 SECTION 1					
No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
19	AIR RELEASE AND ACCESS MANHOLE (TYPE 2)	EA	8		
20	BLOW-OFF VALVE WITH MANHOLE (30-INCH DIA. AND SMALLER PIPE)	EA			
21	BLOW-OFF VALVE WITH MANHOLE (36-INCH DIA. AND LARGER PIPE)	EA	5		
22	16-INCH DUCTILE IRON WATER MAIN BY OPEN-CUT	LF			
23	16-INCH DUCTILE IRON WATER MAIN BY TRENCHLESS CONSTRUCTION	LF			
24	20-INCH DUCTILE IRON WATER MAIN BY OPEN-CUT	LF			
25	20-INCH DUCTILE IRON WATER MAIN BY TRENCHLESS CONSTRUCTION	LF			
26	24-INCH DUCTILE IRON WATER MAIN BY OPEN-CUT	LF			
27	24-INCH DUCTILE IRON WATER MAIN BY TRENCHLESS CONSTRUCTION	LF			
28	30-INCH DUCTILE IRON WATER MAIN BY OPEN-CUT	LF			
29	36-INCH DUCTILE IRON WATER MAIN BY OPEN-CUT	LF			
30	36-INCH DUCTILE IRON WATER MAIN BY TRENCHLESS CONSTRUCTION	LF			
31	36-INCH PCCP WATER MAIN BY OPEN-CUT	LF			
32	36-INCH PCCP WATER MAIN BY TRENCHLESS CONSTRUCTION	LF			
33	36-INCH STEEL WATER MAIN BY OPEN-CUT	LF			
34	36-INCH STEEL WATER MAIN BY TRENCHLESS CONSTRUCTION	LF			
35	48-INCH PCCP WATER MAIN BY OPEN-CUT	LF			

TW-6/25 SECTION 1					
No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
36	48-INCH PCCP WATER MAIN BY TRENCHLESS CONSTRUCTION	LF			
37	48-INCH STEEL WATER MAIN BY OPEN-CUT	LF			
38	48-INCH STEEL WATER MAIN BY TRENCHLESS CONSTRUCTION	LF			
39	48-INCH STEEL WATER MAIN BY OPEN-CUT (BOOK ROAD STA 752+60.00 TO 756+64.30)	LF	425		
40	48-INCH STEEL WATER MAIN BY TRENCHLESS CONSTRUCTION (BOOK ROAD STA 756+64.30 TO 758+52.24)	LF	188		
41	54-INCH PCCP WATER MAIN BY OPEN-CUT	LF			
42	54-INCH PCCP WATER MAIN BY TRENCHLESS CONSTRUCTION	LF			
43	54-INCH STEEL WATER MAIN BY OPEN-CUT	LF			
44	54-INCH STEEL WATER MAIN BY TRENCHLESS CONSTRUCTION	LF			
45	60-INCH STEEL WATER MAIN BY OPEN-CUT	LF			
46	60-INCH STEEL WATER MAIN BY TRENCHLESS CONSTRUCTION	LF			
47	75 TH STREET CONNECTION TO EXISTING DWC 48-INCH PCCP (STA 25+00)	LS	1		
48	75 TH STREET CONNECTION TO EXISTING DWC 48-INCH PCCP (STA 26+22)	LS	1		
49	75 TH STREET CONNECTION TO EXISTING DWC 48-INCH PCCP (STA 29+25)	LS	1		
50	30-INCH STUB FOR FUTURE CONNECTION	LS	1		
51	REMOVE 36-INCH TEST PLUG AND CONNECT TO 36-INCH WATER MAIN (ADJACENT CONTRACT)	EA			

PROPOSAL

TW-6/25 SECTION 1					
No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
52	REMOVE 54-INCH TEST PLUG AND CONNECT TO 54-INCH WATER MAIN (ADJACENT CONTRACT)	EA	1		
53	TRENCH BACKFILL (SELECT MATERIAL)	CY	39,240		
54	TRENCH BACKFILL (NATIVE MATERIAL)	CY			
55	CATHODIC PROTECTION SYSTEM	LS	1		
56	EARTH EXCAVATION	CY	4,210		
57	AGGREGATE BASE COURSE, TYPE B 2-INCH	SY	760		
58	AGGREGATE BASE COURSE, TYPE B 4-INCH	SY	70		
59	AGGREGATE BASE COURSE, TYPE B 6-INCH	SY	25,100		
60	PORTLAND CEMENT CONCRETE BASE COURSE, 8-INCH	SY			
61	BITUMINOUS MATERIALS (PRIME COAT)	LB	53,000		
62	BITUMINOUS MATERIALS (TACK COAT)	LB	25,220		
63	HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50	TON	13,590		
64	HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N70	TON			
65	HOT-MIX ASPHALT SURFACE COURSE, IL-9.5, MIX D, N50	TON	6,470		
66	HOT-MIX ASPHALT SURFACE COURSE, IL-9.5, MIX D, N70	TON			
67	HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 8-INCH	SY			
68	HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 12-INCH	SY			

PROPOSAL

TW-6/25 SECTION 1					
No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
69	PORTLAND CEMENT CONCRETE PAVEMENT, 12-INCH	SY			
70	PROTECTIVE COAT	SY			
71	PORTLAND CEMENT CONCRETE DRIVEWAY PAVEMENT, 6-INCH	SY			
72	PORTLAND CEMENT CONCRETE DRIVEWAY PAVEMENT, 8-INCH	SY	70		
73	PORTLAND CEMENT CONCRETE SIDEWALK, 5-INCH	SF			
74	PORTLAND CEMENT CONCRETE SIDEWALK, 6-INCH	SF	6,720		
75	DETECTABLE WARNINGS	SF	400		
76	PAVEMENT REMOVAL	SY	24,290		
77	HOT-MIX ASPHALT SURFACE REMOVAL, 1 1/2-INCH	SY			
78	HOT-MIX ASPHALT SURFACE REMOVAL, 1 3/4-INCH	SY	32,470		
79	DRIVEWAY PAVEMENT REMOVAL	SY	430		
80	COMBINATION CURB AND GUTTER REMOVAL	LF	3,630		
81	SIDEWALK REMOVAL	SF	6,590		
82	MEDIAN REMOVAL	SF			
83	COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.12	LF	3,630		
84	COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.18	LF			
85	COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.24	LF			
86	COMBINATION CONCRETE CURB AND GUTTER, TYPE M-4.12	LF			

TW-6/25 SECTION 1					
No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
87	CONCRETE MEDIAN, TYPE SB-6.18	SF			
88	STEEL PLATE BEAM GUARDRAIL, TYPE A, 6-FOOT POSTS	LF	50		
89	LONG-SPAN GUARDRAIL OVER CULVERT, 12-FOOT 6-INCH SPAN	LF	30		
90	TRAFFIC BARRIER TERMINAL, TYPE 1B	EA	2		
91	TRAFFIC BARRIER TERMINAL, TYPE 2	EA	2		
92	GUARDRAIL REMOVAL	LF	160		
93	PAVEMENT MARKING BLACKOUT TAPE, 6-INCH	LF	1,220		
94	CHANGEABLE MESSAGE SIGN	CAL DAY	2,920		
95	SHORT TERM PAVEMENT MARKING	LF	9,190		
96	SHORT TERM PAVEMENT MARKING REMOVAL	SF	3,610		
97	TEMPORARY PAVEMENT MARKING LETTERS AND SYMBOLS – PAINT	SF	190		
98	TEMPORARY PAVEMENT MARKING – LINE 4-INCH – PAINT	LF	23,150		
99	TEMPORARY PAVEMENT MARKING – LINE 6-INCH – PAINT	LF			
100	TEMPORARY PAVEMENT MARKING – LINE 24-INCH – PAINT	LF	100		
101	TEMPORARY PAVEMENT MARKING – LINE 4-INCH – TYPE IV TAPE	LF	6,230		
102	TEMPORARY PAVEMENT MARKING – LINE 6-INCH – TYPE IV TAPE	LF			
103	TEMPORARY CONCRETE BARRIER	LF	2,170		
104	IMPACT ATTENUATORS, TEMPORARY (FULLY REDIRECTIVE, NARROW), TEST LEVEL 2	EA	4		

PROPOSAL

TW-6/25 SECTION 1					
No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
105	RELOCATE SIGN PANEL ASSEMBLY – TYPE A	EA	21		
106	THERMOPLASTIC PAVEMENT MARKING – LETTERS AND SYMBOLS	SF	1,040		
107	THERMOPLASTIC PAVEMENT MARKING – LINE 4-INCH	LF	64,350		
108	THERMOPLASTIC PAVEMENT MARKING – LINE 6-INCH	LF	4,910		
109	THERMOPLASTIC PAVEMENT MARKING – LINE 12-INCH	LF	2,460		
110	THERMOPLASTIC PAVEMENT MARKING – LINE 24-INCH	LF	300		
111	PAVEMENT MARKING REMOVAL – GRINDING	SF	16,010		
112	UNDERGROUND CONDUIT, GALVANIZED STEEL, 2-INCH DIA.	LF	1,380		
113	HANDHOLE	EA	3		
114	MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION	EA	6		
115	ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14, ONE PAIR	LF	820		
116	DRILL EXISTING HANDHOLE	EA	2		
117	DETECTOR LOOP, TYPE I	LF	320		
118	DETECTOR LOOP REPLACEMENT	LF	1,770		
119	TEMPORARY TRAFFIC SIGNAL INSTALLATION	EA	5		
120	MODIFY EXISTING CONTROLLER	EA	6		
121	REBUILD EXISTING HANDHOLE	EA			
122	REMOVE EXISTING HANDHOLE	EA	3		
123	CLASS D PATCHES, 12-INCH	SY	1,630		

PROPOSAL

TW-6/25 SECTION 1					
No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
124	BIKE PATH REMOVAL	SY			
125	MAILBOX REMOVE AND REPLACE	EA	2		
126	FENCE REMOVAL AND REINSTALLATION	LF			
127	TEMPORARY ACCESS (PRIVATE ENTRANCE)	EA	12		
128	TEMPORARY ACCESS (COMMERCIAL ENTRANCE)	EA	2		
129	TEMPORARY ACCESS (ROAD)	EA	10		
130	TRAFFIC CONTROL AND PROTECTION, (SPECIAL)	LS	1		
131	HOT-MIX ASPHALT DRIVEWAY PAVEMENT, 4-INCH	SY	330		
132	HOT-MIX ASPHALT DRIVEWAY PAVEMENT, 10-INCH	SY			
133	DRAINAGE AND UTILITY STRUCTURES TO BE ADJUSTED	EA	10		
134	DRAINAGE AND UTILITY STRUCTURES TO BE RECONSTRUCTED	EA	1		
135	TEMPORARY INFORMATION SIGNING	SF	160		
136	TEMPORARY PAVEMENT	SY	740		
137	TEMPORARY TRAFFIC SIGNAL TIMING	EA	27		
138	HOT-MIX ASPHALT SURFACE REMOVAL – BUTT JOINT	SY	740		
139	TELESCOPING STEEL SIGN SUPPORT	LF	25		
140	METAL POST – TYPE A	LF	25		
141	EROSION CONTROL SEEDING, LAWN MIXTURE (CLASS 1)	LB	830		
142	EROSION CONTROL SEEDING, ROADSIDE MIXTURE (CLASS 2)	LB	660		

TW-6/25 SECTION 1					
No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
143	EROSION CONTROL SEEDING – PASTURE MIXTURE	LB			
144	EROSION CONTROL SEEDING – SPORTS TURF MIXTURE	LB			
145	HIGH VISIBILITY SAFETY FENCE	LF	30,100		
146	TREE AND SHRUBBERY PROTECTION	EA	130		
147	TREE REMOVAL (6- TO 15-UNIT DIAMETER)	EA			
148	TREE REMOVAL (OVER 15-UNIT DIAMETER)	EA			
149	TREE REMOVAL (AREA)	AC			
150	DUAL FENCE BARRIER (HIGH-VISIBILITY GEOTEXTILE OUTER FENCE)	LF	3,830		
151	SILT FENCE	LF	11,000		
152	INLET PROTECTION, CURB	EA	15		
153	INLET PROTECTION, AREA	EA	40		
154	ROLLED EROSION CONTROL PRODUCTS	LF			
155	UTILITY RELOCATION/IMPROVEMENT	EA			
156	REMOVE AND REPLACE COMMUNICATIONS LINE	LF			
157	LIGHT POLE RELOCATION	EA			
158	WATER MAIN RELOCATION	LS			
159	REMOVE AND REPLACE 2-INCH GAS MAIN	LF			
160	REMOVE AND REPLACE 4-INCH GAS MAIN	LF			
161	REMOVE AND REPLACE 6-INCH GAS MAIN	LF			
162	REMOVE AND REPLACE 6-INCH SANITARY SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF			
163	REMOVE AND REPLACE 8-INCH SANITARY SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF	130		

TW-6/25 SECTION 1					
No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
164	REMOVE AND REPLACE 12-INCH SANITARY SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF			
165	REMOVE AND REPLACE 15-INCH SANITARY SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF			
166	REMOVE AND REPLACE 16-INCH SANITARY SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF			
167	REMOVE AND REPLACE 18-INCH SANITARY SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF			
168	REMOVE AND REPLACE 24-INCH SANITARY SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF			
169	REMOVE AND REPLACE 12-INCH FES	EA			
170	REMOVE AND REPLACE 15-INCH FES	EA			
171	REMOVE AND REPLACE 18-INCH FES	EA	1		
172	REMOVE AND REPLACE 24-INCH FES	EA			
173	REPLACE 4-INCH STORM SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF			
174	REPLACE 6-INCH STORM SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF			
175	REPLACE 8-INCH STORM SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF			
176	REPLACE 10-INCH STORM SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF	240		
177	REPLACE 12-INCH STORM SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF	630		
178	REPLACE 15-INCH STORM SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF	160		
179	REPLACE 16-INCH STORM SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF			
180	REPLACE 18-INCH STORM SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF	260		

PROPOSAL

TW-6/25 SECTION 1					
No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
181	REPLACE 20-INCH STORM SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF			
182	REPLACE 24-INCH STORM SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF	270		
183	REPLACE 30-INCH STORM SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF			
184	REPLACE 36-INCH STORM SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF			
185	REPLACE 42-INCH STORM SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF			
186	REMOVE AND REPLACE HEADWALL OF 36-INCH RCP CULVERT	LS			
187	REMOVE AND REPLACE 12-INCH STORM CULVERT WITH 12-INCH CMP CULVERT	LF			
188	REMOVE AND REPLACE 15-INCH STORM CULVERT WITH 15-INCH CMP CULVERT	LF			
189	REMOVE AND REPLACE 24-INCH STORM CULVERT WITH 24-INCH CMP CULVERT	LF			
190	REMOVE AND REPLACE 30-INCH STORM CULVERT WITH 30-INCH CMP CULVERT	LF	60		
191	REMOVE AND REPLACE 48-INCH BY 48-INCH REINFORCED CONCRETE BOX CULVERT	LF			
192	REMOVE AND REPLACE HEADWALL OF 65-INCH BY 65-INCH BOX CULVERT	LS			
193	REMOVE AND REPLACE CATCH BASIN	EA	21		
194	REMOVE AND REPLACE STORM MANHOLE	EA			
195	REMOVE AND REPLACE INLET	EA			
196	CONNECTION TO EXISTING SEWER STRUCTURE	EA	42		
197	REMOVE AND REPLACE DUAL STORM CULVERTS 36-INCH AND HEADWALLS	LS	1		

TW-6/25 SECTION 1					
No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
198	CROSSING EXISTING 58-INCH BY 91-INCH ELLIPTICAL CONCRETE PIPE (BOOK ROAD)	LS	1		
199	STEEL SHEET PILING COFFERDAM	SF			
200	STRUCTURAL LINER FOR WATER MAIN	LF			
201	STRUCTURAL LINER FOR SEWERS	LF			
202	MS 31A METERING STATION (MONTGOMERY 1)	LS			
203	MS 31B METERING STATION (MONTGOMERY 2)	LS			
204	MS 32A METERING STATION (OSWEGO 1)	LS			
205	MS 32B METERING STATION (OSWEGO 2)	LS			
206	MS 32C METERING STATION (OSWEGO 3)	LS			
207	MS 33A METERING STATION (YORKVILLE 1)	LS			
208	MS 33B METERING STATION (YORKVILLE 2)	LS			
209	CHEMICAL FEED BUILDING	LS			
210	VERTICAL DROP STRUCTURES (STA 619+71 AND STA 623+24)	LS	1		
211	VERTICAL DROP STRUCTURES (STA 677+21 AND STA 679+55)	LS	1		
212	VERTICAL DROP STRUCTURES (STA 700+39 AND STA 708+30)	LS	1		
213	VERTICAL DROP STRUCTURES (STA 724+89 AND STA 726+79)	LS	1		

PROPOSAL

TW-6/25 SECTION 1					
No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
IND1	EXPLORATORY EXCAVATION	CF	1,000		
IND2	EXPLORATORY EXCAVATION, VACUUM	EA	12		
IND3	ADJUST WATER SERVICE LINE	LF	100		
IND4	ADJUST SEWER SERVICE LINE	LF	100		
IND5	REMOVE AND REPLACE DRAIN TILE	LS			
ALL1	ALLOWANCE: CITY OF NAPERVILLE DPU-E ELECTRIC SERVICES	LS	1	\$25,000	\$25,000
BB1	BASE BID SUBTOTAL (SUM OF BID PRICE FOR ITEMS 1-213 + IND 1-5 + ALL1)				

Steel Pipe Manufacturer: _____

PCCP Manufacturer: _____

TOTAL BID PRICE TABLE
ALTERNATE A (54-INCH STEEL) TOTAL BID PRICE (A3 +BB1)
TOTAL BID PRICE (\$ Figures)
TOTAL BID PRICE (Words)
ALTERNATE B (54-INCH PCCP) TOTAL BID PRICE (B3 +BB1)
TOTAL BID PRICE (\$ Figures)
TOTAL BID PRICE (Words)
ALTERNATE C (48-INCH STEEL) TOTAL BID PRICE (C3 + BB1)
TOTAL BID PRICE (\$ Figures)
TOTAL BID PRICE (Words)
ALTERNATE D (48-INCH PCCP) TOTAL BID PRICE (D3 +BB1)
TOTAL BID PRICE (\$ Figures)
TOTAL BID PRICE (Words)

PROPOSAL

VALUE ENGINEERING PROPOSAL NO. _____

BIDDER NAME: _____

Item No.	Plan Quantity	Plan Unit Price	Plan Bid Price	Revised Quantity	Revised Unit Price	Revised Bid Price	Deductions/Additions (Plan Bid Price – Revised Bid Price, or Price of New Item)
TOTAL DEDUCTIONS (SUM OF ROWS ABOVE)							\$
TOTAL APPLIED DEDUCTIONS ¹ (50% TOTAL DEDUCTIONS)							\$
ALTERNATE A REVISED TOTAL BID PRICE (A3 + BB1 – 50% TOTAL APPLIED DEDUCTIONS)							\$
ALTERNATE B REVISED TOTAL BID PRICE (B3 + BB1 – 50% TOTAL APPLIED DEDUCTIONS)							\$
ALTERNATE C REVISED TOTAL BID PRICE (C3 + BB1 – 50% TOTAL APPLIED DEDUCTIONS)							\$
ALTERNATE D REVISED TOTAL BID PRICE (D3 + BB1 – 50% TOTAL APPLIED DEDUCTIONS)							\$

1. Total applied deductions calculated in accordance with VE Incentive formula provided in Special Instructions to Bidders. Actual final approved Total Applied Deductions will be calculated based on final Owner's costs, as described in the Special Instructions to Bidders.

Reduction in schedule (calendar days): _____

Description of Value Engineering Proposal (provide attachments or additional pages as necessary):

VALUE ENGINEERING SUMMARY TABLE	
Alternates Total Bid Prices from Total Bid Price Table	
Alternate A Total Bid Price	\$
Alternate B Total Bid Price	\$
Alternate C Total Bid Price	\$
Alternate D Total Bid Price	\$
Value Engineering Proposals 50% Deductions from VE Proposal Table(s), as Applicable	
Value Engineering Proposal #1 Deductions (50% Total)	\$
Value Engineering Proposal #2 Deductions (50% Total)	\$
Value Engineering Proposal #3 Deductions (50% Total)	\$
Value Engineering Proposal #4 Deductions (50% Total)	\$
Value Engineering Proposal #5 Deductions (50% Total)	\$
Value Engineering Proposal #6 Deductions (50% Total)	\$
Value Engineering Proposal #7 Deductions (50% Total)	\$
POTENTIAL TOTAL VALUE ENGINEERING DEDUCTIONS IF ALL VE PROPOSALS ARE APPROVED:	\$
Reduced Total Bid Prices (Total Bid Price – Potential Total VE Deductions)	
Alternate A Reduced Total Bid Price	\$
Alternate B Reduced Total Bid Price	\$
Alternate C Reduced Total Bid Price	\$
Alternate D Reduced Total Bid Price	\$

00 85 00 WIFIA PROGRAM & RELATED REQUIREMENTS

PART 1 GENERAL

1.01 SUMMARY

- A. This Section includes requirements for the Project based on the funding to be used for the Project. Comply with all aspects of the applicable rules and regulations.
- B. If any discrepancies exist between the requirements in this section and any other requirements included anywhere in the Contract Documents, the requirements in this Section 00 85 00 prevail.

1.02 REFERENCES

- A. 2 CFR Part 180 –OMB Guidelines to Agencies on Government-Wide Department and Suspension (Non-procurement).
- B. 2 CFR 200.216 – Prohibition on Certain Telecommunications and Video Surveillance Equipment or Services.
- C. 2 CFR Part 1532 – Non-procurement Debarment and Suspension.
- D. 3 CFR 1966-1970 Comp., p. 684.
- E. 3 CFR 1978 Comp., p. 230.
- F. 28 CFR 35.104 – Rehabilitation Act of 1973, Section 504.
- G. 29 CFR Part 1 –Procedures for Predetermination of Wage Rates.
- H. 29 CFR Part 3 –Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in Part by Loans or Grants from the United States.
- I. 29 CFR Part 5 –Labor Standards Provisions Applicable to Contracts Covering Federally Financed and Assisted Construction (Also Labor Standards Provisions Applicable to Non-construction Contracts Subject to the Contract Work Hours and Safety Standards Act).
- J. 29 CFR Part 6 –Rules of Practice for Administrative Proceedings Enforcing Labor Standards in Federal and Federally Assisted Construction Contracts and Federal Service Contracts.
- K. 29 CFR Part 7 –Practice Before the Administrative Review Board with Regard to Federal and Federally Assisted Construction Contracts.
- L. 29 CFR 5.1 – Davis-Bacon and Related Acts Provisions and Procedures, Purpose and Scope.
- M. 29 CFR 5.5 – Davis-Bacon and Related Acts Provisions and Procedures, Contract Provisions and Related Matters.
- N. 29 CFR 5.12 –Davis-Bacon and Related Acts Provisions and Procedures, Debarment Proceedings.
- O. 29 CFR 5.16 –Davis-Bacon and Related Acts Provisions and Procedures, [Reserved].
- P. 29 CFR 5.30 –Davis-Bacon and Related Acts Provisions and Procedures, Types of Wage Determinations.
- Q. 40 CFR Part 7 –Nondiscrimination in Programs of Activities Receiving Federal Assistance from the Environmental Protection Agency.
- R. 40 CFR Part 34 –New Restrictions on Lobbying.
- S. 40 CFR Part 34.110 – Certification and Disclosure.
- T. 41 CFR Part 60 –Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor.
- U. 41 CFR Part 60-1.8 –Segregated Facilities.

- V. 41 CFR Part 60-3 – Uniform Guidelines on Employee Selection Procedures (1978).
- W. 41 CFR Part 60-4 – Construction Contractors –Affirmative Action Programs.
- X. 41 CFR Part 60-4.2 –Solicitations.
- Y. 41 CFR Part 60-4.3 –Equal Opportunity Clauses.
- Z. 41 CFR Part 60-4.5 –Hometown Plans.
- AA. 41 CFR Part 60-4.8 –Show Cause Notice.
- AB. 18 U.S.C. § 1001 – Statements or Entries Generally
- AC. 29 U.S.C. § 794 –Nondiscrimination under Federal Grants and Programs.
- AD. 31 U.S.C. § 231 –Money and Finance, [Reserved].
- AE. 31 U.S.C. 1352 –Limitation on Use of Appropriated Funds –Influence Certain Federal Contracting and Financial Transactions.
- AF. 33 U.S.C. § 1251 – Federal Water Pollution Control Act Amendments of 1972, Section 13.
- AG. 40 U.S.C. Ch. 37 –Contract Work Hours and Safety Standards.
- AH. 42 U.S.C. 1437 Et Seq. – United States Housing Act of 1937.
- AI. 42 U.S.C. 1471 Et Seq. – United States Housing Act of 1949.
- AJ. 42 U.S.C. 6101 –Statement of Purpose.
- AK. 42 U.S.C. § 2000d Et Seq. – Civil Rights Act of 1964, Title VI.
- AL. 42 U.S.C. § 6101-6107 –Age Discrimination Act of 1975.
- AM. 42 U.S.C. § 7606 – Clean Air Act, Federal Procurement.
- AN. 42 U.S.C. Chapter 80 –Public Works Employment of 1977
- AO. EO 11246, 30 FR 12319 –Equal Employment Opportunity.
- AP. EO 11250, 30 FR 13003 –Administration of the Peace Corps in the Department of State.
- AQ. EO 11914, 41 FR 17871 –Nondiscrimination with Respect to the Handicapped in Federally Assisted Programs.
- AR. EO 12086, 43 FR 46501 –Consolidation of Contract Compliance Functions for Equal Employment Opportunity.
- AS. EO 12549, 51 FR 6370 – Debarment and Suspension.
- AT. EO 13665, 79 FR 20749 –Non-Relatiation for Disclosure of Compensation Information.
- AU. H.R. 5515, P.L. 115-232 –John S. McCain National Defense Authorization Act for Fiscal Year 2019.
- AV. WH-347 –Wage Hour Form.
- AW. WH-1321 – Davis-Bacon Poster.

1.03 ECONOMIC AND MISCELLANEOUS AUTHORITIES

- A. Debarment and Suspension and Prohibitions Relating to Violations of CWA and CAA with Respect to Federal Contracts, Grants, or Loans
 - 1. Debarment and Suspension
 - a. Contractor certifies that he will not knowingly enter into a contract with anyone who is ineligible under the 2 CFR Part 180 and Part 1532 (per Executive Order 12549, 51 FR 6370, February 21, 1986) or who is prohibited under Section 306 of the Clean Air Act or Section 508 of the Clean Water Act to participate in the Project. Suspension and debarment information can be accessed at <http://www.sam.gov>. Contractor represents and

warrants that he has or will include a term or conditions requiring compliance with this provision in all of its subcontracts under this Agreement.

B. New Restrictions on Lobbying

1. Federal Restrictions (31 USC 1352)

- a. Recipients of federal financial assistance may not pay any person for influencing or attempting to influence any officer or employee of a federal agency, a member of Congress, an officer or employee of Congress, or an employee of a member of Congress with respect to the award, continuation, renewal, amendment, or modification of a federal grant, loan, or contract. These requirements are implemented for USEPA in 40 CFR Part 34, which also describes types of activities, such as legislative liaison activities and professional and technical services, which are not subject to this prohibition. Upon award of this contract, Complete and submit to the City the certification and disclosure forms in 40 CFR Part 34, Appendix A and Appendix B. Require all subcontractors and suppliers of any tier awarded a subcontract over \$100,000 to similarly complete and submit the certification and disclosure forms pursuant to the process set forth in 40 CFR 34.110.

1.04 CIVIL RIGHTS, NONDISCRIMINATION, AND EQUAL EMPLOYMENT OPPORTUNITY
AUTHORITIES

A. Age Discrimination Act; Rehabilitation Act, Section 504; Civil Rights Act of 1964, Title VI; and Clean Water Act, Section 13

1. Civil Rights Obligations

- a. Comply with the following federal non-discrimination requirements:
 - 1) Title VI of the Civil Rights Act of 1964, which prohibits discrimination based on race, color, and national origin, including limited English proficiency (LEP). (42 U.S.C 2000D, et. seq)
 - 2) Section 504 of the Rehabilitation Act of 1973, which prohibits discrimination against persons with disabilities. (29 U.S.C. 794, supplemented by EO 11914, 41 FR 17871, April 29, 1976 and EO 11250, 30 FR 13003, October 13, 1965)
 - 3) The Age Discrimination Act of 1975, which prohibits age discrimination. (42 U.S.C 6101 et. Seq)
 - 4) Section 13 of the Federal Water Pollution Control Act Amendments of 1972, which prohibits discrimination on the basis of sex.
 - 5) 40 CFR Part 7, as it relates to the foregoing.

B. Equal Employment Opportunity

1. Equal Employment Opportunity (EEO)

- a. Comply with Department of Labor regulations (41 CFR Part 60).
- b. Contractor's compliance will be based on implementation of the Equal Opportunity Clause, and specific affirmative action obligations required by the Standard Federal Equal Employment Opportunity Construction Contract Specifications, as set forth in 41 CFR Part 60-4.
- c. During the performance of this contract, the contractor agrees as follows:
 - 1) Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action must include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or

other forms of compensation; and selection for training, including apprenticeship. Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the contracting officer setting forth the provisions of this nondiscrimination clause.

- 2) Contractor will, in all solicitations or advancements for employees placed by or on behalf of Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.
- 3) Contractor will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with Contractor's legal duty to furnish information.
- 4) Contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the agency contracting officer, advising the labor union or workers' representative of Contractor's commitments and post copies of the notice in conspicuous places available to employees and applicants for employment.
- 5) Contractor will comply with all provisions of **Department of Labor regulations (41 CFR Part 60)**
- 6) Contractor will furnish all information and reports required by the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the contracting agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
- 7) In the event of Contractor's noncompliance with the nondiscrimination clauses of this contract or with any of such rules, regulations, or orders, this contract may be cancelled, terminated, or suspended in whole or in part and Contractor may be declared ineligible for further Government contracts.
- 8) Contractor will include the provisions of paragraphs (1) through (8) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor so that such provisions will be binding upon each subcontractor or vendor. Contractor will take such action with respect to any subcontract or purchase order as may be directed by the Secretary of Labor as a means of enforcing such provisions including sanctions for noncompliance: Provided, however, that in the event Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction, Contractor may request the United States to enter into such litigation to protect the interests of the United States.

2. Standard Federal Equal Employment Opportunity Construction Contract Specifications (41 CFR 60-4.3)

a. As used in these Specifications:

- 1) "Covered area" means the geographical area described in the solicitation from which this contract resulted;
- 2) "Director" means Director, Office of Federal Contract Compliance Programs, United States Department of Labor, or any person to whom the Director delegates authority;

- 3) "Employer identification number" means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941.
- 4) "Minority" includes:
 - a) Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);
 - b) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race);
 - c) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and
 - d) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).
- b. Whenever Contractor, or any Subcontractor at any tier, subcontracts a portion of the work involving any construction trade, physically include in each subcontract in excess of \$10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.
- c. If Contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) must be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or Subcontractor participating in an approved Plan is individually required to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other Contractors or Subcontractors toward a goal in an approved Plan does not excuse any covered Contractor's or Subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.
- d. Implement the specific affirmative action standards provided in paragraphs 7 a through p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. Covered Construction contractors performing construction work in geographical areas where they do not have a Federal or federally assisted construction contract must apply the minority and female goals established for the geographical area where the work is being performed. Goals are published periodically in the Federal Register in notice form, and such notices may be obtained from any Office of Federal Contract Compliance Programs office or from Federal procurement contracting officers. Contractor is expected to make substantially uniform progress in meeting its goals in each craft during the period specified.
- e. Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom Contractor has a collective bargaining agreement, to refer either minorities or women excuses Contractor's obligations under these specifications or the regulations promulgated pursuant thereto.
- f. In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by Contractor during the training period, and Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs

approved by the U.S. Department of Labor.

- g. Take specific affirmative actions to ensure equal will opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. Document these efforts fully, and implement affirmative action steps at least as extensive as the following:
- 1) Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which Contractor's employees are assigned to work. Contractor, where possible, will assign two or more women to each construction project. Specifically ensure that all foremen, superintendents, and other on-site supervisory personnel are aware of and carry out Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.
 - 2) Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when Contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.
 - 3) Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to Contractor by the union or, if referred, not employed by Contractor, document this in the file with the reason therefor, along with whatever additional actions Contractor may have taken.
 - 4) Provide immediate written notification to Director when the union or unions with which Contractor has a collective bargaining agreement has not referred to Contractor a minority person or woman sent by Contractor, or when Contractor has other information that the union referral process has impeded Contractor's efforts to meet its obligations.
 - 5) Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to Contractor's employment needs, especially those programs funded or approved by the Department of Labor. Provide notice of these programs to the sources compiled under 7b above.
 - 6) Disseminate Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.
 - 7) Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment decisions including specific review of these items with onsite supervisory personnel such as Superintendents, General Foremen, etc., prior to the initiation of construction work at any job site. Make and maintain a written record identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.
 - 8) Disseminate Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing

written notification to and discussing Contractor's EEO policy with other Contractors and Subcontractors with whom Contractor does or anticipates doing business.

- 9) Direct its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, send written notification to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.
 - 10) Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in other areas of Contractor's work force.
 - 11) Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR part 60-3.
 - 12) Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.
 - 13) Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and Contractor's obligations under these specifications are being carried out.
 - 14) Ensure that all facilities and company activities are non-segregated, except that separate or single-user toilet and necessary changing facilities must be provided to assure privacy between the sexes.
 - 15) Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.
 - 16) Conduct a review, at least annually, of all supervisors' adherence to and performance under Contractor's EEO policies and affirmative action obligations.
- h. Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (7a through p). The efforts of a contractor association, joint contractor-union, contractor-community, or other similar group of which Contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under 7a through p of these Specifications provided that Contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in Contractor's minority and female workforce participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of Contractor. The obligation to comply, however, is Contractor's and failure of such a group to fulfill an obligation will not be a defense for Contractor's noncompliance.
- i. A single goal for minorities and a separate single goal for women have been established. Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, Contractor may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner (for example, even though Contractor has achieved its goals for women generally, Contractor may be in violation of the Executive Order if a specific minority group of women is underutilized).
- j. Do not use the goals and timetables or affirmative action standards to discriminate against

any person because of race, color, religion, sex, sexual orientation, gender identity, or national origin.

- k. Do not enter into any Subcontract with any person or firm debarred from Government contracts. .
- l. Carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination and cancellation of existing subcontracts , by the Office of Federal Contract Compliance Programs. Any Contractor who fails to carry out such sanctions and penalties will be in violation of these specifications..
- m. In fulfilling obligations under these specifications, implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If Contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, Director shall proceed in accordance with 41 CFR 60-4.8.
 - n. Designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government and to keep records. Records must at least include for each employee the name, address, telephone numbers, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records must be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors will not be required to maintain separate records.
 - o. Nothing herein provided will be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).
- 3. Segregated Facilities (41 CFR 60-1.8)
 - a. Ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, sexual orientation, gender identity, or national origin cannot result. Contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. Contractor's obligation extends further to ensuring that its employees are not assigned to perform their services at any location, under Contractor's control, where the facilities are segregated. This obligation extends to all contracts containing the equal opportunity clause regardless of the amount of the contract. The term "facilities," as used in this section, means waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, wash rooms, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees; Provided, That separate or single-user restrooms and necessary dressing or sleeping areas must be provided to assure privacy between the sexes.
- 4. Notice of Requirement for Affirmative Action to Ensure Equal Employment Opportunity located at 41 CFR 60-4.2
 - a. Offeror's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Specifications" set forth herein.
 - b. The goals and timetables for minority and female participation, expressed in percentage terms for Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:
 - 1)

Timetables	Goals for minority participation for each trade	Goals for female participation in each trade
	19.6%	6.9%

- c. These goals are applicable to all Contractor's construction work (whether or not it is Federal or federally assisted) performed in the covered area. If Contractor performs construction work in a geographical area located outside of the covered area, apply the goals established for such geographical area where the work is actually performed. With regard to this second area, Contractor also is subject to the goals for both its federally involved and non-federally involved construction.
- d. Contractor's compliance with the Executive Order and the regulations in 41 CFR part 60-4 will be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a), and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting Contractor's goals will be a violation of the contract, the Executive Order and the regulations in 41 CFR part 60-4. Compliance with the goals will be measured against the total work hours performed.
- e. Provide written notification to the Director of the Office of Federal Contract Compliance Programs within 10 working days of award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. List the name, address and telephone number of the subcontractor; employer identification number of the subcontractor; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the subcontract is to be performed in the notification.
- f. As used in this Notice, and in the contract resulting from this solicitation, the "covered area" is DuPage, Kendall, and Will Counties in Illinois.

C. Participation by Disadvantaged Business Enterprises in Procurement Under EPA Financial Assistance Agreements

1. Disadvantaged Business Enterprises (DBE)

- a. Contractor must ensure that the DBE's six good faith efforts are used during the procurement of subcontractors for the Project. The six good faith efforts are found at: [Disadvantaged Business Enterprise Requirements Overview](#)

1.05 AMERICAN IRON AND STEEL (AIS) REQUIREMENT

- A. Contractor acknowledges to and for the benefit of DuPage Water Commission ("Purchaser") and the United States Environmental Protection Agency ("EPA") that it understands the goods and services under this Agreement are being funded with monies made available by the Water Infrastructure Finance and Innovation Act program of the EPA that has statutory requirements commonly known as "American Iron and Steel" that requires all of the iron and steel products used in the project to be produced in the United States ("American Iron and Steel Requirement") including iron and steel products provided by Contractor pursuant to this Agreement. Contractor hereby represents, warrants and covenants to and for the benefit of the Purchaser and the EPA that
 1. Contractor has reviewed and understands the American Iron and Steel Requirement,
 2. All of the iron and steel products used in the project will be and/or have been produced in the United States in a manner that complies with the American Iron and Steel Requirement, unless a waiver of the requirement is approved, and (c)

3. Contractor will provide any further verified information, certification or assurance of compliance with this paragraph, or information necessary to support a waiver of the American Iron and Steel Requirement, as may be requested by the Purchaser or the EPA.
- B. Notwithstanding any other provision of this Agreement, any failure to comply with this paragraph by Contractor permits Purchaser or the EPA to recover as damages against Contractor any loss, expense, or cost (including without limitation attorney's fees) incurred by the Purchaser or the EPA resulting from any such failure (including without limitation any impairment or loss of funding, whether in whole or in part, from the EPA or any damages owed to the EPA by the Purchaser). While Contractor has no direct contractual privity with the EPA, as a lender to Purchaser for the funding of its project, Purchaser and Contractor agree that the EPA is a third-party beneficiary and neither this paragraph (nor any other provision of this Agreement necessary to give this paragraph force or effect) will be amended or waived without the prior written consent of the EPA.

1.06 LABOR LAWS AND STANDARDS

A. Compliance with Davis-Bacon and Related Acts

1. In any contract in excess of \$2,000 which is entered into for the actual construction, alteration and/or repair, including painting and decorating, of a public building or public work, or building or work financed in whole or in part from Federal funds or in accordance with guarantees of a Federal agency or financed from funds obtained by pledge of any contract of a Federal agency to make a loan, grant or annual contribution (except where a different meaning is expressly indicated), and which is subject to the labor standards provisions of any of the acts listed in 29 C.F.R. § 5.1, the following clauses (or any modifications thereof to meet the particular needs of the agency, provided that such modifications are first approved by the Department of Labor):

a. Minimum Wages

- 1) All laborers and mechanics employed or working upon the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between Contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (a)(1)(iv) of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics must be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in § 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph (a)(1)(ii) of this section) and the Davis-Bacon poster (WH-1321) must be posted at all times by Contractor and his subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

2)

- a) The WIFIA assistance recipient, DuPage Water Commission, on behalf of the U.S. Environmental Protection Agency (EPA), requires that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract will be classified in conformance with the wage determination. The WIFIA assistance recipient must approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:
 - i. The work to be performed by the classification requested is not performed by a classification in the wage determination; and
 - ii. The classification is utilized in the area by the construction industry; and
 - iii. The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.
 - b) If Contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the WIFIA assistance recipient agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken will be sent to the Administrator of the Wage and Hour Division (WHD Administrator), U.S. Department of Labor, Washington, DC 20210. The WHD Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the WIFIA assistance recipient or will notify the WIFIA assistance recipient within the 30- day period that additional time is necessary.
 - c) In the event Contractor, the laborers or mechanics to be employed in the classification or their representatives, and the WIFIA assistance recipient do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the WIFIA assistance recipient will refer the questions, including the views of all interested parties and the recommendation of the WIFIA assistance recipient, to the WHD Administrator for determination. The WHD Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the WIFIA assistance recipient or will notify the WIFIA assistance recipient within the 30-day period that additional time is necessary.
 - d) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs (a)(1)(ii) (B) or (C) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.
- 3) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, either pay the benefit as stated in the wage determination or pay another bona fide fringe benefit or an hourly cash equivalent thereof.
- 4) If Contractor does not make payments to a trustee or other third person, Contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, provided that the Secretary of Labor has found, upon the written request of Contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require Contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.
- b. Withholding. DuPage Water Commission, upon written request of the WIFIA Director or an authorized representative of the Department of Labor, will withhold or cause to be withheld

from Contractor under this contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by Contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), all or part of the wages required by the contract, the WIFIA Director may, after written notice to Contractor, Sponsor, Applicant, or Owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

c. Payrolls and basic records.

1) Payrolls and basic records relating thereto must be maintained by Contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work (or under the United States Housing Act of 1937, or under the Housing Act of 1949, in the construction or development of the project). Such records will contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. When employing apprentices or trainees under approved programs, maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

2)

a) Submit weekly, for each week in which any contract work is performed, a copy of all payrolls to DuPage Water Commission. The payrolls submitted must set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses will not be included on weekly transmittals. Instead, the payrolls only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division web site at <https://www.dol.gov/agencies/whd/forms/wh347> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors must maintain the full social security number and current address of each covered worker, and provide them upon request to DWC, for transmission to the EPA, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to DWC.

- b) Each payroll submitted must be accompanied by a "Statement of Compliance," signed by Contractor or Subcontractor, or his or her agent who pays or supervises the payment of the persons employed under the contract, and certify the following:
 - i. That the payroll for the payroll period contains the information required to be provided under § 5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under § 5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;
 - ii. That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;
 - iii. That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.
 - c) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 satisfies the requirement for submission of the "Statement of Compliance" required by paragraph (a)(3)(ii)(B) of this section.
 - d) The falsification of any of the above certifications may subject Contractor or Subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.
 - 3) Make the records required under paragraph (a)(3)(i) of this section available for inspection, copying, or transcription by authorized representatives of DuPage Water Commission, EPA, or the Department of Labor, and permit such representatives to interview employees during working hours on the job. If Contractor or Subcontractor fails to submit the required records or to make them available, the EPA may, after written notice to the DuPage Water Commission, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.
- d. Apprentices and Trainees
- 1) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification must not be greater than the ratio permitted to Contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, must be paid not less than the applicable wage rate on the wage determination for

the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program must be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in Contractor's or Subcontractor's registered program must be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices must be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the WHD Administrator determines that a different practice prevails for the applicable apprentice classification, fringes must be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

- 2) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site must not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees must be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees must be paid the full amount of fringe benefits listed on the wage determination unless the WHD Administrator determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration must be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program must be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, Contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.
 - 3) Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part must be in conformity with the equal employment opportunity requirements.
- e. Compliance with Copeland Act requirements. Comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.
 - f. Subcontracts. Insert, in any subcontracts, the clauses contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as the EPA may by appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance of any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

- g. Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.
 - h. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.
 - i. Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract will not be subject to the general disputes clause of this contract. Such disputes will be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between Contractor (or any of his Subcontractors) and DuPage Water Commission, EPA, the U.S. Department of Labor, or the employees or their representatives.
 - j. Certification of eligibility.
 - 1) By entering into this contract, Contractor certifies that neither he nor any person or firm who has an interest in Contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).
 - 2) No part of this contract may be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).
 - 3) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.
2. Contract Work Hours and Safety Standards Act.
- a. The following clauses set forth in paragraphs (b)(1), (2), (3), and (4) of this section must be inserted in full in any contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by § 5.5(a) or § 4.6 of part 4 of this title. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.
 - 1) Overtime requirements. No Contractor or Subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics will require or permit any such laborer or mechanic in any workweek in which he is employed on such work to work in excess of forty hours in such workweek, unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.
 - 2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (b)(1) of this section, Contractor and any Subcontractor responsible therefor will be liable for the unpaid wages. In addition, such Contractor and Subcontractor will be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages will be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (b)(1) of this section, in the sum of \$25 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (b)(1) of this section.
 - 3) Withholding for unpaid wages and liquidated damages. The DuPage Water Commission, upon its own action or upon written request of an authorized representative of the Department of Labor, or the EPA, will withhold or cause to be

withheld, from any moneys payable on account of work performed by Contractor or Subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such Contractor or Subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (b)(2) of this section.

- 4) Subcontracts. Insert, in any subcontracts, the clauses set forth in paragraph (b)(1) through (4) of this section and also a clause requiring the Subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (b)(1) through (4) of this section.
3. In addition to the clauses contained in paragraph (b), in any contract subject only to the Contract Work Hours and Safety Standards Act and not to any of the other statutes cited in § 5.1, maintain payrolls and basic payroll records during the course of the work and preserve them for a period of three years from the completion of the contract for all laborers and mechanics, including guards and watchmen, working on the contract. Such records must contain the name and address of each such employee, social security number, correct classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. Further, the EPA will cause or require the DuPage Water Commission to insert in any such contract a clause providing that the records to be maintained under this paragraph shall be made available by Contractor or Subcontractor for inspection, copying, or transcription by authorized representatives of the DuPage Water Commission, EPA and the Department of Labor, and Contractor or Subcontractor will permit such representatives to interview employees during working hours on the job.

1.07 LATEST UPDATES ON FEDERAL REQUIREMENTS

- A. Prohibition on Certain Telecommunications and Video Surveillance Services or Equipment (Effective August 13, 2020)
 1. The John S. McCain National Defense Authorization Act for Fiscal Year 2019 (P.L. 115- 232), at Section 889, prohibits EPA financial assistance recipients, including WIFIA borrowers, from expending loan funds to procure or obtain; extend or renew a contract to procure or obtain; or enter into a contract (or extend or renew a contract) to procure or obtain equipment, services, or systems that use covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system. As described in the Act, "covered telecommunications equipment or services" means:
 - a. Telecommunications equipment produced by Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliate of such entities).
 - b. For the purpose of public safety, security of government facilities, physical security surveillance of critical infrastructure, and other national security purposes, video surveillance and telecommunications equipment produced by Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company (or any subsidiary or affiliate of such entities).
 - c. Telecommunications or video surveillance services provided by such entities or using such equipment.
 - d. Telecommunications or video surveillance equipment or services produced or provided by an entity that the Secretary of Defense, in consultation with the Director of the National Intelligence or the Director of the Federal Bureau of Investigation, reasonably believes to be an entity owned or controlled by, or otherwise connected to, the government of a covered foreign country.
 2. This Act does not prohibit:

- a. Procuring with an entity to provide a service that connects the facilities of a third-party, such as backhaul, roaming, or interconnection arrangements.
- b. Telecommunications equipment that cannot route or redirect user data traffic or permit visibility into any user data or packets that such equipment transmits or otherwise handles.

END OF SECTION

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01 22 00 UNIT PRICES

PART 1 - GENERAL

1.01 SUMMARY

- A. This Section includes the following requirements:
 - 1. Items of Work described herein are specifically listed in Agreement for separate measurement and payment.
 - 2. No other items of Work required by Contract Documents shall be measured or paid for as a separate item, but shall be included as part of listed Unit Price item to which Work pertains. Failure to list all such related Work in the following descriptions of Unit Price items shall not invalidate this stipulation.
 - 3. Measure Unit Price quantities for payment and submit to Owner's Representative.

1.02 REFERENCES

- A. IDOT Standard Specifications for Road and Bridge Construction 2022, as modified by IDOT Supplemental Specifications and Recurring Special Provisions 2025.

1.03 DESCRIPTION OF UNIT PRICE ITEMS

- A. The following paragraphs describe measurement and payment for items of work to be completed under each Unit Price item listed in Schedule of Prices. Each item includes all associated costs.

Bid Item No. A1: 54-Inch Steel Water Main by Open-Cut (LF)

- 1. Payment will be made per horizontal linear foot of installed 54-inch steel water main.
- 2. Payment includes all labor, equipment, and materials necessary for complete in-place installation of water main in open-cut trenches as shown on Drawings and in accordance with Specifications herein.
 - a. Includes excavation, trench safety, dewatering, bedding, pipe embedment, pipe fittings, appurtenances, butt straps, restrained joints, thrust blocks, buried warning/locating tape, test plugs/caps, hydrostatic testing, disinfection, support of existing utilities, and associated miscellaneous materials and work required. Includes removal, transport, and disposal of excess excavated material.
- 3. Measurement will be taken horizontally along centerline of water main installed, with no deductions for fittings or valves.

Bid Item No. A2: 54-Inch Steel Water Main by Trenchless Construction (LF)

- 1. Payment will be made per horizontal linear foot of trenchless construction.

2. Payment includes all labor, equipment, and materials necessary for complete in-place installation of water main and casing pipe/liner plate by trenchless construction as shown on Drawings and in accordance with Specifications herein.
 - a. Includes all related work such as construction of launch/receiving shafts ground support systems, dewatering activities, steel casing pipe or liner plate installation, CLSM backfill, trench backfill, instrumentation and monitoring, and restoration. Includes removal, transport, and disposal of excess excavated material.
 - b. Includes installation of steel water main in casing/liner plate and associated casing spacers, guide rails, invert, end seals/bulkheads, grouting, hydrostatic testing, disinfection, and associated miscellaneous materials and work required.
 - c. No separate payment will be made for trenchless construction exceeding length shown on Drawings, unless proposed modifications are submitted for review as part of Contractor's shop drawing submittals and accepted by Owner's Representative.
 - d. Payment for water main through shaft areas that do not require vertical drop structures will be made as part of associated open-cut bid item.
3. Measurement will be taken horizontally along centerline of steel casing/liner plate installed.

Bid Item No. B1: 54-Inch PCCP Water Main by Open-Cut (LF)

1. Payment will be made per horizontal linear foot of installed 54-inch PCCP water main.
2. Payment includes all labor, equipment, and materials necessary for complete in-place installation of water main in open-cut trenches as shown on Drawings and in accordance with Specifications herein.
 - a. Includes excavation, trench safety, dewatering, bedding, pipe embedment, pipe fittings, shorts, bevel adapters, appurtenances, closures, restrained joints, thrust blocks, buried warning/locating tape, test plugs/caps, hydrostatic testing, disinfection, support of existing utilities, and associated miscellaneous materials and work required. Includes removal, transport, and disposal of excess excavated material.
3. Measurement will be taken horizontally along centerline of water main installed, with no deductions for fittings or valves.

Bid Item No. B2: 54-Inch Steel Water Main by Trenchless Construction (LF)

1. See Bid Item No. A2 above for description.

Bid Item No. C1: 48-Inch Steel Water Main by Open-Cut (LF)

1. Payment will be made per horizontal linear foot of installed 48-inch steel water main.

2. Payment includes all labor, equipment, and materials necessary for complete in-place installation of water main in open-cut trenches as shown on Drawings and in accordance with Specifications herein.
 - a. Includes excavation, trench safety, dewatering, bedding, pipe embedment, pipe fittings, appurtenances, butt straps, restrained joints, thrust blocks, buried warning/locating tape, test plugs/caps, hydrostatic testing, disinfection, support of existing utilities, and associated miscellaneous materials and work required. Includes removal, transport, and disposal of excess excavated material.
3. Measurement will be taken horizontally along centerline of water main installed, with no deductions for fittings or valves.

Bid Item No. C2: 48-Inch Steel Water Main by Trenchless Construction (LF)

1. Payment will be made per horizontal linear foot of trenchless construction.
2. Payment includes all labor, equipment, and materials necessary for complete in-place installation of water main and casing pipe/liner plate by trenchless construction as shown on Drawings and in accordance with Specifications herein.
 - a. Includes all related work such as construction of launch/receiving shafts ground support systems, dewatering activities, steel casing pipe or liner plate installation, CLSM backfill, trench backfill, instrumentation and monitoring, and restoration. Includes removal, transport, and disposal of excess excavated material.
 - b. Includes installation of steel water main in casing/liner plate and associated casing spacers, guide rails, inverters, end seals/bulkheads, grouting, hydrostatic testing, disinfection, and associated miscellaneous materials and work required.
 - c. No separate payment will be made for trenchless construction exceeding length shown on Drawings, unless proposed modifications are submitted for review as part of Contractor's shop drawing submittals and accepted by Owner's Representative.
 - d. Payment for water main through shaft areas that do not require vertical drop structures will be made as part of associated open-cut bid item.
3. Measurement will be taken horizontally along centerline of steel casing/liner plate installed.

Bid Item No. D1: 48-Inch PCCP Water Main by Open-Cut (LF)

1. Payment will be made per horizontal linear foot of installed 48-inch PCCP water main.
2. Payment includes all labor, equipment, and materials necessary for complete in-place installation of water main in open-cut trenches as shown on Drawings and in accordance with Specifications herein.
 - a. Includes excavation, trench safety, dewatering, bedding, pipe embedment, pipe fittings, shorts, bevel adapters, appurtenances, closures, restrained joints, thrust blocks, buried warning/locating tape, test plugs/caps, hydrostatic testing, disinfection, support of existing utilities, and associated miscellaneous materials and work required. Includes removal, transport, and disposal of excess excavated material.
3. Measurement will be taken horizontally along centerline of water main installed, with no deductions for fittings or valves.

Bid Item No. D2: 48-Inch Steel Water Main by Trenchless Construction (LF)

1. See Bid Item No. C2 above for description.

Bid Item No. 1: Mobilization (LS)

1. Measurement and payment in lump sum for mobilization.
2. Payment limited to six percent of Total Bid Price.
3. Preparatory work and operations necessary for movement of personnel, equipment, supplies, and incidentals to Project Site for establishment of offices, buildings, and other facilities necessary for Work on Project, and for all other work or operations which must be performed, or costs incurred when beginning Project Work.

Bid Item No. 2: Temporary Field Office (MNTH)

1. Measurement and payment per month that temporary field office is supplied.
2. Mobile units or temporary buildings with potable water, sanitary facilities, electrical power, and parking facilities for use of Owner's Representative in administering Contract. Field office shall be situated in or near Work area at a location approved by Owner's Representative and Authority Having Jurisdiction, adjacent to Contractor's field office.

Bid Item No. 10: 48-Inch Butterfly Valve with Actuator Manhole (75th Street – STA 25+00) (Owner-Furnished Valve) (LS)

1. Payment will be made on a lump sum basis.
2. Payment includes all labor, equipment, and materials necessary for complete in place installation of 48-inch butterfly valve with actuator manhole as shown on Drawings and in accordance with Specifications herein.
3. Includes excavation, trench safety, support of existing utilities, dewatering, bedding, CLSM pipe embedment, pipe fittings, valves, appurtenances, pipe supports, structural concrete, precast manhole, sump pump with piping, and associated miscellaneous materials and work required. Includes removal, transport, and disposal of excess excavated material.
4. Includes installation of Owner-furnished 48-inch butterfly valve and manual actuator.
5. Includes Contractor-furnished and installed Limitorque L120 electric actuator.
6. Includes copper lines, fittings, valves and pressure transducer assemblies.
7. Includes all associated electrical equipment and improvements, telemetry antenna, Valmont steel pole, mast pole foundation, and SCADA controls.

Bid Item No. 11: 48-Inch Butterfly Valve with Actuator Manhole (75th Street – STA 29+25) (Owner-Furnished Valve) (LS)

1. Payment will be made on a lump sum basis.
2. Payment includes all labor, equipment, and materials necessary for complete in place installation of 48-inch butterfly valve with actuator manhole as shown on Drawings and in accordance with Specifications herein.
3. Includes excavation, trench safety, support of existing utilities, dewatering, bedding, CLSM pipe embedment, pipe fittings, valves, appurtenances, pipe supports, cast in-place structural concrete, precast manhole, sump pump with piping, and associated miscellaneous materials and work required. Includes removal, transport, and disposal of excess excavated material.

4. Includes installation of Owner-furnished 48-inch butterfly valve and manual actuator.
5. Includes Contractor-furnished and installed Limatorque L120 electric actuator.
6. Includes copper lines, fittings, valves and pressure transducer assemblies.
7. Includes all associated electrical equipment and improvements, telemetry antenna, Valmont steel pole, mast pole foundation, and SCADA controls.

Bid Item No. 12: 48-Inch Butterfly Valve with Actuator Manhole and Disinfection Bypass Assembly (Book Road) (Owner-Furnished Valve) (LS)

1. Payment will be made on a lump sum basis.
2. Payment includes all labor, equipment, and materials necessary for complete in place installation of 48-inch butterfly valve with actuator manhole, chemical vault, and disinfection bypass assembly as shown on Drawings and in accordance with Specifications herein.
3. Includes excavation, trench safety, support of existing utilities, dewatering, bedding, CLSM pipe embedment, pipe fittings, valves, appurtenances, pipe supports, cast-in-place structural concrete, two (2) precast manholes, and associated miscellaneous materials and work required. Includes removal, transport, and disposal of excess excavated material.
4. Includes installation of Owner-furnished 48-inch butterfly valve and actuator.
5. Includes injection quill assembly.

Bid Item No. 13: 54-Inch Butterfly Valve with Actuator Manhole (Owner-Furnished Valve) (EA)

1. Payment will be made for each valve with manhole installed.
2. Payment includes all labor, equipment, and materials necessary for complete in-place installation of 54-inch butterfly valve with actuator manhole as shown on Drawings and in accordance with Specifications herein.
3. Includes excavation, trench safety, support of existing utilities, dewatering, bedding, CLSM pipe embedment, pipe fittings, valves, appurtenances, pipe supports, cast-in-place structural concrete, precast manhole, and associated miscellaneous materials and work required. Includes removal, transport, and disposal of excess excavated material.
4. Includes installation of Owner-furnished 54-inch butterfly valve and manual actuator.

Bid Item No. 14: 54-Inch Remote Operated Butterfly Valve with Vault (Owner-Furnished Valve) (EA)

1. Payment will be made for each remote operated valve with vault installed.
2. Payment includes all labor, equipment, and materials necessary for complete in-place installation of 54-inch butterfly valve with actuator manhole as shown on Drawings and in accordance with Specifications herein.
3. Includes excavation, trench safety, support of existing utilities, dewatering, bedding, CLSM pipe embedment, pipe fittings, dismantling joint, valves, appurtenances, pipe supports, cast-in-place structural concrete, precast manhole, sump pump with piping, and associated miscellaneous materials and work required. Includes removal, transport, and disposal of excess excavated material.

4. Includes installation of Owner-furnished 54-inch butterfly valve and manual actuator.
5. Includes Contractor-furnished and installed Limitorque L120 electric actuator.
6. Includes copper lines, fittings, valves and pressure transducer assemblies.
7. Includes all associated electrical equipment and improvements, telemetry antenna, Valmont steel pole, mast pole foundation, and SCADA controls.

Bid Item No. 18: Air Release and Access Manhole (Type 1) (EA)

1. Payment will be made for each Type 1 air release & access manhole installed.
2. Payment includes all labor, equipment, and materials necessary for complete in-place installation of Type 1 air release and access manhole as shown on Drawings and in accordance with Specifications herein.
3. Includes excavation, trench safety, support of existing utilities, dewatering, bedding, concrete fill pipe encasement, pipe fittings, valves, appurtenances, precast manhole, and associated miscellaneous materials and work required. Includes removal, transport, and disposal of excess excavated material.

Bid Item No. 19: Air Release and Access Manhole (Type 2) (EA)

1. Payment will be made for each Type 2 air release & access manhole installed.
2. Payment includes all labor, equipment, and materials necessary for complete in-place installation of Type 2 air release and access manhole as shown on Drawings and in accordance with Specifications herein.
3. Includes excavation, trench safety, support of existing utilities, dewatering, bedding, concrete fill pipe encasement, pipe fittings, valves, appurtenances, precast manhole, and associated miscellaneous materials and work required. Includes removal, transport, and disposal of excess excavated material.

Bid Item No. 21: Blow-Off Valve with Manhole (36-Inch Dia. And Larger Pipe) (EA)

1. Payment will be made for each blow-off valve with manhole installed.
2. Payment includes all labor, equipment, and materials necessary for complete in-place installation of blow-off valve with manhole as shown on Drawings and in accordance with Specifications herein.
3. Includes excavation, trench safety, support of existing utilities, dewatering, bedding, CLSM pipe embedment, pipe fittings, valves, appurtenances, precast manhole, and associated miscellaneous materials and work required. Includes removal, transport, and disposal of excess excavated material.

**Bid Item No. 39: 48-Inch Steel Water Main by Open-Cut
(Book Road STA 752+60.00 to 756+64.30) (LF)**

1. Payment will be made per horizontal linear foot of installed 48-inch steel water main.
2. Payment includes all labor, equipment, and materials necessary for complete in-place installation of water main in open-cut trenches as shown on Drawings and in accordance with Specifications herein.
3. Includes excavation, trench safety, dewatering, bedding, pipe embedment, pipe fittings, appurtenances, butt straps, restrained joints, thrust blocks, buried warning/locating tape, test plugs/caps, hydrostatic testing, disinfection, support of existing utilities, and associated miscellaneous materials and work required. Includes removal, transport, and disposal of excess excavated material.

4. Measurement will be taken horizontally along centerline of water main installed, with no deductions for fittings or valves.

Bid Item No. 40: 48-Inch Steel Water Main by Trenchless Construction
(Book Road STA 756+64.30 to 758+52.24) (LF)

1. Payment will be made per horizontal linear foot of trenchless construction.
2. Payment includes all labor, equipment, and materials necessary for complete in-place installation of water main and casing pipe/liner plate by trenchless construction as shown on Drawings and in accordance with Specifications herein.
3. Includes all related work such as construction of launch/receiving shafts ground support systems, dewatering activities, steel casing pipe or liner plate installation, CLSM backfill, trench backfill, instrumentation and monitoring, and restoration. Includes removal, transport, and disposal of excess excavated material.
4. Includes installation of steel water main in casing/liner plate and associated casing spacers, guide rails, inverts, end seals/bulkheads, grouting, hydrostatic testing, disinfection, and associated miscellaneous materials and work required.
5. No separate payment will be made for trenchless construction exceeding length shown on Drawings, unless proposed modifications are submitted for review as part of Contractor's shop drawing submittals and accepted by Owner's Representative.
6. Payment for water main through shaft areas that do not require vertical drop structures will be made as part of associated open-cut bid item.
7. Measurement will be taken horizontally along centerline of steel casing/liner plate installed.

Bid Item No. 47: 75th Street Connection to Existing DWC 48-Inch PCCP
(STA 25+00) (LS)

1. Payment will be made on a lump sum basis.
2. Payment includes all labor, equipment, and materials necessary for complete in-place installation of steel water main connection to existing 48-inch PCCP line in open-cut trench as shown on Drawings and in accordance with Specifications herein.
3. Includes excavation, trench safety, dewatering, bedding, CLSM pipe embedment, pipe fittings, appurtenances, butt straps, PCCP bell/spigot adapters, restrained joints, thrust blocks, buried warning/locating tape, test plugs/caps, hydrostatic testing, disinfection, support of existing utilities, and associated miscellaneous materials and work required. Includes removal, transport, and disposal of excess excavated material. See Section 01 11 00 – SUMMARY OF WORK for phasing and schedule requirements.
4. Includes installation of 48-inch steel water main pipe and fittings.
5. Includes cutting and removal of existing 48-inch PCCP water main, connections to 48-inch PCCP, as well as repair of cement mortar lining on remaining pipe damaged during removal.

Bid Item No. 48: 75th Street Connection to Existing DWC 48-Inch PCCP (STA 26+22) (LS)

1. Payment will be made on a lump sum basis.

2. Payment includes all labor, equipment, and materials necessary for complete in-place installation of steel water main connection to existing 48-inch PCCP line in open-cut trench as shown on Drawings and in accordance with Specifications herein.
3. Includes excavation, trench safety, dewatering, bedding, CLSM pipe embedment, pipe fittings, appurtenances, butt straps, PCCP bell/spigot adapters, restrained joints, thrust blocks, buried warning/locating tape, test plugs/caps, hydrostatic testing, disinfection, support of existing utilities, and associated miscellaneous materials and work required. Includes removal, transport, and disposal of excess excavated material. See Section 01 11 00 – SUMMARY OF WORK for phasing and schedule requirements.
4. Includes installation of 48-inch steel water main pipe and fittings.
5. Includes cutting and removal of existing 48-inch PCCP water main, connections to 48-inch PCCP, as well as repair of cement mortar lining on remaining pipe damaged during removal.

Bid Item No. 49: 75th Street Connection to Existing DWC 48-Inch PCCP (STA 29+25) (LS)

1. Payment will be made on a lump sum basis.
2. Payment includes all labor, equipment, and materials necessary for complete in-place installation of steel water main connection to existing 48-inch PCCP line in open-cut trench as shown on Drawings and in accordance with Specifications herein.
3. Includes excavation, trench safety, dewatering, bedding, CLSM pipe embedment, pipe fittings, appurtenances, butt straps, PCCP bell/spigot adapters, restrained joints, thrust blocks, buried warning/locating tape, test plugs/caps, hydrostatic testing, disinfection, support of existing utilities, and associated miscellaneous materials and work required. Includes removal, transport, and disposal of excess excavated material. See Section 01 11 00 – SUMMARY OF WORK for phasing and schedule requirements.
4. Includes installation of 48-inch cement mortar coated steel water main pipe and fittings.
5. Includes cutting and removal of existing 48-inch PCCP water main, connections to 48-inch PCCP, as well as repair of cement mortar lining on remaining pipe damaged during removal.
6. Includes cutting, removal, and replacement of existing 34-inch x 53-inch elliptical RCP storm culvert, connections to existing culvert, bypass pumping (as required), CLSM embedment, and regrading of storm ditches.

Bid Item No. 50: 30-Inch Stub for Future Connection (LS)

1. Measurement and payment by lump sum per installed 30-inch stub for future connection.

2. Includes 30-inch pipe (ductile iron pipe, steel pipe, or prestressed concrete cylinder pipe at Contractor's option) installed in open-cut trench, connection to reducer on main water line, 30-inch butterfly valve with actuator manhole, and 30-inch dished head plug at location shown in Drawings. All materials (including fittings and joint restraint), labor, equipment, excavation, sheeting, shoring, dewatering, bedding, backfill, compaction, pipe embedment, utility repair, welding, testing, disinfection, polyethylene encasement (if DI pipe is selected), gaskets, underground warning tape, restrained mechanical joints, valve with operator, associated joint restraints inside vault, restrained joints on water main bell, spigot slip joints external to valve vault, valve vault with frame and lid, steps, appurtenances shown in Detail, and associated miscellaneous materials and work required to furnish and install 30-inch stub for future connection.
3. Trench backfill and compaction above pipe embedment is also included as shown on Drawings. Does not include reducer. Includes removal, transporting, and disposal of excess excavated material.

Bid Item No. 52: Remove 54-Inch Test Plug and Connect to 54-Inch Water Main (Adjacent Contract) (EA)

1. Payment will be made for each test plug removed with water main connection.
2. Payment includes all labor, equipment, and materials necessary for test plug removal and connection as shown on Drawings and in accordance with Specifications herein.
3. Includes pipe fittings, appurtenances, dewatering of adjacent pipe, repair of damaged linings, connection to water main on adjacent contract, disinfection, hydrostatic testing of connection, and associated miscellaneous materials and work required.
4. No separate payment for removal of intermediate test plugs used on this Contract for hydrostatic testing.

Bid Item No. 53: Trench Backfill (Select Material) (CY)

1. Payment will be made per cubic yard of trench backfill placed.
2. Payment includes all labor, equipment, and materials necessary for complete placement and compaction of trench backfill above pipe embedment zone as shown on Drawings and in accordance with Specifications herein.
3. Includes compacted IDOT CA-6, FA-6, or CLSM material and removal, transport, and disposal of excess excavated material.
4. Measurement will be subject to maximum trench width for payment shown on Drawings.

Bid Item No. 55: Cathodic Protection System (LS)

1. Payment will be made on a lump sum basis.
2. Payment includes all labor, equipment, materials, and supervision for the installation of the cathodic protection system, complete in-place, including sacrificial anodes, test stations, junction boxes, power feed hookups, excavation, backfill, field welding, connections, adjustments, testing, commissioning, cleanup, and other related work necessary for construction as shown on Drawings and in accordance with Specifications herein.

Bid Item No. 56: Earth Excavation (CY)

1. Measurement and payment per cubic yard of earth excavated.

2. Work under this item to be completed according to IDOT Section 202. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 57: Aggregate Base Course, Type B 2-Inch (SY)

1. Measurement and payment per square yard of aggregate base course, Type B, 2-inch applied.
2. Work under this item to be completed according to IDOT Section 351. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 58: Aggregate Base Course, Type B 4-Inch (SY)

1. Measurement and payment per square yard of aggregate base course, Type B, 4-inch applied.
2. Work under this item to be completed according to IDOT Section 351. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 59: Aggregate Base Course, Type B 6-Inch (SY)

1. Measurement and payment per square yard of aggregate base course, Type B, 6-inch applied.
2. Work under this item to be completed according to IDOT Section 351. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 61: Bituminous Materials (Prime Coat) (LB)

1. Measurement and payment per pound of bituminous materials, prime coat, applied.
2. Work under this item to be completed according to IDOT Section 406.

Bid Item No. 62: Bituminous Materials (Tack Coat) (LB)

1. Measurement and payment per pound of bituminous materials, tack coat, applied.
2. Work under this item to be completed according to IDOT Section 406.

Bid Item No. 63: Hot-Mix Asphalt Binder Course, IL-19.0, N50 (TON)

1. Measurement and payment per ton of hot-mix asphalt binder course applied.
2. Work under this item to be completed according to IDOT Section 406. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 65: Hot-Mix Asphalt Surface Course, IL-9.5, Mix D, N50 (TON)

1. Measurement and payment per ton of hot-mix asphalt surface course applied.
2. Work under this item to be completed according to IDOT Section 406. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 72: Portland Cement Concrete Driveway Pavement, 8-Inch (SY)

1. Measurement and payment per square yard of driveway pavement installed.

2. Work under this item to be completed according to IDOT Section 423. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 74: Portland Cement Concrete Sidewalk, 6-Inch (SF)

1. Measurement and payment per square foot of sidewalk installed.
2. Work under this item to be completed according to IDOT Section 424. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 75: Detectable Warnings (SF)

1. Measurement and payment per square foot of detectable warnings installed.
2. Work under this item to be completed according to IDOT Section 424. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 76: Pavement Removal (SY)

1. Measurement and payment per square yard of pavement removal.
2. Work under this item to be completed according to IDOT Section 440. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 78: Hot-Mix Asphalt Surface Removal, 1 3/4-Inch (SY)

1. Measurement and payment per square yard of asphalt surface removal.
2. Work under this item to be completed according to IDOT Section 440. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 79: Driveway Pavement Removal (SY)

1. Measurement and payment per square yard of driveway pavement removal.
2. Work under this item to be completed according to IDOT Section 440. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 80: Combination Curb and Gutter Removal (LF)

1. Measurement and payment per foot of combination curb and gutter removal.
2. Work under this item to be completed according to IDOT Section 440. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 81: Sidewalk Removal (SF)

1. Measurement and payment per square foot of sidewalk removal.
2. Work under this item to be completed according to IDOT Section 440. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 83: Combination Concrete Curb and Gutter, Type B-6.12 (LF)

1. Measurement and payment per foot of combination curb and gutter installed.
2. Work under this item to be completed according to IDOT Section 606. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 88: Steel Plate Beam Guardrail, Type A, 6-Foot Posts (LF)

1. Measurement and payment per foot of guardrail installed.
2. Work under this item to be completed according to IDOT Section 630.

Bid Item No. 89: Long-Span Guardrail over Culvert, 12-Foot 6-Inch Span (LF)

1. Measurement and payment per foot of guardrail installed.
2. Work under this item to be completed according to IDOT Section 630.

Bid Item No. 90: Traffic Barrier Terminal, Type 1B (EA)

1. Measurement and payment per each traffic barrier terminal, Type 1B installed.
2. Work under this item to be completed according to IDOT Section 631.

Bid Item No. 91: Traffic Barrier Terminal, Type 2 (EA)

1. Measurement and payment per each traffic barrier terminal, Type 2 installed.
2. Work under this item to be completed according to IDOT Section 631.

Bid Item No. 92: Guardrail Removal (LF)

1. Measurement and payment per foot of guardrail removed.
2. Work under this item to be completed according to IDOT Section 632.

Bid Item No. 93: Pavement Marking Blackout Tape, 6-Inch (LF)

1. Measurement and payment per foot of 6-inch pavement marking tape applied
2. Work under this item to be completed according to IDOT Section 701. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 94: Changeable Message Sign (CAL DAY)

1. Measurement and payment per calendar day changeable message sign is supplied.
2. Work under this item to be completed according to IDOT Section 701.

Bid Item No. 95: Short Term Pavement Marking (LF)

1. Measurement and payment per foot of short term pavement marking applied.
2. Work under this item to be completed according to IDOT Section 703. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 96: Short Term Pavement Marking Removal (SF)

1. Measurement and payment per square foot of short term pavement marking removal.
2. Work under this item to be completed according to IDOT Section 703. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 97: Temporary Pavement Marking Letters and Symbols – Paint (SF)

1. Measurement and payment per square foot of pavement marking applied.
2. Work under this item to be completed according to IDOT Section 703.

Bid Item No. 98: Temporary Pavement Marking – Line 4-Inch – Paint (LF)

1. Measurement and payment per foot of pavement marking applied.

2. Work under this item to be completed according to IDOT Section 703.

Bid Item No. 100: Temporary Pavement Marking – Line 24-Inch – Paint (LF)

1. Measurement and payment per foot of pavement marking applied.
2. Work under this item to be completed according to IDOT Section 703.

Bid Item No. 101: Temporary Pavement Marking – Line 4-Inch – Type IV Tape (LF)

1. Measurement and payment per foot of pavement marking applied
2. Work under this item to be completed according to IDOT Section 703. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 103: Temporary Concrete Barrier (LF)

1. Measurement and payment per foot temporary concrete barrier placed.
2. Work under this item to be completed according to IDOT Section 704. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 104: Impact Attenuators, Temporary (Fully Redirective, Narrow),
Test Level 2 (EA)

1. Measurement and payment per each impact attenuator placed.
2. Work under this item to be completed according to IDOT Section 706.

Bid Item No. 105: Relocate Sign Panel Assembly – Type A (EA)

1. Measurement and payment per each sign panel relocated.
2. Work under this item to be completed according to IDOT Section 724. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 106: Thermoplastic Pavement Marking - Letters and Symbols (SF)

1. Measurement and payment per square foot of thermoplastic pavement marking applied.
2. Work under this item to be completed according to IDOT Section 780.

Bid Item No. 107: Thermoplastic Pavement Marking – Line 4-Inch (LF)

1. Measurement and payment per foot of thermoplastic pavement marking applied.
2. Work under this item to be completed according to IDOT Section 780.

Bid Item No. 108: Thermoplastic Pavement Marking – Line 6-Inch (LF)

1. Measurement and payment per foot of thermoplastic pavement marking applied.
2. Work under this item to be completed according to IDOT Section 780.

Bid Item No. 109: Thermoplastic Pavement Marking – Line 12-Inch (LF)

1. Measurement and payment per foot of thermoplastic pavement marking applied.
2. Work under this item to be completed according to IDOT Section 780.

Bid Item No. 110: Thermoplastic Pavement Marking – Line 24-Inch (LF)

1. Measurement and payment per foot of thermoplastic pavement marking applied.
2. Work under this item to be completed according to IDOT Section 780.

Bid Item No. 111: Pavement Marking Removal –Grinding (SF)

1. Measurement and payment per square foot of pavement marking removal.
2. Work under this item to be completed according to IDOT Section 783.

Bid Item No. 112: Underground Conduit, Galvanized Steel, 2-Inch Dia. (LF)

1. Measurement and payment per foot of underground conduit installed.
2. Work under this item to be completed according to IDOT Section 810. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 113: Handhole (EA)

1. Measurement and payment per each handhole installed.
2. Work under this item to be completed according to IDOT Section 814. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 114: Maintenance of Existing Traffic Signal Installation (EA)

1. Measurement and payment per each maintenance of existing traffic signal installation.
2. Work under this item to be completed according to IDOT Section 850. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 115: Electric Cable in Conduit, Lead-In, No. 14, One Pair (LF)

1. Measurement and payment per foot of cable in conduit installed.
2. Work under this item to be completed according to IDOT Section 873. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 116: Drill Existing Handhole (EA)

1. Measurement and payment per each existing handhole drilled.
2. Work under this item to be completed according to IDOT Section 879.

Bid Item No. 117: Detector Loop, Type 1 (LF)

1. Measurement and payment per foot of detector loop Type 1 installed.
2. Work under this item to be completed according to IDOT Section 886. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 118: Detector Loop Replacement (LF)

1. Measurement and payment per foot of detector loop replacement.
2. Work under this item to be completed according to IDOT Section 886. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 119: Temporary Traffic Signal Installation (EA)

1. Measurement and payment per each temporary traffic signal installation.
2. Work under this item to be completed according to IDOT Section 890. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 120: Modify Existing Controller (EA)

1. Measurement and payment per each Existing Controller modified.
2. Work under this item to be completed according to IDOT Section 895. See full requirements as specified in Division 34, General Civil Special Provisions.

Bid Item No. 122: Remove Existing Handhole (EA)

1. Measurement and payment per each existing handhole removed.
2. Work under this item to be completed according to IDOT Section 895.

Bid Item No. 123: Class D Patches, 12-Inch (SY)

1. Measurement and payment per square yard of Class D patches installed.
2. Work under this item to be completed according to IDOT Section 442. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 125: Mailbox Remove and Replace (EA)

1. Measurement and payment per each mailbox removed and replaced.
2. Work under this item to be completed according to IDOT Section 107. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 127: Temporary Access (Private Entrance) (EA)

1. Measurement and payment per each private entrance with temporary access.
2. Work under this item to be completed according to IDOT Section 402. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 128: Temporary Access (Commercial Entrance) (EA)

1. Measurement and payment per each commercial entrance with temporary access.
2. Work under this item to be completed according to IDOT Section 402. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 129: Temporary Access (Road) (EA)

1. Measurement and payment per each road with temporary access.
2. Work under this item to be completed according to IDOT Section 402. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 130: Traffic Control and Protection, (Special) (LS)

1. Measurement and payment by lump sum for traffic control and protection.
2. Work under this item to be completed according to IDOT Section 701. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 131: Hot-Mix Asphalt Driveway Pavement, 4-Inch (SY)

1. Measurement and payment per square yard of driveway pavement installed.

2. Work under this item to be completed according to IDOT Section 406. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 133: Drainage and Utility Structures to be Adjusted (EA)

1. Measurement and payment per each adjusted drainage and utility structure.
2. Work under this item to be completed according to IDOT Section 602. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 134: Drainage and Utility Structures to be Reconstructed (EA)

1. Measurement and payment per each reconstructed drainage and utility structure.
2. Work under this item to be completed according to IDOT Section 602. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 135: Temporary Information Signing (SF)

1. Measurement and payment per square foot of temporary information signing.
2. Work under this item to be completed according to IDOT Sections 701 and 720. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 136: Temporary Pavement (SY)

1. Measurement and payment per square yard of temporary pavement.
2. Work under this item to be completed according to IDOT Sections 355, 356, 406, and 440. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 137: Temporary Traffic Signal Timing (EA)

1. Measurement and payment per each temporary traffic signal timing.
2. Work under this item to be completed according to IDOT Section 701. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 138: Hot-Mix Asphalt Surface Removal –Butt Joint (SY)

1. Measurement and payment per square yard of butt joint surface removal.
2. Work under this item to be completed according to IDOT Section 406.

Bid Item No. 139: Telescoping Steel Sign Support (LF)

1. Measurement and payment per foot of sign support.
2. Work under this item to be completed according to IDOT Section 728. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 140: Metal Post – Type A (LF)

1. Measurement and payment per foot of Type A metal post installed.
2. Work under this item to be completed according to IDOT Section 729. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 141: Erosion Control Seeding, Lawn Mixture (Class 1) (LB)

1. Payment per pound of seed placed as required by area.
2. Measurement per area shown on Drawings, measured by Contractor survey On-site.
3. Material, equipment, labor, and associated miscellaneous work required for installation and removal (if necessary) of temporary erosion control seeding as shown on Drawings. See full requirements as specified in Section 01 45 33-13 – STORM WATER POLLUTION PREVENTION PLAN.

Bid Item No. 142: Erosion Control Seeding, Roadside Mixture (Class 2) (LB)

1. Payment per pound of seed placed as required by area.
2. Measurement per area shown on Drawings, measured by Contractor On-site.
3. Material, equipment, labor, and associated miscellaneous work required for installation and removal (if necessary) of temporary erosion control seeding as shown on Drawings. See full requirements as specified in 01 45 33-13 – STORM WATER POLLUTION PREVENTION PLAN.

Bid Item No. 145: High Visibility Safety Fence (LF)

1. Measurement and payment per foot of safety fence placed as shown on Drawings, measured by Contractor on Site.
2. Material, equipment, labor, and associated miscellaneous work required for installation of temporary fence as shown on Drawings. See full requirements as specified in 01 45 33-13 – STORM WATER POLLUTION PREVENTION PLAN.

Bid Item No. 146: Tree and Shrubbery Protection (EA)

1. Measurement and payment per each tree trunk protection installed.
2. Material, equipment, labor, and associated miscellaneous work required for installation and removal of tree trunk protection as shown on Drawings. See full requirements as specified in 01 45 33-13 – STORM WATER POLLUTION PREVENTION PLAN.

Bid Item No. 150: Dual Fence Barrier (High-Visibility Geotextile Outer Fence) (LF)

1. Measurement and payment per foot of dual fence placed as shown on Drawings, measured by Contractor on Site.
2. Material, equipment, labor, and associated miscellaneous work required for installation of dual layer silt fence in accordance with DuPage County Stormwater Ordinance Article VII. See full requirements as specified in 01 45 33-13 – STORM WATER POLLUTION PREVENTION PLAN.

Bid Item No. 151: Silt Fence (LF)

1. Measurement and payment per foot of dual fence placed as shown on Drawings, measured by Contractor on Site.
2. Material, equipment, labor, and associated miscellaneous work required for installation of silt fence in accordance with DuPage County Stormwater Ordinance Article VII. See full requirements as specified in 01 45 33-13 – STORM WATER POLLUTION PREVENTION PLAN.

Bid Item No. 152: Inlet Protection, Curb (EA)

1. Measurement and payment per each curb inlet protected.
2. Material, equipment, labor, and miscellaneous work required for installation of curb inlet protection for stormwater inlets located in existing curb and gutter. See full requirements as specified in 01 45 33-13 – STORM WATER POLLUTION PREVENTION PLAN.

Bid Item No. 153: Inlet Protection, Area (EA)

1. Measurement and payment per each inlet protected.
2. Material, equipment, labor, and miscellaneous work required for installation of inlet protection for stormwater inlets not located in existing curb and gutter. See full requirements as specified in 01 45 33-13 – STORM WATER POLLUTION PREVENTION PLAN.

Bid Item No. 163: Remove and Replace 8-Inch Sanitary Sewer (with AWWA C900 DR 25 PVC Pipe) (LF)

1. Measurement and payment per foot of installed 8-inch sanitary sewer. Length will be measured along centerline of pipe with no deduction for manholes. Sewer connections to existing sewer structures will be paid for under Bid Item No. 192.
2. Material, labor, excavation, sheeting, shoring, dewatering, bedding, backfill, compaction, utility repair, testing, and associated miscellaneous work required to remove existing sanitary sewer and furnish and install replacement water main quality sanitary sewer of same size. Includes removal, transporting, and disposal of removed sewer material and excess excavated material, piping and pumping for bypassing sewage flow as necessary to maintain service, and connections to existing sewer piping, including adaptors and couplings as necessary to connect to existing.

Bid Item No. 171: Remove and Replace 18-Inch FES (EA)

1. Measurement and payment per each flared end section (FES) removed and replaced.
2. Material, labor, excavation, sheeting, shoring, dewatering, bedding, trench backfill, compaction, and associated miscellaneous work required to remove flared end section and furnish and install replacement flared end section to match existing conditions. Includes removal, transporting, and disposal of removed flared end section material and excess excavated material.

Bid Item No. 176: Replace 10-Inch Storm sewer (with AWWA C900 DR 25 PVC Pipe) (LF)

1. Measurement and payment per foot of installed 10-inch storm sewer. Length will be measured along centerline of pipe with no deduction for manholes. Sewer connections to existing sewer structures will be paid for under Connection to Existing Structure.
2. Material, labor, excavation, sheeting, shoring, dewatering, bedding, backfill, compaction, utility repair, testing, and associated miscellaneous work required to remove existing storm sewer and furnish and install replacement water main quality storm sewer of same size. Includes removal, transporting, and disposal of removed sewer material and excess excavated material, piping and pumping for bypassing sewage flow as necessary to maintain service, and connections to existing sewer piping, including adaptors and couplings as necessary to connect to existing.

Bid Item No. 177: Replace 12-Inch Storm Sewer (with AWWA C900 DR 25 PVC Pipe) (LF)

1. Measurement and payment per foot of installed 12-inch storm sewer. Length will be measured along centerline of pipe with no deduction for manholes. Sewer connections to existing sewer structures will be paid for under Connection to Existing Structure.
2. Material, labor, excavation, sheeting, shoring, dewatering, bedding, backfill, compaction, utility repair, testing, and associated miscellaneous work required to remove existing storm sewer and furnish and install replacement water main quality storm sewer of same size. Includes removal, transporting, and disposal of removed sewer material and excess excavated material, piping and pumping for bypassing sewage flow as necessary to maintain service, and connections to existing sewer piping, including adaptors and couplings as necessary to connect to existing.

Bid Item No. 178: Replace 15-Inch Storm Sewer (with AWWA C900 DR 25 PVC Pipe) (LF)

1. Measurement and payment per foot of installed 15-inch storm sewer. Length will be measured along centerline of pipe with no deduction for manholes. Sewer connections to existing sewer structures will be paid for under Connection to Existing Structure.
2. Material, labor, excavation, sheeting, shoring, dewatering, bedding, backfill, compaction, utility repair, testing, and associated miscellaneous work required to remove existing storm sewer and furnish and install replacement water main quality storm sewer of same size. Includes removal, transporting, and disposal of removed sewer material and excess excavated material, piping and pumping for bypassing sewage flow as necessary to maintain service, and connections to existing sewer piping, including adaptors and couplings as necessary to connect to existing.

Bid Item No. 180: Replace 18-Inch Storm Sewer (with AWWA C900 DR 25 PVC Pipe) (LF)

1. Measurement and payment per foot of installed 18-inch storm sewer. Length will be measured along centerline of pipe with no deduction for manholes. Sewer connections to existing sewer structures will be paid for under Connection to Existing Structure.
2. Material, labor, excavation, sheeting, shoring, dewatering, bedding, backfill, compaction, utility repair, testing, and associated miscellaneous work required to remove existing storm sewer and furnish and install replacement water main quality storm sewer of same size. Includes removal, transporting, and disposal of removed sewer material and excess excavated material, piping and pumping for bypassing sewage flow as necessary to maintain service, and connections to existing sewer piping, including adaptors and couplings as necessary to connect to existing.

Bid Item No. 182: Replace 24-Inch Storm Sewer (with AWWA C900 DR 25 PVC Pipe) (LF)

1. Measurement and payment per foot of installed 24-inch storm sewer. Length will be measured along centerline of pipe with no deduction for manholes. Sewer connections to existing sewer structures will be paid for under Connection to Existing Structure.

2. Material, labor, excavation, sheeting, shoring, dewatering, bedding, backfill, compaction, utility repair, testing, and associated miscellaneous work required to remove existing storm sewer and furnish and install replacement water main quality storm sewer of same size. Includes removal, transporting, and disposal of removed sewer material and excess excavated material, piping and pumping for bypassing sewage flow as necessary to maintain service, and connections to existing sewer piping, including adaptors and couplings as necessary to connect to existing.

Bid Item No. 190: Remove and Replace 30-Inch Storm Culvert with 30-Inch CMP Culvert (LF)

1. Measurement and payment per foot of installed culvert. Length will be measured along centerline of pipe.
2. Material, labor, excavation, sheeting, shoring, dewatering, bedding, trench backfill, compaction, utility repair, testing, and associated miscellaneous work required to furnish and install replacement storm culvert of class, type, and size specified. Includes removal, transporting, and disposal of excess excavated material.

Bid Item No. 193: Remove and Replace Catch Basin (EA)

1. Measurement and payment per each catch basin replaced.
2. Material, labor, excavation, sheeting, shoring, dewatering, bedding, backfill, compaction, utility repair, testing, and associated miscellaneous work required to remove existing catch basin and furnish and install replacement catch basin and frame and grate, to match existing conditions, including adaptors, couplings, and boots as necessary to connect to existing. Includes removal, transporting, and disposal of removed catch basin material and excess excavated material.

Bid Item No. 196: Connection to Existing Sewer Structure (EA)

1. Measurement and payment per each connection to existing structure.
2. Material, labor, excavation, sheeting, shoring, dewatering, bedding, backfill, compaction, utility repair, testing, and associated miscellaneous work required to furnish and install connection to existing structure at locations as shown on Drawings including adaptors, couplings, watertight boots, concrete collars, and waterstops as necessary to connect to existing. Includes removal, transporting, and disposal of excess excavated material.

Bid Item No. 197: Remove and Replace Dual Storm Culverts 36-Inch and Headwalls (LS)

1. Measurement and payment by lump sum for the culverts and headwalls removal and replacement.
2. Material, labor, excavation, sheeting, shoring, dewatering, bedding, trench backfill, compaction, utility repair, testing, replacement of concrete headwalls, riprap, and associated miscellaneous work required to remove existing culvert and furnish and install replacement storm culvert of class, type, and size specified. Includes removal, transporting, and disposal of excess excavated material.

Bid Item No. 198: Crossing Existing 58-Inch by 91-Inch Elliptical Concrete Pipe (Book Road) (LS)

1. Measurement and payment by lump sum for completed crossing.

2. All material, equipment, labor, and associated miscellaneous materials and work required to furnish and install 54-inch water main under an existing crossing existing 58- by 91-inch elliptical concrete pipe. Labor and materials required will vary based on the option selected for the crossing, but could include 84-inch steel casing, replacement elliptical O-ring gasket RCP, or structural liner for the elliptical pipe, additional excavation, sheeting, shoring, dewatering, bedding, backfill, compaction, and all associated miscellaneous materials and labor. This item does not include the cost of the 54-inch water main pipe or associated items paid under 54-Inch Water Main by Open Cut Bid Item description of chosen material. Includes removal, transporting, and disposal of excess excavated material.

Bid Item No. 210: Vertical Drop Structures (STA 619+71 and STA 623+24) (LS)

1. Payment will be made on a lump sum basis.
2. Payment includes all labor, equipment, and materials necessary for complete in-place installation of water main vertical drop piping within two trenchless shafts (launch and receiving) as shown on Drawings and in accordance with Specifications herein.
3. Includes all related work such as vertical steel pipe, tees, fittings, appurtenances, butt straps, dished head plug, concrete fill, pipe support foundation, thrust blocks, fall protection, hydrostatic testing, disinfection, and associated miscellaneous materials and work required.
4. Includes blind flange, flanged outlet, gate valve, appurtenances, and precast concrete access structure.
5. Payment for pipe beyond the end of the tee branch and outside of trenchless liner will be made as part of associated open-cut bid items.

Bid Item No. 211: Vertical Drop Structures (STA 677+21 and STA 679+55) (LS)

1. Payment will be made on a lump sum basis.
2. Payment includes all labor, equipment, and materials necessary for complete in-place installation of water main vertical drop piping within two trenchless shafts (launch and receiving) as shown on Drawings and in accordance with Specifications herein.
3. Includes all related work such as vertical steel pipe, tees, fittings, appurtenances, butt straps, dished head plug, concrete fill, pipe support foundation, thrust blocks, fall protection, hydrostatic testing, disinfection, and associated miscellaneous materials and work required.
4. Includes blind flange, flanged outlet, gate valve, appurtenances, and precast concrete access structure.
5. Payment for pipe beyond the end of the tee branch and outside of trenchless liner will be made as part of associated open-cut bid items.

Bid Item No. 212: Vertical Drop Structures (STA 700+39 and STA 708+30) (LS)

1. Payment will be made on a lump sum basis.
2. Payment includes all labor, equipment, and materials necessary for complete in-place installation of water main vertical drop piping within two trenchless shafts (launch and receiving) as shown on Drawings and in accordance with Specifications herein.

3. Includes all related work such as vertical steel pipe, tees, fittings, appurtenances, butt straps, dished head plug, concrete fill, pipe support foundation, thrust blocks, fall protection, hydrostatic testing, disinfection, and associated miscellaneous materials and work required.
4. Includes blind flange, flanged outlet, gate valve, appurtenances, and precast concrete access structure.
5. Payment for pipe beyond the end of the tee branch and outside of trenchless liner will be made as part of associated open-cut bid items.

Bid Item No. 213: Vertical Drop Structures (STA 724+89 and STA 726+79) (LS)

1. Payment will be made on a lump sum basis.
2. Payment includes all labor, equipment, and materials necessary for complete in-place installation of water main vertical drop piping within two trenchless shafts (launch and receiving) as shown on Drawings and in accordance with Specifications herein.
3. Includes all related work such as vertical steel pipe, tees, fittings, appurtenances, butt straps, dished head plug, concrete fill, pipe support foundation, thrust blocks, fall protection, hydrostatic testing, disinfection, and associated miscellaneous materials and work required.
4. Includes blind flange, flanged outlet, gate valve, appurtenances, and precast concrete access structure.
5. Payment for pipe beyond the end of the tee branch and outside of trenchless liner will be made as part of associated open-cut bid items.

Bid Item No. IND1: Exploratory Excavation (CF)

1. Measurement and payment per cubic foot of exploratory excavation.
2. Material, labor, excavation, sheeting, shoring, dewatering, backfill, compaction, utility repair, and associated miscellaneous work required to excavate for underground investigation by traditional excavation means or vacuum excavation, as directed by Owner's Representative. Includes removal, transporting, and disposal of excavated material.

Bid Item No. IND2: Exploratory Excavation, Vacuum (EA)

1. Measurement and payment for each vacuum exploratory excavation.
2. Material, labor, excavation, sheeting, shoring, dewatering, backfill, compaction, utility repair, and associated miscellaneous work required to excavate for underground investigation by vacuum excavation, as directed by Owner's Representative. Includes removal, transporting, and disposal of excavated material.

Bid Item No. IND3: Adjust Water Service Line (LF)

1. Measurement and payment per linear foot of water service line adjusted. Length will be measured along centerline of pipe.
2. Material, labor, excavation, sheeting, shoring, dewatering, bedding, backfill, compaction, utility repair, testing, disinfection, pipe, fittings, couplings, connections to remaining existing service line, and additional miscellaneous work required to adjust water service line, as directed by Owner's Representative. Includes removal, transporting, and disposal of excess excavated material.

Bid Item No. IND4: Adjust Sewer Service Line (LF)

1. Measurement and payment per linear foot of sewer service line adjusted. Length will be measured along centerline of pipe.
2. Material, labor, excavation, sheeting, shoring, dewatering, bedding, backfill, compaction, utility repair, testing, disinfection, pipe, fittings, couplings, connections to remaining existing service line, and additional miscellaneous work required to adjust sewer service line, as directed by Owner's Representative. Includes removal, transporting, and disposal of excess excavated material.

Bid Item No. ALL1: Allowance: City of Naperville DPU-E Electric Services

1. Allowance for payment to City of Naperville DPU-E for providing new 100A electrical services to:
 - a. Two Contractor-furnished and installed free standing meter pedestals at Book Road and 75th Street intersection.
 - b. One Contractor-furnished and installed panel mounted meter along Book Road (STA 602+46).
 - 1) City of Naperville to furnish and install 25kVA transformer (120/240V, 1P) at this location.
2. Allowance is for City of Naperville charges for electrical service only. Payment for all other Contractor-furnished materials, labor, and equipment and overhead/profit shall be made under applicable remote operated valve bid items.
3. Any unused portion of allowance will be credited back to Owner. Any additional cost shall be reimbursed to Contractor by Final Change Order.

PART 2 - P R O D U C T S

NOT USED

PART 3 - E X E C U T I O N

NOT USED

END OF SECTION

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13 47 13 CATHODIC PROTECTION FOR PIPELINES

PART 1 - GENERAL

1.01 SUMMARY

- A. This Section includes requirements for the following:
 - 1. Sacrificial anode cathodic protection on steel, ductile iron, and concrete cylinder pipes, and metallic fittings in plastic pipe systems using zinc and/or magnesium anodes.

1.02 RELATED WORK

- A. Section 01 22 00 – UNIT PRICES
- B. Section 01 33 00 – SUBMITTAL PROCEDURES
- C. Section 01 70 00 – EXECUTION AND CLOSEOUT REQUIREMENTS
- D. Section 33 11 01 – PRESTRESSED CONCRETE CYLINDER PIPE
- E. Section 33 11 02 – STEEL PIPE
- F. Section 33 11 03 – DUCTILE IRON PIPE

1.03 REFERENCES

- A. AASHTO H-20 – Loading Design Specifications.
- B. AASHTO LRFDLTS-1-M – LRFD Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals.
- C. ANSI/NEMA WC 70/ICEA S-95-658 – Power Cables Rated 2000 Volts or Less for the Distribution of Electrical Energy.
- D. ASTM A366 – Commercial Steel (CS) Sheet, Carbon (0.15 Maximum Percent) Cold-Rolled.
- E. ASTM A1008 – Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Required Hardness, Solution Hardened, and Bake Hardenable
- F. ASTM B3 – Soft or Annealed Copper Wire.
- G. ASTM B8 – Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard, or Soft.
- H. ASTM B418 – Cast and Wrought Galvanic Zinc Anodes.
- I. ASTM D32 – Catalysts.
- J. ASTM D149 – Standard Test Method for Dielectric Breakdown Voltage and Dielectric Strength of Solid Electrical Insulating Materials at Commercial Power Frequencies.
- K. ASTM D229 – Standard Test Methods for Rigid Sheet and Plate Materials Used for Electrical Insulation.
- L. ASTM D256 – Standard Test Methods for Determining the Izod Pendulum Impact Resistance of Plastics.
- M. ASTM D638 – Standard Test Method for Tensile Properties of Plastics.
- N. ASTM D695 – Standard Test Method for Compressive Properties of Rigid Plastics.
- O. ASTM D785 – Standard Test Method for Rockwell Hardness of Plastics and Electrical Insulating Materials.

- P. ASTM D790 - Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.
- Q. ASTM F36 – Standard Test Method for Compressibility and Recovery of Gasket Materials.
- R. AWWA C207 – Steel Pipe Flanges for Waterworks Service, Sizes 4 In. Through 144 In. (100 mm Through 3,600 mm).
- S. DIN 3535-5 – Seals for Gas Supply – Part 5: Sealing Materials of Rubber, Cork, and Synthetic Fibres for Gas Fittings and Gas Appliances.
- T. DIN 3535-6 – Gaskets for Gas Supply – Part 6: Gasket Materials Based on Fibres, Graphite, or Polytetrafluoroethylene (PTFE) for Gas Valves, Gas Appliances, and Gas Mains.
- U. IDOT 228-814001-03 – Handholes.
- V. NACE International SP0169 – Recommended Practice, Control of External Corrosion on Underground or Submerged Metallic Piping Systems.

1.04 QUALITY ASSURANCE

- A. Certification: Provide manufacturer's certification that all components of cathodic protection system meet requirements of Drawings and Specifications.
- B. Reference applicable section of Specifications and applicable Standard detail on certification.
- C. Drawings: Drawings for cathodic protection system are diagrammatic and not scaled for exact locations, unless scales are explicitly stated on specific drawing. Determine exact locations by field conditions and non-interference with other utilities or mechanical and structural features. Test station locations are to be installed in grassy areas where possible, avoiding roadways. Note other existing utilities in area and do not damage these utilities during excavation. Repair any damaged utilities to satisfaction of Owner's Representative at Contractor's expense.
- D. Inspection: All materials, fabrication and installations are subject to inspection and testing by Owner's Representative.

1.05 SUBMITTALS

- A. Submittals to conform to requirements of Section 01 33 00 – SUBMITTAL PROCEDURES.
- B. Design Drawings and Computations: Prepared by or under direct supervision of a Professional Engineer, registered in State of Illinois with minimum 10 years' experience in cathodic protection design, all computations and drawings.
- C. Catalog Cuts: Submit manufacturer's catalog cuts for each item. Include manufacturer's name on catalog cuts. Provide sufficient information to show that materials meet requirements of Drawings and Specifications. Where more than one item or catalog number appears on a catalog cut, clearly identify item proposed.
- D. Logs: Give Owner's Representative a minimum of 48 hours' notice prior to drilling anode bore. Type and submit to Owner's Representative copies of detailed geological and resistance logs of each deep anode bore.
- E. Rectifier Operation and Maintenance Manual: Rectifier manufacturer to include a complete operation and maintenance manual with each rectifier shipped to Job Site. In addition to operating instructions, include a circuit diagram and spare parts list in manual. Operate rectifier under full load conditions at factory and thoroughly inspect and test by manufacturer prior to delivery to Job Site. Report results of this testing on a manufacturer's quality control form and include in operation manual. Rectifier manufacturer is to reference each operating manual by rectifier model number and individual serial number.

- F. Report: Submit six operating, monitoring, and maintenance reports for cathodic protection systems. Include all test data as required by Subsection 3.08H. Include operating instructions, maintenance data, product data, and test procedures in manuals.
- G. Drawings: Maintain as-built drawings of cathodic protection installation during installation and construction.
 - 1. Revise drawings to show exact locations of all anodes, wiring, connections and terminal boxes. Properly identify all items of equipment and material.
 - 2. Submit original as-built drawings to Owner's Representative.

1.06 MEASUREMENT AND PAYMENT

- A. Refer to Section 01 22 00 – UNIT PRICES.

1.07 DELIVERY, STORAGE AND HANDLING

- A. Deliver Products to Site per manufacturer recommendations.
- B. Store and protect Products per manufacturer recommendations.
- C. Cathodic protection materials and equipment that are damaged or dropped will not be accepted.
- D. Store all materials off ground and in an enclosed shelter.

1.08 WARRANTY

- A. Vendor shall warrant equipment furnished under this Section for a period of 3 years against defects in materials and workmanship and operational failure.
- B. In event of failure of any part or parts of equipment during 3 years of service, provided that equipment has been operated and maintained in accordance with good practice, vendor shall furnish, deliver, and install defective part or parts at his own expense.
- C. First 3 years of service shall be interpreted as 36-month period following installation, adjusting, and acceptance testing, and start of actual operation of equipment, or 42 months following delivery of equipment, whichever comes first.

PART 2 - PRODUCTS

2.01 SACRIFICIAL ANODES – MAGNESIUM

- A. Magnesium Anodes: Use high potential magnesium anodes. Follow metallurgical composition of magnesium anodes as listed below:

Element	Percent Composition
Aluminum	0.01 Max.
Manganese	0.50 - 1.3
Copper	0.02 Max.
Nickel	0.001 Max.
Iron	0.03 Max.
Other – (Each)	0.05 Max.
Other – (Total)	0.30 Max.
Magnesium	Balance

- B. Magnesium Anode Current Capacity: Magnesium anodes require a current capacity of no less than 500 amp-hours per pound of magnesium.
- C. Anode Backfill Material: Use chemical backfill material around all galvanic anodes. Backfill provides a reduced contact resistance to earth, provides a uniform environment surrounding anode, retains moisture around anode, and prevents passivation of anode.
1. All galvanic anodes come prepacked in a backfill material conforming to the following composition:
 - a. Ground Hydrated Gypsum: 75 percent.
 - b. Powdered Bentonite: 20 percent.
 - c. Anhydrous Sodium Sulfate: 5 percent.
 2. Have a grain size backfill such that 100 percent is capable of passing through a 20-mesh screen and 50 percent is retained by a 100-mesh screen.
 3. Completely surround anode with backfill mixture within a cotton bag.
 4. For standard cast magnesium ingots, required weight of backfill is as follows:

Anode Weight (lbs)	Backfill Weight (lbs)	Total Weight (lbs)
9	15	24
17	25	42
20	50	70
32	38	70
48	48	96
60	70	130

- D. Anode Lead Wires: Use a 20-foot length of No. 12 AWG solid copper wire equipped with TW or THW insulation for standard lead wires for a galvanic anode. Color code all anode lead wires as specified in Drawings when terminated in test stations.
- E. Lead Wire Connection to Magnesium Anode: Cast magnesium anodes with a galvanized steel core with weight of core not to exceed 0.10 pounds per linear foot.
- F. Recess one end of anode to expose core for lead wire connection. Silver solder lead wire to core and fully insulate connection by filling recess with electrical potting compound.

2.02 SACRIFICIAL ANODES – ZINC

- A. Zinc Anodes: Use high purity zinc anodes. Metallurgical composition of zinc anodes conforms to ASTM B418, Type II and the following:

Element	Percent Composition
Aluminum	0.005 Max.
Cadmium	0.003 Max.
Iron	0.0014 Max.
Lead	0.003 Max.
Zinc	Balance

- B. Zinc Anode Current Capacity: Zinc anodes require a current capacity of no less than 335 amp-hours per pound of zinc.
- C. Anode Backfill Material: Use chemical backfill material around all galvanic anodes.
 - 1. Backfill provides a reduced contact resistance to earth, provides a uniform environment surrounding anode, retains moisture around anode, and prevents passivation of anode.
- D. All galvanic anodes come prepackaged in a backfill material conforming to the following composition:
 - 1. Ground Hydrated Gypsum: 75 percent.

2. Powdered Bentonite: 20 percent.
3. Anhydrous Sodium Sulfate: 5 percent.
4. Have a grain size backfill such that 100 percent is capable of passing through a 20-mesh screen and 50 percent is retained by a 100-mesh screen.
5. Completely surround anode with backfill mixture within a cotton bag.
6. For standard cast zinc ingots, required weight of backfill is as follows:

Anode Weight (lbs)	Backfill Weight (lbs)	Total Weight (lbs)
30	40	70
45	55	100
60	70	130

- E. Anode Lead Wires: For lead wire for zinc anodes, use a 20-foot length of No. 12 AWG solid copper wire equipped with TW or THW insulation. Lead Wire Connection to Zinc Anode: Cast zinc anodes with a 1/4-inch diameter galvanized steel core. Extend one end of core beyond anode for lead wire connection. Silver-solder lead wire to core and fully insulate connection.

2.03 PERMANENT REFERENCE ELECTRODES

- A. Type: Provide a copper/copper sulfate, double membrane, ceramic cell in a geomembrane package.
- B. Wire: Equip electrode with No. 14 AWG stranded copper wire with HMWPE insulation of suitable length to attach to terminal board of test station without splicing

2.04 EXOTHERMIC WELD EQUIPMENT

- A. Charges and Molds: Use weld charges and molds sized as specified by manufacturer for specific wire size and surface configuration. Weld charges and molds to be nVent's ERICO's "Cadweld" or Hubbell's Continental Industries' "thermOWeld."
- B. Limitation: For high-strength steel pipelines, use only 15-gram Cadweld charges.
- C. Weld Coating: Coat all bare metal and weld metal with "STOPAQ WRAPPINGBAND CZ" tape by Seal for Life Group.
- D. Weld Cap: Cover coated weld with a plastic weld cap.

2.05 WIRE AND CABLE

- A. Anode Header Cable: Single-conductor, Type HMWPE, insulated cable specifically designed for direct-buried DC service in cathodic protection installations.
- B. Conductor: Stranded, annealed, uncoated copper, not less than No. 8 AWG, complying with ASTM B3 and ASTM B8.
- C. Insulation: High-molecular-weight polyethylene, complying with ANSI/NEMA WC 70/ICEA S-95-658.
- D. Minimum Average Thickness of Insulation: 110 mils for Nos. 8 through 2 AWG, and 125 mils for Nos. 1 through 4/0 AWG; rated at 600 volts.
- E. Connectors: Copper-compression type

- F. Bonding Conductors for Joint and Continuity Bonds: Not less than No. 8 AWG, stranded, Type THWN copper conductors.
- G. Flexible Pipe Coupling Bonds: Flexible copper straps with electrical resistance equal to No. 1/0 AWG stranded copper wire and with five holes for five exothermic/Cadwelds to pipe.
- H. Test Wires: No. 12 AWG, Type THWN copper conductors.
- I. Resistance Wires: No. 16 or No. 22 AWG nickel-chromium wire.
- J. Cables for Installation in Conduit: Type THWN copper conductors.

2.06 ELECTRICAL CONTINUITY BONDS

- A. Applications for electrical continuity bonding include the following:
 - 1. Bonding across bolted joint assemblies
 - 2. Bonding across gasketed joint assemblies
- B. Preparation of Prestressed Concrete Pipe for Bonding
 - 1. General
 - a. Fabrication: Use prestressed concrete pipe for this Project that has been fabricated in such a manner as to establish electrical continuity between metallic components of pipe and joints.
 - 2. Acceptable Methods: Establish electrical continuity as indicated in Drawings and Specifications. Criteria for electric continuity includes:
 - a. Tensile Wire: Pipe manufacturer to obtain a resistance no greater than 0.03 ohms between any wire and steel joint ring at end of pipe farthest from that wire. Manufacturer to report values obtained and method of measurement.
 - b. Internal Pipe Joint Components: Pipe manufacturer to obtain resistance of less than 0.03 ohms between any component and steel pipe cylinder.
 - 3. Tensile Wire Continuity
 - a. Establish continuity between tensile wire coils and steel cylinder on embedded cylinder type prestressed pipe by tightly wrapping tensile wire over longitudinal mild steel straps during pipe manufacture.
 - 1) Use and install two continuous straps 180 degrees apart longitudinally along pipe. These straps must maintain electrical continuity between metallic components
 - 2) Use steel straps made of mild steel and free of grease, mill scale, or other high resistance deposits.
 - 3) Make longitudinal straps electrically continuous with pipe cylinder by steel fasteners of suitable dimensions placed between steel cylinder and longitudinal straps. Connect fasteners so as to remain intact during pipe fabrication process.
 - 4. Steel Cylinder Continuity
 - a. Establish continuity of all joint components and steel cylinder. These components include the following:
 - 1) Anchor socket brackets.
 - 2) Anchor socket.
 - 3) Spigot ring.
 - 4) Bell ring.

- b. If mechanical contact does not provide a resistance of less than 0.03 ohms between components, tack weld component to provide electrical continuity.
- C. Preparation of Steel Pipe for Bonding: Bonding wires are not required for welded steel pipe.
- D. Preparation of Ductile Iron Pipe for Bonding: Install insulated bond wires as shown on Contract Drawings.
- E. Electrical Bond Wires: Electrical bond wires are to be a minimum No. 2 AWG, seven strand, copper cable with THHN insulation. Remove 1 inch of THHN insulation from each end of bond wire. Provide minimum number of bond wires, as shown on Drawings, for steel or ductile iron pipe.
- F. Electrical Bond Clip: Weld 3 ASTM A366 steel bonding clips, each approximately 0.13 inches thick, 2 1/2 inches long, and 1 1/4 inches wide, with 1/8-inch fillet welds to bell and spigot of adjacent steel. Manufacture clips to maintain continuity regardless of small deflections of finished joints.

2.07 FLANGE ISOLATION

- A. Applications: Required applications of dielectric flange isolation assemblies include, but are not limited to, the following:
 - 1. At selected locations where new piping is mechanically connected to existing piping.
 - 2. At selected below-grade to above-ground piping transitions.
 - 3. At locations shown on Drawings.
 - 4. At locations where carrier pipe material changes between PCCP and Steel.
- B. Isolation: Provide electrical isolation through installation of the following materials:
 - 1. Welded flange connections to steel pipe.
 - 2. Flange connections to bell and spigot adapters for concrete cylinder and ductile iron pipe.
 - 3. Flange isolation gasket.
 - 4. Sleeves and washers.
- C. Flange Isolation Gasket: Provide Type "E" NEMA Grade G-10 gaskets with an EPDM sealing element.
 - 1. Thickness: Gasket to be 1/8 inches thick.
 - 2. Dimensions: Gasket's I.D. should be 1/8 inch smaller than I.D. of flange it will be installed in, and it should extend to O.D. of flange.
 - 3. Flange Face: Provide sealing element positioned to accommodate either flat or raised face flanges.
 - 4. Temperature Range: Temperature range of Product shall be -65°F to +250°F.
 - 5. Product Performance Testing: Gasket shall meet or exceed the following test criteria:
 - a. ASTM D149 – Dielectric Strength (short term): 550 volts/mil.
 - b. ASTM D695 – Compressive Strength: 50,000 psi minimum.
 - c. ASTM D229 – Water Absorption: 0.15 percent maximum.
 - d. ASTM D 790 – Flexural Strength: 50,000 psi minimum.
 - e. ASTM D785 – Hardness: 110 minimum.
 - f. ASTM D256 – IZOID Impact Strength: 12.5 foot-pounds/inch minimum.
 - g. ASTM D638 – Tensile Strength: 45,000 psi minimum.

- h. ASTM D32 – Shear Strength: 20,000 minimum.
 - i. ASTM F36 – Compressibility: 2.1 percent maximum.
 - j. ASTM F36 – Recovery: 88.9 percent minimum.
 - k. ASTM F38 (Method B) – Creep Relation: 5.1 percent maximum.
 - l. DIN-3535-5 and DIN-3535-6 – Gas Permeability: 0.43 centimeters³/minute maximum.
- D. Alternate Isolation Gasket: As an alternate to above, provide a plain-faced phenolic gasket. Place phenolic gasket between two full-faced gaskets. Provide cloth-inserted rubber gasket material, 1/8 inches thick, in accordance with AWWA C207. Use factory-cut gaskets of proper dimensions.
- E. Sleeves and Washers
- 1. Sleeve: Provide full length 1/32 inches thick mylar sleeves for each bolt. Length of sleeve shall extend half way into outside steel backup washers.
 - 2. Isolation Washers: Supply two 1/8 inches thick G-10 isolation washers per bolt. Isolation washers to have a compressive strength of 50,000 psi, dielectric strength of 550 volts/mil and maximum water absorption of 0.10 percent.
 - 3. Backup Washers: Provide two 1/8 inches thick zinc-plated, hot rolled steel backup washers for each bolt. For pipe greater than 30-inch diameter, provide two additional steel washers to be placed inside isolation washers for additional support.
 - 4. Size: Isolation washers and backup washers shall be of same O.D. and I.D., with a sufficiently large I.D. to fit over isolation sleeve.
- F. Coatings: Coat buried isolation flanges with petroleum-based tape or synthetic, a-polar polymer wrap.

2.08 TEST STATIONS

- A. Plastic Test Stations: Flush-mounted type, manufactured of high-impact-resistant PVC or polycarbonate with watertight conduit connections and cover and removable terminal board having at least five terminals.
- 1. Test stations installed along AC Corridors shall be installed with a dead front terminal block.
- B. Test stations to be installed with engraved laminated plastic nameplates, as shown in Drawings. Name plate shall be mounted to removable terminal block and included information stated within Drawings.
- C. Test Station Mounting Enclosures
- 1. For traffic boxes in subparagraph below, verify that AASHTO's LRFD LTS-1-M and AASHTO H-20 traffic loads is adequate.
 - 2. Traffic area boxes shall be precast concrete handholes.
 - a. Handholes shall be precast in accordance with IDOT 228-814001-03, sized as shown on Drawing Details. Handholes shall include provisions for conduit entry as detailed.
 - b. Covers shall be Neenah Foundry's bolted "R-6660-JH" equipped with a Type G handle and Type E countersunk flat head screws, or approved equal. Covers shall have raised flush letters cast on lid reading "DWC WATER CP TEST STATION," as indicated on Details. Minimum clearance from edge of handhole to conduit entry shall be 1 foot 10 inches, as detailed.

- D. Remote Monitoring Test Stations: Where required, install Remote Monitoring Test Stations, per manufacturer's instructions.
1. Remote Monitoring Test Stations shall be installed at time of construction or retrofitted to existing test stations, as instructed by manufacturer.
 2. All equipment installed within Project limits shall be of same manufacturer.
 3. Communication
 - a. Equipment shall be compatible with Owner's systems.
 - b. Equipment shall use cellular or satellite communications.
 4. Power Supply
 - a. Shall be battery powered for test stations
 - 1) Shall have a minimum 10-year battery.
 - b. Shall have a replaceable power supply.
 5. Shall allow for in-person cathodic protection testing without disassembly of remote monitoring unit.
 6. Remote Monitoring Units shall be MobilTex or approved equal.

2.09 FLUSH MOUNT TEST STATIONS

- A. Plastic Test Station Terminal Boards: Flush-mounted type, manufactured of high-impact-resistant PVC or polycarbonate with watertight conduit connections and cover and removable terminal board having at least five terminals.
- B. Test Station Mounting Enclosures
 1. Use a Neenah Foundry's bolted "R-6660-JH" with Type G Handle and Type E countersunk flat head screws and a cast iron cover as manufactured by Neenah Foundry or approved equal. Covers shall have raised flush letters cast on lid reading "DWC WATER CP TEST STATION," as indicated on Details.

2.10 ABOVE-GRADE TEST STATIONS

- A. At test station locations where flush-mounted structures are not practical or where specified in Drawings, use an above grade test station and place such that possible damage from vandalism, traffic, etc. is minimized.
- B. Plastic Test Stations: Flush-mounted type, manufactured of high-impact-resistant PVC or polycarbonate with watertight conduit connections and cover, and removable terminal board having at least five terminals.

2.11 TEST STATION LEAD WIRES

- A. Test station lead wires of all sizes shall have TW, THW, or THHN insulation.
- B. Color code insulation based upon connection to underground structures, as specified in Drawings.
- C. Wire all terminal boards as shown on Drawings.

2.12 EXOTHERMIC WELDING MATERIALS

- A. Exothermic Weld Kits: Use weld charges and molds, sized as specified by manufacturer, for specific wire size and surface configuration. Weld charges and molds to be nVent's ERICO's "Cadweld" or Hubbell's Continental Industries' "thermOweld."

- B. Exothermic Weld Caps: Dome of high-density polyethylene, 10-mil minimum thickness, filled with mastic and containing a tunnel portion to separate lead wire from exothermic weld.
- C. Limitation: For high-strength steel pipelines, use only 15-gram Cadweld charges.
- D. Weld Cap: Cover coated weld with a plastic weld cap.
- E. Weld Coating: Coat all bare metal and weld metal with Seal for Life Group's "STOPAQ WRAPPINGBAND CZ" tape.

2.13 COATING REPAIR MATERIALS

- A. Repair coating as recommended by manufacturer following all requirements for surface preparation and quality control.

PART 3 - EXECUTION

3.01 INSTALLATION OF SACRIFICIAL ANODES

- A. Location: Install sacrificial anodes at locations where anodes will operate at maximum effectiveness.
- B. Placement: Install anodes in native soil in a vertically augured hole, as shown on Drawings. If a vertical installation of anodes is not feasible, anodes may be installed horizontally.
- C. Backfilling: Hole is augured, lower packaged anode into hole and firmly tamp soil around package so that it is in intimate contact with package.
- D. Lead Wire: Run lead wires from anodes underground at a minimum depth of 36 inches. Connect wires through a test station, as indicated on Drawings.
- E. Handling: Handle galvanic anodes carefully to avoid damaging anode materials and wire connections.

3.02 INSTALLATION OF WIRE AND CABLE

- A. Depth: Install all underground wires and cables at a minimum of 36 inches below final grade with a minimum separation of 6 inches from other underground structures.
- B. Above-Grade Conduit: Enclose all positive and negative cables and anode lead wires in rigid galvanized steel conduit when above grade.
 - 1. Use insulating bushings at ends of all conduits.
- C. Extend conduit 12 inches below grade.
- D. Below Grade Conduit: Enclose all cables and wires in grey electrical PVC conduit when below grade.

3.03 INSTALLATION OF NEGATIVE CABLE AND TEST LEAD ATTACHMENT

- A. Attach negative cables and test leads to pipe (for dielectrically coated steel and ductile iron pipe options) or to "L" bracket (for concrete cylinder pipe option) by exothermic welding.
- B. Clean and dry pipe to which negative cables and test lead are to be attached.
- C. Use a grinding wheel to remove all coating, mill scale, oxide, grease, and dirt from pipe over an area approximately 3 inches square. Clean surface to bright metal.
- D. Remove approximately 1 inch of insulation from each end of wires to be exothermically welded to pipe, exposing clean, oxide-free copper for welding.
- E. Using proper size exothermic weld mold, as recommended by manufacturer. Place wire between graphite mold and prepared metal surface. Use a copper sleeve crimped over wire for all wires No. 12 AWG size.

- F. Place metal disk in bottom of mold.
- G. Remove cap from weld charge container. Pour contents into mold. Squeeze bottom of weld charge container and spread ignition powder over charge.
- H. Close mold cover and ignite starting powder with a flint gun. Hold mold firmly in place until all of charge has burned and weld has cooled slightly.
- I. Remove exothermic weld mold and gently strike weld with a hammer to remove weld slag. Pull on wire to assure a secure connection. If weld is not secure or wire breaks, repeat procedure.
- J. If weld is secure, coat all bare metal and weld metal with Seal for Life Group's "STOPAQ WRAPPINGBAND CZ" tape.

3.04 PERMANENT REFERENCE CELL

- A. Location: When not shown on Drawings, locate permanent reference cell near negative structure connection.
- B. Placement: Remove permanent reference cell from shipping package and place below springline and 1 foot away from pipeline. Make certain that reference electrode is completely surrounded by special backfill material in geomembrane package.
 - 1. Backfill reference electrode with 6 inches of select, native soil and compact by hand. Moisten soil for good compaction.
 - 2. Saturate backfilled reference cell with 5 gallons of water.

3.05 INSTALLATION OF ELECTRICAL CONTINUITY BOND WIRES

- A. Inspection: Use continuous bond wires with no cuts or tears in insulation covering conductor
- B. General: Attach bond wires at required locations by welding.
 - 1. Exothermic/Cadwelding: Perform Cadwelding of bond wires to piping in the following manner:
 - 2. Clean and dry pipe to which wires are to be attached.
 - 3. Use grinding wheel to remove all coating, mill scale, oxide, grease, and dirt from an area approximately 3 inches square. Grind surface to bright metal.
 - 4. Remove approximately 1 inch of insulation from each end of wire to be Cadwelded to pipe, exposing clean, oxide-free copper for welding.
 - 5. Select proper size Cadweld mold, as recommended by manufacturer. Place wire between graphite mold and prepared metal surface. Use a copper sleeve crimped over wire for all 12 AWG wires.
 - 6. Place metal disk in bottom of mold.
 - 7. Pour Cadweld charge into mold. Squeeze bottom of cartridge to spread ignition powder over charge.
 - 8. Close mold cover and ignite starting powder with flint gun.
 - 9. After exothermic reaction, remove Cadweld mold and gently strike weld with a hammer to remove weld slag. Pull on wire to assure a secure connection. If weld is not secure or wire breaks, repeat procedure with new wire.
 - 10. If weld is secure, coat all bare metal and weld metal with Kop-Coat. Cover coated weld with a plastic weld cap.
- C. Post-Installation Inspection: Make post-installation inspection of all electrical continuity bonds through a visual examination of each Cadweld connection for strength and suitable coating prior to backfilling. In addition, perform one or more of the following tests:

1. Circulate current through pipe using DC power supply. Calculate resistance through known length of pipe. Resistance must not exceed 150 percent of theoretical resistance for pipe and bonds.
2. Measure resistance through select bonded joints with a digital low resistance ohmmeter (DLRO). Resistance of 0.001 ohms or less is acceptable.
3. Position a CSE at a stationary location adjacent to bonded pipeline. Impress a temporary current on pipe. Record static, current-applied, and instant "off" pipe-to-soil potential readings along pipe relative to stationary CSE.
4. Static potential measurements referenced to stationary CSE must be nearly identical along pipe to indicate electrical continuity.
5. Instant "off" potentials referenced to stationary CSE must be nearly identical along pipe to indicate electrical continuity.
6. Difference between instant "off" and static potential referenced to stationary CSE must be equal at each point of contact to pipe to indicate electrical continuity.
7. If any of above procedures indicates a poor quality bond connection, re-bond joint.
8. Record results and submit to Owner's Representative for approval prior to backfilling.

D. Backfilling of Bonded Joints

1. Backfill bonded piping in manner that prevents damage to bond wires and all connections to metallic structures.
2. If construction activity damages a bonded connection, install new bond wire.

3.06 INSTALLATION OF FLANGE ISOLATION DEVICES

- A. Placement: Install above-grade dielectric insulators at a minimum 12 inches and maximum of 48 inches above final grade.
- B. Assembly: Place gasket, sleeves, and washers as shown on Drawings. Follow manufacturer's recommendations for even tightening to proper torque. See Drawings.
- C. Testing: Immediately after an insulating fitting has been installed, test electrical isolation with a M.C. Miller Co., Inc.'s "Model 601" meter. Fully document test results and submit to Owner's Representative.
- D. Painting: Do not use metal base paints on insulating fittings.
- E. Encapsulation: Encapsulate below-grade insulating flanges with petrolatum tape system, or approved equal, after insulating flange has been tested for effectiveness.

3.07 INSTALLATION OF FLANGE ISOLATION DEVICES AT REMOTE OPERATED VALVES

- A. In addition to requirements set forth within 3.09, additional requirements shall be set forth within this section for locations installed with a remote operated valve.
- B. Testing: 10 days prior to installation of remote operated valve electrical components assembly but after installation of valve body, test electrical isolation with a M.C. Miller Co., Inc.'s "Model 601" meter. Fully document test results and submit to Owner's Representative.
 1. Electrical Isolation must be shown prior to installation of remote operated valve electrical components assembly to protect equipment from damage.
- C. Testing: Immediately after installation of remote operated valve electrical components assembly, test electrical isolation with a M.C. Miller Co., Inc.'s "Model 601" meter. Fully document test results and submit to Owner's Representative.

1. Electrical Isolation must be shown prior to installation of remote operated valve electrical components assembly to protect equipment from damage.

3.08 INSTALLATION OF TEST STATIONS

- A. Install test stations at locations specified by Drawings.
- B. Install test stations on backfill complying with requirements for trench bottom fill for anode wires, unless otherwise indicated.
- C. Terminate test conductors on terminal boards and install a spare set of test leads at each testing location.
- D. Locate test stations adjacent to manholes where possible. If a flush mounted test station is not feasible in a particular location, then an above-grade test station may be used, subject to approval by Owner's Representative.
- E. Use continuous test station lead wires without cuts or tears in insulation.
- F. Locate test stations as close to directly over pipe as possible. If pipe is installed under a road, place test station at curb for easy access.
- G. Attach test lead wires to pipe by Cadwelding.
- H. Use color coded test wires, as indicated on Drawings.
- I. Wire test station terminal board configurations, as shown on Drawings.
- J. At foreign pipeline crossing test stations, owners of pipeline(s) must be notified and must give permission before test leads are connected to their pipeline. Utility owner should have a representative present. If utility owner refuses test leads connected to their pipeline, then document utility owner's refusal and install potential test station on water main. Document utility owner's contact name, phone number, email address, and date of contact. Submit documentation to Owner's Representative.

3.09 FLUSH-MOUNT TEST STATIONS

- A. Install flush-mount test stations, as shown on Drawings.
- B. Coil sufficient slack beneath test station to allow for soil settlement and to prevent damage to leads during backfilling. Leave additional slack to allow for withdrawal of terminal board a minimum of 18 inches above top of concrete traffic box for test purposes. Install flush-mount test stations with permanent copper or copper sulfate reference electrodes where indicated on Drawings.
- C. Install reference electrode approximately 12 inches from pipe.
- D. Compact native soil by hand around electrode. Use select granular backfill material for balance of backfill.
- E. Saturate backfilled reference electrode with 5 gallons of water.
- F. Set test stations outside areas of permanent paving in a Portland cement concrete pad, minimum of 24 inches square and no less than 4 inches thick.

3.10 ABOVE-GRADE TEST STATIONS

- A. Install above-grade test stations where a flush-mounted test station cannot be located or specified by Drawings. Use and location of above-grade test stations must be approved by Owner's Representative.
- B. Locate test station adjacent to a permanent structure (e.g. a power pole), if possible, for physical protection.

- C. Coil sufficient slack beneath test station to allow for soil settlement. Do not damage leads during backfilling.
- D. Set test stations in a Portland cement concrete anchor, a minimum of 12 inches in diameter and no less than 2 feet thick.

3.11 INSTALLATION OF PIPE JOINTS

- A. Insulating Flange Sets: Cover flanges with sealing and dielectric compound.
- B. Insulating Unions: Install electrical isolation at each building entrance and at other locations indicated on Drawings. Cover unions with sealing and dielectric compound.

3.12 POST INSTALLATION TESTING OF CATHODIC PROTECTION SYSTEMS

- A. General: Inspect, energize, and adjust cathodic protection as soon as possible after equipment has been installed.
- B. Energization: Perform energizing of cathodic protection system by a Corrosion Engineer to achieve compliance with referenced corrosion control standards set forth by NACE and/or AWWA.
- C. Notice: Prior to native state, polarized potential testing, and commissioning of system, give a minimum of 48 hours' notice to DuPage Water Commission, Engineering Project Manager to facilitate observation of tests by a Client Representative.
- D. Method: Corrosion Engineer shall:
 1. Measure native state pipe-to-soil potentials at all test stations, permanent reference cells, electrical isolation devices, and locations of exposed pipe prior to energizing cathodic protection system.
 2. Measure casing-to-soil potentials and foreign line potentials prior to energizing cathodic protection system.
 3. Energize cathodic protection system and adjust DC current output such that pipe-to-soil potentials near cathodic protection current source (either transformer-rectifier or sacrificial anodes) is approximately -1000 millivolts to a copper sulfate electrode (CSE). Record DC voltage and current of power supply.
 4. Allow sufficient time for pipeline to polarize.
 5. Using a current interrupter, cycle power supply "On" and "Off".
 6. Record "On" and "Instant Off" potentials at all water pipeline bis, permanent reference cells, electrical isolation devices, locations of exposed pipe, casings and foreign pipelines.
 7. For steel and ductile iron pipe, adjust cathodic protection power supplies to satisfy criteria of a minimum 100 millivolts of polarization or an "Instant Off" potential at least as negative as -850 millivolts CSE.
 8. For concrete cylinder pipe, adjust cathodic protection power supplies to achieve a minimum 100 millivolt of polarization without any "Instant Off" potentials more negative than -1000 millivolts CSE.
 9. Record all final adjustments of DC power supplies.
 10. Verify that all electrical isolation devices are operating properly, including flange isolators and casing spacers.
 11. Verify that interference does not exist with foreign pipelines. Perform joint tests and mitigate any interference detected.

- E. After initial energization and after rectifiers have been adjusted as necessary for compliance with NACE RP-0169 (latest revision), perform a walk-through inspection with Client Engineer to verify that all corrosion control components have been installed in accordance with Project Drawings and Specifications.
- F. Make a punch list of outstanding work identified during walk-through inspection. Once Contractor has completed all work on punch list, pipeline will be allowed to polarize for 30 days before final testing. Perform final testing and adjustment after 30-day polarization period. Repair deficiencies discovered during final testing at Contractor's expense and at no additional cost to DuPage Water Commission.
- G. Equipment: All cathodic protection testing instruments to be in proper working order and calibrated according to factory specifications.
- H. Report: Submit a written report in accordance with Section 1.05. Include all test data, resistance and geologic logs, rectifier O&M Manual, and As-Built Drawings.

END OF SECTION

33 11 01 PRESTRESSED CONCRETE CYLINDER PIPE

PART 1 - GENERAL

1.01 SUMMARY

- A. This Section includes requirements for providing supervision, labor, material, tools equipment, testing, training, and related items to install and place in operation prestressed concrete cylinder pipe.
- B. Extent of prestressed concrete cylinder piping is shown on Drawings and/or in Schedules.

1.02 RELATED WORK

- A. Section 01 22 00 – UNIT PRICES
- B. Section 01 33 00 – SUBMITTAL PROCEDURES
- C. Section 01 40 00 – QUALITY REQUIREMENTS
- D. Section 13 47 13 – CATHODIC PROTECTION
- E. Section 31 23 16 – EXCAVATION, BACKFILL, AND COMPACTION FOR UTILITIES
- F. Section 33 11 02 – STEEL PIPE
- G. Section 33 11 03 – DUCTILE IRON PIPE

1.03 REFERENCES

- A. AASHTO HS-20 – Loading Design Specifications.
- B. ACI 318 – Building Code Requirements for Structural Concrete.
- C. ANSI B16.1 – Gray Iron Pipe Flanges and Flanged Fittings: Classes 25, 125, and 250.
- D. ANSI/ASME Boiler and Pressure Vessel Code, Section IX.
- E. ANSI/AWS B2.1 – Welding Procedure and Performance Qualification.
- F. ANSI/AWS D1.1 – Structural Welding Code – Steel.
- G. ANSI/AWS D1.3 – Structural Welding Code – Sheet Steel.
- H. ANSI/NSF 61 – Drinking Water System Components – Health Effects.
- I. ASTM A36 – Carbon Structural Steel.
- J. ASTM A283 – Low and Intermediate Tensile Strength Carbon Steel Plates.
- K. ASTM A370 – Standard Test Methods and Definitions for Mechanical Testing of Steel Products.
- L. ASTM C497 – Standard Test Methods for Concrete Pipe, Concrete Box Sections, Manhole Sections, or Tile.
- M. ASTM C595 – Blended Hydraulic Cements
- N. ASTM A648 – Steel Wire, Hard-Drawn for Prestressed Concrete Pipe.
- O. ASTM C33 – Concrete Aggregates.
- P. AWWA C200 – Steel Water Pipe, 6 Inches (150 mm) and Larger.
- Q. AWWA C206 – Field Welding of Steel Water.

- R. AWWA C207 – Steel Pipe Flanges for Waterworks Service, Sizes 4 Inches Through 144 Inches (100 mm Through 3,600 mm).
- S. AWWA C208 – Dimensions for Fabricated Steel Water Pipe Fittings.
- T. AWWA C210 – Liquid-Epoxy Coatings and Linings for Steel Water Pipe and Fittings.
- U. AWWA C301 – Prestressed Concrete Pressure Pipe, Steel-Cylinder Type.
- V. AWWA C304 – Design of Prestressed Concrete Cylinder Pipe.
- W. AWWA M9 – Concrete Pressure Pipe.

1.04 QUALITY ASSURANCE

A. Quality Assurance Testing

1. Each completed cylinder with joint rings welded to its ends shall be subjected to a hydrostatic test as specified. Reports of all cylinder hydrostatic tests shall be submitted to Owner's Representative on a weekly basis.
2. All fittings, specials, and appurtenances shall be hydrostatically tested or tested using Nondestructive Testing (NDT) in accordance with AWWA C200 if fabricated from previously hydrostatically tested straight pipe. Submit test reports to Owner's Representative.
3. Quality control tests shall be conducted for each production coil of wire. Reports shall be submitted to Owner's Representative on a weekly basis.
4. Mill test reports of all steel plates and sheets used in fabrication of pipes, fittings, specials, and appurtenances shall be submitted to Owner's Representative.
5. At least two standard concrete test cylinders shall be made in accordance with AWWA C301, Sec. 4.6.5.5. Quality assurance test to determine modulus of elasticity of concrete shall be made at 2-month intervals, or whenever source of aggregate or cement are changed. Reports shall be submitted to Owner's Representative on a weekly basis.
6. In event that pipe fails to withstand such tests to satisfaction of Owner's Representative, manufacturer shall have right to test two additional standard length of pipes, selected at random by Owner's Representative, from same lot of pipes that faulty pipe was selected. If two pipes successfully pass tests, remainder of lot may be accepted by Owner's Representative. If either of two pipes fails to pass test, remainder of lot will not be accepted, unless each pipe successfully passes quality assurance test.
7. All rejected materials and pipes shall be plainly marked and replaced by Contractor with materials which meet requirements of these Specifications, without additional cost to Owner. Prior to performing tests, manufacturer shall submit proposed test procedures and dates for Owner's Representative review. Owner's Representative reserves right to witness any or all tests.

B. Proof of Design Tests

1. One proof of design test shall be performed for each size of each class of pipe by manufacturer, witnessed, and each witnessed pipe marked by Owner's Representative – at no additional cost to Owner – and results of tests submitted to Owner's Representative for approval prior to start of manufacture. Proof of design test shall be conducted before delivery of any pipe. Purpose of the tests is to prove that design and quality of each size and class of pipe meets Specification requirements. For each test, one standard length from each size of pipe shall be selected. Test results shall meet requirements as outlined in this Specification. In the event that pipe fails to meet above requirements, manufacturer may conduct two additional tests on two lengths of pipe randomly selected by Owner's Representative. Failure of either two lengths shall require an independent thorough review of pipe manufacturing process quality control and quality assurance test program by an

outside expert acceptable to Owner's Representative and manufacturer. Manufacturer shall be responsible for all cost incurred by review. Proof of design tests shall be as follows:

a. Hydrostatic Test

- 1) Hydrostatic test to zero concrete stress pressure, P_o , without incipient pipe coating crack, leaks, and seeps. This test pressure shall be maintained for a minimum 20 minutes.
- 2) Test to determine pressure to cause first visible coating crack (0.002 inch x 12 inches long).
- 3) Hydrostatic test to cause bursting pressure, P_b .

C. Restrained Joint Tests

1. In lieu of satisfactory design calculations, a minimum of one test for each type and size of restrained joint shall be performed to prove serviceability of proposed design. Test pipe shall be selected from pipe to be used for Project. Restrained joint tests shall be performed on initial pipe prior to manufacturing remaining of pipe with restrained joints to prove restrained joints meet Specification requirements. Test shall consist of two pipe units from each size pipe harnessed together with each type of proposed restrained joint and hydrostatically tested to zero concrete stress, P_o , or maximum permissible joint design pressure. Restrained joint shall be grouted as recommended by manufacturer for field installation.
2. Restrained joints tests shall be as follows:
 - a. Apply internal pressure to zero concrete stress, P_o , or maximum permissible joint design pressure for minimum of 20 minutes. There shall be no incipient pipe coating cracks, leaks, seeps, or loss of water from pipe or restrained joint. No circumferential crack greater than 0.04 inch on restrained joint cement-mortar grout shall occur.
 - b. In the event that restrained joint fails to withstand such test to satisfaction of Owner's Representative, design of restrained joint will be rejected. It will be manufacturer's responsibility to redesign restrained joint and retest restrained joint without additional cost to Owner's Representative.

D. Test Reports

1. Results of quality assurance tests, proof of design tests, and restrained joint tests shall be summarized in certified reports and submitted to Owner's Representative for review, in accordance with AWWA C301, Sec. 5.1.2.

1.05 SUBMITTALS

A. Conform to requirements of Section 01 33 00 – SUBMITTAL PROCEDURES.

B. No laying schedule will be reviewed without all design data Submittals. Submit shop drawings and product data.

C. Design Calculations

1. All design calculations shall be signed and sealed by a Professional Engineer licensed in the State of Illinois.
2. Manufacturer's pipe design calculations shall be submitted with Contractor's Bid Documents.

D. Laying Schedule

1. Tabulate laying schedules giving order and location of each pipe section and each special corresponding to serial number and/or identification numbers to be painted onto each pipe section, in accordance with AWWA C301, Sec. 4.3.2.

2. Each pipe section and each special shall be identified with a serial number and/or identification number to be painted onto pipe interior or fitting wall.

B. Test Reports

1. Quality assurance, proof of design, and restrained joint tests reports.
2. Concrete Reports, including the following:
 - a. Concrete mix design.
 - b. Concrete compression strength.
 - c. Concrete modulus of elasticity.
 - d. Creep and shrinkage properties.
 - e. Mortar mix design.
 - f. Mortar compression strength and absorption tests.
3. Prestressed wire, steel cylinder, and steel plate test reports.
4. Rubber gasket test reports, joint ring detail dimensions, and gasket sizing calculations.

C. Certificates of Compliance certifying:

1. Conformance with Contract Specifications in every aspect; for example, Certificate of Design.
2. Compliance with NSF/ANSI 61 Standards and certified to be lead-free.
3. Compliance with American Iron and Steel (AIS).

D. Manufacturer's written statement that pipe will meet an $\epsilon = 0.005$ ft (ϵ is defined as specific surface roughness).

E. Manufacturer's written quality control procedures.

F. Written Welding Procedures and Specifications.

G. Manufacturer's Standard Repair Procedures

1. Pipe manufacturer shall submit certificate of approval for each field repair, with a reference to a specific pipe serial number.

H. Detail Drawings and design calculations of prestressed concrete pipe specials and fittings, including combined load design, pipe class, wire size, inches of pitch, cylinder thickness, etc.

I. Details of fittings, specials, and appurtenances.

J. Design calculations for non-restrained and restrained joint rings and connections to steel cylinder. Calculations shall show maximum bending, shearing, compressive, tensile, and combined stresses.

K. If restrained joint calculations are not satisfactory, restrained joint tests may be performed as outlined in Subsection 1.04C of this Specification.

L. Provide 12 feeler gauges to Owner's Representative prior to installation of pipe.

M. Manufacturer's installation guide and approved techniques for field unloading and installation. Provide four copies to Owner's Representative and two copies to Owner.

N. No pipe shall be manufactured until all Drawings and design calculations have been reviewed with no exception noted.

1.06 MEASUREMENT AND PAYMENT

A. Refer to Section 01 22 00 – UNIT PRICES.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to Site and store and protect. Pipe fittings shall be handled by padded slings or devices which will not damage mortar coating. Chains and cables shall not be used.
- B. Rolling or sliding of pipe shall be prohibited under all circumstances, regardless of provisions made to protect pipe. Any pipe dropped shall be returned to manufacturer's plant.
- C. Provide padded bolsters on trucks or rail cars to spread load and provide uniform support.
- D. Provide padded tie-downs on trucks and rail cars. No cables or other metal shall be in contact with mortar coating.
- E. Pipe ends shall be covered/sealed with temporary plastic end caps to prevent debris and foreign materials from contacting pipe interior.
- F. All pipe and fittings damaged in shipment or by handling at Job Site prior to placement at discretion of Owner's Representative shall be repaired at Site, rejected, or returned to fabrication plant for approved repairs or replacement. Manufacturer shall provide recommendations for repairs. Owner's Representative shall be provided written notification 24 hours in advance of all job site repairs.
- G. Pipe shall be strung along route of pipeline to satisfaction of Owner's Representative and shall be protected by pipelaying Contractor with proper lights, barricades, etc.

1.08 WELDING MATERIALS AND PROCEDURES

- A. Conform to ANSI/AWS D1.1, D1.3; ANSI/ASME Boiler and Pressure Vessel Code, Sec. IX; AWWA C206; and applicable state labor regulations. Contractor or manufacturer shall prepare written welding procedure specifications for all welding, in accordance with applicable Standards and AWWA C301.
- B. Contractor or manufacturer shall certify that all welders have been tested and are qualified in accordance with ANSI/ASME Boiler and Pressure Vessel Code Sec. IX or ANSI/AWS B2.1.

PART 2 - PRODUCTS

2.01 GENERAL

- A. Prestressed concrete cylinder pipe specified is a composite structure which consists of the following principal elements: concrete core, steel cylinder and joint rings, high tensile wire, and cement-mortar coating. Compatibility and workability of various pipe elements to act and work together as a single element pipe structure is an essential and basic requirement of Contract Specifications. Maintenance of strict quality control measures at point of manufacture is essential to ensure pipe supplied will function properly over period of intended service life. Special attention is required in design and quality control to provide structurally sound protective cement-mortar coating for pipe during entire service life.
- B. It is Contractor's and pipe manufacturer's responsibility to design, manufacture, deliver, and install pipe in accordance with general guidelines and criteria as defined and specified herein, all in accordance with AWWA C301 and AWWA C304.
- C. Pipe manufacturer shall demonstrate current production capability for volume of work required for Project and shall have had successful fabrication of at least 50,000 linear feet of 48-inch diameter or larger pipe within past 5 years and in accordance with AWWA C301.

2.02 DESIGN AND MANUFACTURE

- A. Design Requirements
 - 1. Pressure class and inside diameter of pipe shall be as specified in Specifications or as shown on Drawings.

2. Fluid to be transported shall be potable water.
 3. Height of cover over pipe shall be 10 feet minimum, or for special applications. Pipe, specials, and fittings shall be designed for a loading condition of not less than indicated on Drawings.
 4. External live load shall be AASHTO HS-20. If indicated on Drawings, external live load (rail load) shall be Cooper E-80 for specific location.
 5. Pipe to be installed inside of tunnel casing shall be designed for full cover, including live load (a single HS-20 or railroad E-80) neglecting casing.
 6. External surcharge, if any, shall be as indicated on Drawings or as specified.
 7. Internal working pressure, P_w , shall be 150 psi (Class 150).
 8. Internal surge pressure, P_t , shall be 100 psi ($P_w + P_t = 250$ psi).
 9. Internal field test pressure, P_{ft} , shall be 1.0 P_w .
 10. Minimum value of time period of pipe exposed to outdoor environment, t_1 , for which pipe shall be designed is 365 days.
 11. Maximum relative humidity for which pipe shall be designed is 60 percent.
 12. Minimum value of time period of exposure of pipe to buried environment before water filling, t_2 , for which pipe shall be designed is 550 days. Contractor and manufacturer shall take action as necessary to ensure that design strength of the pipe is not compromised by any variations of time to installation and filling.
 13. In designing pipe, decompression pressure, P_o (which relieves final prestress in core concrete), shall be equal to, or not less than, sum of internal working pressure, P_w , and internal surge pressure, P_t .
 14. Pipe design shall be made based on materials specified and strictly in accordance with each material's prospective standards and specifications. Design base for specified material strength grade classification shall not be altered or changed from material manufacturer/supplier original designation. No change in specified concrete strength is permitted based on concrete cylinder tests.
- B. For trench conduit, external soil load shall be calculated based upon $W_d = C_d W B_d^2$. When trench width is equal to or greater than transition width, external soil load shall be calculated as embankment conduit, in accordance with AWWA M9: $K\mu=0.15$ and $r_{sd}p= 0.50$.
- C. In calculating external soil load, unit weight, W , of cover shall be 120 pounds per cubic foot with trench width as follows:

Pipe Nominal Diameter (Inches)	Trench Width (B_d)
30	7'-7"
36	8'-3"
42	8'-9"
48	9'-4"
54	10'-0"
60	10'-8"

- D. Bedding coefficients shall be Olander 90 degrees for water weight and earth/live loads. Use Olander zero degrees for pipe weight.
- E. Concrete pipe and fittings shall be designed and manufactured for the "Design Pressure," as stated previously.
- F. The whole of above Specification requirements shall apply with the following modifications or stipulations to AWWA C301 (Section references below have same numerical designation as AWWA C301):
 - 1. Sec. 4.3 – Data to Be Submitted by Manufacturer
 - a. Sec. 4.3.1 – Pipe shall not be supplied from inventory. Manufacturer shall submit detail drawings and tabulated layout schedule for review by Owner's Representative prior to delivery.
 - b. Sec. 4.3.1 – Manufacturer shall provide Owner's Representative with copies of all written quality control procedures, tests, and reports (as required by Specifications) as may be performed by manufacturer during production of pipe. Weekly inspection reports shall be submitted to Owner's Representative.
 - c. Sec. 4.3.2 – Provide a tabulated layout schedule with reference to Stationing and grade line shown on Drawings, as required by Section 1.05B.
 - 2. Sec. 4.4 – Materials
 - a. Sec. 4.4.1.1 – No fly ash or pozzolanic material shall be used to replace cement. Type II cement shall be used for cement-mortar coating and core concrete. Pozzolanic material may be used in core concrete to improve workability.
 - b. Sec. 4.4.2 – Fine aggregate for concrete and mortar shall comply with ASTM C33 and shall not contain coal or lignite.
 - c. Sec. 4.4.3 – Coarse aggregate for concrete shall comply with ASTM C33 and shall not contain coal or lignite.
 - d. Sec. 4.4.4 – Provide samples of each aggregate.
 - e. Sec. 4.4.6 – No admixture shall be used without prior review of Owner's Representative. Test data of admixtures, which manufacturer requests to use, shall be submitted to Owner's Representative for review. Any admixture used shall be chloride free.
 - f. Sec. 4.4.7.1 & 2 – Steel sheets and coils shall have a minimum yield strength of 33,000 psi.
 - g. Sec. 4.4.7.3 – Steel plates for pipe fittings shall be ASTM A283, Grade D or ASTM A36.
 - h. Sec. 4.4.8.1 – Wire for circumferential reinforcement shall conform to ASTM A648, Class II or III.
 - 1) Wire shall be tested in accordance with ASTM A648 and ASTM A370 (and Supplement IV) Specifications with the following modifications or stipulations. Tests shall be conducted on one specimen for every coil of wire for tension, bend, tensile strength, reduction of area, and wrapping tests. Reduction of area test shall meet requirement of 35 percent minimum.
 - 2) In addition to above and tests required under Sec. 4.4.8.1, bolt cutter tests shall be made for one specimen per coil of wire.
 - a) For bolt cutter test, wire specimen shall be cut twice within 3 inches and 90 degrees to each other by a sharp bolt cutter. For acceptance, there shall be no cracks or splits visible to the naked eye.

- 3) Failure of any of test specimens to comply with requirements of this Specification shall constitute grounds for rejection of coil represented by the specimen. Pipe manufacturer, at its discretion, may test three additional new samples to re-examine coil as to why it failed initial test. Should any of these specimens fail, entire coil shall be rejected.
 - 4) Pipe manufacturer shall furnish documents certifying that wire was manufactured and tested in accordance with Specifications, together with reports of test results, to Owner's Representative prior to shipment of pipe.
3. Sec. 4.5 – Design
- a. Sec. 4.5.1 – General Requirements
 - 1) Sec. 4.5.1.5 – Thickness of mortar coating shall provide a minimum cover of 3/4 inch over wire.
 - b. Sec. 4.5.2 – Design of Pipe
 - 1) Sec. 4.5.2.1 – Manufacturer shall submit to Owner's Representative design calculations and supporting test results of concrete properties used in design for review. No pipe shall be manufactured until all design calculations have been reviewed with no exceptions noted.
 - 2) Sec. 4.5.2.2 – Either Class II or Class III wire may be used. Design gross wrapping stress for both Classes of wire shall not exceed 75 percent of Class II minimum tensile strength. All prestressed pipe 48 inches in diameter and larger shall be embedded cylinder pipe.
 - c. Sec. 4.5.3 – Joint Rings
 - 1) Sec. 4.5.3.1 – General
 - a) Joint rings shall be zinc metalized. Minimum thickness of zinc metalizing shall be 0.004 inch. Joint rings shall be designed to provide minimum safety factor of 1.67, based on specified minimum yield strength of joint ring under internal design pressure plus surge pressure.
 - b) For restrained joints, joints shall be designed for internal pressure plus surge and thrust without credit given to blocking resistance. Submit design calculations for Owner's Representative's review.
 - c) Steel bell and spigot joint rings shall be within dimension tolerances permitted under Sec. 4.5.3.2. Spigot ring shall have a groove to receive, hold, and protect gasket, and joints will be self-centering when pipe is laid; therefore, gasket will not be required to support weight of adjoining pipe. Repairs of bell rings are not permitted after core is prestressed. Repair of spigot ring will be permitted if cylinder is welded to ring and weld is dye-tested after repair is made.
 - 2) Sec. 4.5.3.2 – Dimensions and Tolerances
 - a) Where specified or shown on Drawings, joints shall have double gasket for watertightness. Field pressure tests shall be conducted for each joint as pipe is placed.

- b) Steel bell-and-spigot joint rings shall be designed and fabricated so that when pipe is under various design loading. Differential deflection due to external loading and differential radial deformation (strain) – due to internal pressure loading between joint rings and prestressed pipe section – shall be kept to a minimum such that there shall be no visible cracking of mortar coating near joint area. Submit design calculations to justify proposed design for review. No visible initial shrinkage cracks of coating in joint areas, joint, and pipe interface shall be allowed. No separations of coating at joint ring shall be allowed. Each pipe shall be inspected prior to shipping. Any pipe with shrinkage, cracks, or coating separation shall be rejected.
 - c) Concrete at ends of pipe shall not extend beyond bell ring or theoretical face of concrete at spigot-end by more than 1/4-inch. Concrete beyond these limits shall be removed by grinding.
 - d. Sec. 4.5.4 – Rubber Gaskets
 - 1) Rubber gasket, or "O-ring," shall be of sufficient volume to substantially fill recess provided when pipe joint is assembled. Volume of the annular space to be occupied by gasket shall be calculated considering the tolerances on spigot groove width and depth, bell ring inside diameter, and spigot outside diameter.
 - 2) "O-ring" shall have a minimum stretch of approximately 20 percent and nominal compression of no less than 30 percent after pipe installation. Selection of "O-ring" shall meet all above three criteria. Submit design calculations to justify "O-ring" selection for Owner's Representative's review.
 - 3) If more than one size of gasket is required, manufacturer shall label each pipe joint for which type of gasket to use. Deviation from above criteria may be permitted based on history of field performance data or satisfactory field test results provided by pipe manufacturer.
 - 4) In the event that more than two gaskets are cut when attempting installation of one pipe section, installation work shall stop and shall not be resumed until pipe manufacturer's representative is on-site and problem has been resolved.
- 4. Sec. 4.6 – Fabrication
 - a. Sec. 4.6.3 – Welding Procedure Specifications
 - 1) Provide written Welding Procedure Specifications for all welding in accordance with applicable Standard.
 - b. Sec. 4.6.4 – Fabrication of Steel Cylinders
 - 1) Sec. 4.6.4.2 – When wire is wrapped directly on cylinder (lined cylinder pipe), cylinders shall have weld seams that are smooth and plain with continuous surface. Grind as required.
 - 2) Sec. 4.6.4.3 – Hydrostatic test for steel cylinder shall be performed only in presence of selected testing service inspector or manufacturer's quality control inspector. Test pressure shall be held for 1 minute or longer.
 - 3) Sec. 4.6.4.4 – All indentations and bulges in steel cylinder deviating from cylindrical surface by more than 1/4 inch shall be removed prior to placing concrete. No indentations or bulges shall be permitted in cylinder of concrete-lined cylinder pipe that would cause more than 1/16 inch of clear space between prestressing wire and cylinder after wrapping.

- c. Sec. 4.6.5 – Concrete for Pipe Core
 - 1) Sec. 4.6.5.2 – A minimum of 6.5 sacks (611 lbs.) of cement shall be used per cubic yard of concrete. Water-cement ratio shall not exceed 0.44. Submit concrete mix designs to Owner's Representative.
 - 2) Sec. 4.6.5.4 – Temperature of mix shall not exceed 90°F at time of placement.
 - 3) Sec. 4.6.5.8 – Concrete 28-day compression strength for core concrete shall be limited to $f'_c = 5,400$ psi for cast concrete and $f'_c = 6,900$ psi for spun concrete.
 - a) Concrete test cylinders shall be in accordance with ACI 318, Sec. 5.6.3.3, and no single test cylinder shall be less than f'_c .
- d. Sec. 4.6.7 – Placing of Wire Reinforcement
 - 1) Sec. 4.6.7.1 – At end wraps, all prestress wires shall have a clear distance separation of at least 1/16 inch. Adjacent wires shall not touch at any point except at end of pipe, not more than 1 1/2 inches or less than 1 inch from edge of core to be coated with full depth of mortar coating. Splices in prestress wire shall not be closer than 3 feet, as measured along longitudinal axis of pipe.
 - 2) Sec. 4.6.7.1 – Temperature of cores shall be at least 35°F and free of any frozen particles at time of prestressing. Concrete core shall be properly saturated and surface dry at time cement slurry and prestressing wire are applied. Concrete core shall be thoroughly cleaned prior to wrapping. Pipe manufacturer shall be required to demonstrate that procedure will remove laitance and form release agent from pipe surface, but not cause protrusions of aggregate on surface, which would cause stress concentrations in prestressing wire.
- e. Sec. 4.6.8 – Pipe Coating
 - 1) Sec. 4.6.8.1 – Coating shall be applied within 16 hours after prestressing. If manufacturer has not applied coating within time period, pipe shall be protected and shall show no sign of rust, scale, flaking, or pitting on prestress wires at time of coating. Temperature of pipe shall be at least 40°F at time of coating.
 - 2) Sec. 4.6.8.2 – Mortar for coating shall consist of at least one-part cement to not more than 2 1/2-parts fine aggregate by weight. Design compressive strength of mortar coating shall be limited to $f_{mc} = 5,500$ psi. Mortar coating shall be rounded at ends to avoid thinning of mortar at ends.
 - 3) Sec. 4.6.8.4 – All pipe detected with delamination, hollows, and cracks in coating shall be rejected.
- f. Sec. 4.6.10 – Cracks in Pipe
 - 1) Sec. 4.6.10.2 – Concrete cores which have circumferential cracks greater than 0.04 inch in width shall be repaired with cement or epoxy grout. Concrete cores with visible longitudinal cracks shall be rejected.
- g. Sec. 4.6.11 – Repair of Concrete or Mortar
 - 1) Sec. 4.6.11 – Repairs shall not be permitted without specific prior review of Owner's Representative as to degree of damage, materials, methods, and curing to be used. Prior to pipe repair, standard repair procedures shall be submitted to Owner's Representative for review and stamped "No Exception Noted" or "Exceptions Indicated - Revise and Resubmit for Record Purposes Only."

5. Sec. 4.7 – Fittings and Special Pipe

a. Sec. 4.7.1 – General

- 1) Special fitting details shall be furnished by manufacturer for Owner's Representative review.
- 2) Prestressed concrete cylinder pipe crossing a major waterway – for example, a large stream, river, or channel – shall be designed for negative buoyancy and no allowance shall be taken for earth cover in buoyancy calculation.

b. Sec. 4.7.2 – Fittings

- 1) Sec. 4.7.2.1 – Fittings, flanged pipes, and special pipes – including manhole and blow-off nozzles – shall be designed for same design condition as pipe specified in this Section and Section 33 11 02 – STEEL PIPE, and in accordance with AWWA C200 and AWWA C208.
- 2) Sec. 4.7.2.3 – Interior lining and exterior coating shall be wire fabric reinforced mortar and have minimum thickness of 3/4 inch and 1 1/2 inches, respectively. Inside diameter of fittings shall be smooth and the same as pipe. For outlets and connections, see Section 4.7.4. All exposed steel surfaces not lined or coated with mortar shall be painted with liquid epoxy, in accordance with AWWA C210. Any areas abraded in handling shall be touched up in field.
- 3) Sec. 4.7.2.4 – Interior and exterior surfaces of outlets and connections shall be lined and coated with reinforced mortar as specified in Section 4.7.2.3 for sizes larger than 12 inches. For sizes 12 to 36 inches, thickness of reinforced mortar lining shall be a minimum of 3/8 inch. Mortar shall contain not less than one-part cement to 2 1/2-parts fine aggregate by weight. Interior of all outlets and connections 6 inches and smaller shall be painted with liquid epoxy, in accordance with AWWA C210.

c. Sec. 4.7.4 – Outlets and Connections on Pipe

- 1) Connections for air valves, blow-offs, and other branches larger than 2 inches and less than 12 inches in diameter may be designed and constructed in accordance with Section 4.7.2 with Owner's Representative approval.
- 2) Changes in alignment or grade may be made by deflecting joints of straight pipe or using beveled end pipe, unless single bend fittings are called for on Drawings. Joint openings shall not exceed one-half of maximum opening recommended by pipe manufacturer.
- 3) Pipe joints in vicinity of bend fittings and bevel pipes 2 degrees and greater shall be restrained for distances, as tabulated on Drawings. All fittings and bevel joints shall be furnished with restrained joints.

6. Sec. 5.1 – Inspection and Testing by Purchaser

a. Sec. 5.1.1 – Inspection at Manufacturer's Plant

- 1) Owner's Representative retains right to observe pipe, fittings, all Work performed, and all materials furnished under Contract at manufacturer's plant. During inspection, Owner's Representative shall have free access to those parts of manufacturer's plant that are necessary to ensure compliance with Standard. Manufacturer shall make available gauges necessary for inspection. Manufacturer shall provide Owner's Representative with assistance for handling of pipe and fittings, as necessary. Prior to shipment, each piece of pipe and each fitting may be inspected and stamped by Owner's Representative for their compliance with Specifications.

- b. Sec. 5.1.2 – Inspection of Test Reports
 - 1) Provide to Owner's Representative all test reports required for cylinder assembly, concrete, mortar coating, steel wire, joint, and gasket, as required by Section 1.04F.
 - 7. Sec. 6.3 – Affidavit of Compliance
 - a. Manufacturer shall provide an affidavit that pipe and fittings furnished under Contract comply with all applicable provisions of AWWA C301.
 - 8. Provisions for Corrosion Monitoring and Control System: Provide the following provisions for corrosion monitoring and control system:
 - a. Each pipe segment and fitting shall be provided with a minimum of two bonding plates (14 gauge x 3 inches minimum at 30 degree angle from top) at each end. Bonding plates shall have electrical conducting capacity equivalent to No. 2 copper cable. Bonding plates shall be suitable to accept thermite brazed connections of No. 2 copper cables, each bonded as shown on Drawings.
 - b. For embedded cylinder type pipe, positive bonding connection between bonding plates and prestressing wire is required. A minimum of two 1/32- x2-inch steel shorting straps (180 degrees apart) shall be provided under each layer of prestressing wire with welded connection to bell-and-spigot rings.
 - 9. Based upon chloride test results, which must be received by Owner's Representative prior to laying any pipe, Owner's Representative may designate portions of pipeline to receive an exterior protective coating. Coating system shall be a two-coat vinyl ester system. Primer shall be Tnemec's Vinester Series 120-5002 and topcoat shall be Tnemec's Vinester Series 120-5001. Each coat shall have dry film thickness of 12 to 18 mils. All painting of pipe shall be done strictly in accordance with paint manufacturer's instructions, and all painting shall be performed at pipe manufacturer's plant. Concrete pipe shall be aged for minimum length of time, as recommended by paint manufacturer, before being painted. Any damage to coating shall be touched up with two coats of paint.
- G. Furnished With Pipe
- 1. In addition to straight lengths of pipe, there shall be furnished (within Contract Unit Prices for installed pipe) all fittings, elbows, bends, tees, shorts, reducers, access manholes, special fittings, and wall pieces for manholes – all types of adapters, beveled pipe, outlets, closures, night-caps, plugs, bolts, nuts, etc. – required for complete pipeline construction, not only as shown on Drawings, but also as required by field conditions during construction. Blow-off connections and air valve connections may be fabricated into full pipe lengths where possible with Owner's Representative's approval.
 - 2. Furnish all rubber gaskets, all special materials required for making of joints, and all special materials required to be incorporated in certain pieces of pipe or fittings, such as materials for restrained joints, etc., as shown on Drawings.
 - 3. Pipe supplier shall furnish (within Contract Unit Prices for installed pipe) at no extra cost to Owner, all required closure pieces, shorts, half and full bevel adapters, and all other types of fittings; which, though not specifically called for on Drawings, may still be required by field conditions during construction. Wire mesh required to finish installation of closure pieces shall be supplied by manufacturer.
- H. Wall Pipes
- 1. When connecting a prestressed concrete pipe to a ductile iron pipe, wall pipes shall be ductile iron, in accordance with Section 33 11 03 – DUCTILE IRON PIPE. When connecting a prestressed concrete pipe to a prestressed concrete pipe or a steel pipe, steel wall pipes shall be provided, in accordance with Section 33 11 02 – STEEL PIPE.

I. Restrained Joints

1. Unbalanced forces at pipe bends, tees, valves, etc., shall be restrained by transmitting those forces to pipe wall by means of flexible-tied jointing systems, which shall be accomplished at joint and not between joints. Restrained joint system to be used shall be bell bolt, snap ring, and harnessed clamp type flexible-tied joints, or approved equal. Welding of joints shall not be permitted. Restrained joint materials shall be non-corrosive.
2. Each restrained joint pipe cylinders and steel joint rings shall be designed to withstand and transmit whole angle component of longitudinal thrust force caused by deflection angle, Δ , in accordance with AWWA M9, from pipe pressure of working plus surge, as specified in this Section.
 - a. Required length for restrained pipe on each side of valves, bends and bevel pipes, or tees shall be calculated in accordance with AWWA M9 (latest edition) and shall meet or exceed lengths shown on Drawings.
 - b. All bevel joints shall be restrained as shown on Drawings. Reduction of design longitudinal thrust force along pipeline from maximum thrust point will be permitted. Maximum longitudinal cylinder tensile stress shall have minimum factor of safety of 1.67, based on minimum steel plate yield strength.
 - c. Joint ring circumferential welded joint maximum shearing stress shall not exceed 75 percent of maximum allowable stress of welds, in accordance with applicable AISC Specification.
 - d. Submit design calculations of restrained joint pipes and fittings to Owner's Representative. In designing restrained joints, combined effect of both longitudinal thrust force and radial hoop tensile force (caused by design internal pressure plus surge pressure) shall be considered. Restrained joint system shall have minimum safety factor of 1.67.
 - 1) Soil Type IV.
 - 2) Use minimum soil cover over the entire restrained area.
 - e. Design calculations shall be submitted for Owner's Representative's review. In lieu of satisfactory design calculations, satisfactory restrained joint test results, as specified in Subsection 1.04E, will be accepted.

J. Flanged Joints

1. Concrete pipe flange joints shall be compatible with flange joints specified for ductile iron pipe and valves. Concrete pipe flanges shall have same dimensions as steel pipe and/or valve flanges. Steel flanges shall be in accordance with AWWA C207, Class D.
2. For pipe connected to valves, drilling shall be in accordance with ANSI B16.1, Class 125, or as required. All bolts for buried flange joints shall be COR-TEN type corrosion-resistant steel (CRS).

K. Bolts, Studs, and Nuts

1. All bolts, studs, and nuts shall be in accordance with Section 05 55 00 – BOLTS, ANCHOR BOLTS, AND EXPANSION ANCHORS
2. Cathodic Protection Refer to Section 13 47 13 – CATHODIC PROTECTION.

PART 3 - EXECUTION

3.01 CLEANING AND INSPECTION

- A. Thoroughly clean and dry interior of pipe and fittings of foreign matter before installation and keep interior clean until Work has been accepted. Keep joint contact surfaces clean until jointing is completed. Do not place debris, tools, clothing or other materials in pipe. After pipe laying and joining operations are completed, clean inside of pipe and remove debris.
- B. Before installation, inspect each pipe and fitting for defects. Reject defective, damaged or unsound pipe and fittings and remove them from site.

3.02 INSTALLATION

- A. Do not install pipe without approved lay schedule.
- B. Manufacturer will make available services of representative throughout project duration when deemed necessary by Owner's Representative to advise aspects of installation; including, but not limited to, handling, storing, cleaning and inspecting, coatings and linings repairs, and general construction methods affecting pipe.
- C. Gasketed pipe joints shall be checked around entire circumference with feeler gauge to ensure gasket remains seated in the spigot groove. If displacement has occurred, remove pipe section and remake joint as if for new pipe. Remove old gasket and replace before remaking joint.
- D. In addition to pipe manufacturer's installation guide, the following requirements shall be met:
 - 1. Pipe manufacturer may provide Contractor with suitable lifting devices to be used during pipe unloading operations, to move pipe, to place pipe in trench, or during any other pipe handling operations. Prior approval of pipe manufacturer and Owner's Representative shall be required for lifting devices not furnished by manufacturer.
 - 2. Pipe shall be unloaded, handled, and placed using padded slings or other lifting devices furnished by pipe manufacturer to prevent damage to interior and exterior coating.
 - 3. Joint deflection in field to correct alignment shall be limited to one-half of maximum amount recommended by pipe manufacturer.
 - 4. 1/2-inch minimum joint gap, measured on inside of completed pipe, is required for mortar-filled joint.
- E. Protection of Pipeline:
 - 1. Securely place stoppers or bulkheads in openings and in end of line when construction is stopped temporarily and at end of each day's work.
- F. BEDDING AND BACKFILLING
 - 1. Conform to requirements of Section 31 23 16 – EXCAVATION, BACKFILL, AND COMPACTION FOR UTILITIES.
 - 2. Align pipe at proper grade prior to joint connection and do not shift after jointing operation has been completed.
 - 3. Do not move trench support system (trench safety system) once bedding material is compacted.
 - 4. Excavate outside specified trench section for bell holes and for spaces sufficient to permit removal of slings. Provide bell holes at proper locations for unrestricted access to joint. Form bell holes large enough to facilitate joint wrapping and to permit visual examination of process. Enlarge bell holes as required or directed by Owner's Representative. Subsequent backfilling, thereof, will not be considered as authorized additional excavation and backfill. Backfill bell holes and spaces to satisfaction of Owner's Representative.

5. Remove blocking after placing sufficient backfill to hold pipe in position.
6. Use CLSM in areas of trench excavation 16 feet and greater as embedment material up to springline of pipe.
- G. Follow manufacturer's specifications for nonshrink grouting.
- H. Install each pipe section in sequence identified on lay schedule. Deviations from lay schedule sequence shall be approved by Owner's Representative and denoted on final lay schedule.
- I. Static Electricity
 1. Properly ground pipeline during construction as necessary to prevent build-up of static electricity.
 2. Electrically test, where required, after installation of pipeline is complete.

3.03 CLOSURES AND APPROVED PIPE MODIFICATIONS

- A. No modifications of standard pipe for closures will be permitted in the field.
- B. Pipe manufacturer's representative and Owner's Representative to entirely witness closures and approved pipe modification efforts.
- C. If a butt strap is being used to complete a closure the provide minimum lap of 4 inches between member being joined and edge of butt strap. Weld on both interior and exterior, unless otherwise approved by Owner's Representative.
- D. Provide full circumferential welds on closure joints required to be welded. Owner's Representative will employ an independent certified testing laboratory to perform weld tests on field welds. Use magnetic particle test method for lap welds (or X-ray methods for butt welds) for 100 percent of joint welds. Maintain records of tests. When defective weld is revealed, repair defective weld and retest. Use wire and flux from same manufacturer throughout entire Project.
- E. Fill wrapper in field and allow excess grout water to seep out. Refill wrapper as necessary. When joint mortar level has stabilized and begun to mechanically stiffen, place Ethafoam wrapper over top of joint and secure in place.
- F. Stretch test each gasket splice to twice its unstretched length and inspect for defects.

3.04 VISIBLE CRACKS

- A. No visible cracks longer than 6 inches, measured to be within 15 degrees of line parallel to pipe longitudinal axis, are permitted except:
 1. In surface laitance of centrifugally cast concrete,
 2. In sections of pipe with steel reinforcing collars or wrappers, OR
 3. Within 12 inches of pipe ends.
- B. Repair interior lining cracks that exceed 1/16 inch (0.0625 inch) wide.
- C. Reject pipe with exterior coating cracks that exceed 0.01 inch wide.
- D. Immediately remove pipe from Site when pipe has cracks exceeding limitations and cracks are not repairable.

3.05 FIELD REPAIR PROCEDURES FOR COATING AND LINING

- A. Areas less than or equal to 6 inches in diameter: Patch honeycomb and minor defects in concrete surfaces with nonshrink grout. Use only manual or small (low pressure) air chisels to chip away mortar coating or lining. Cut out unsatisfactory material and replace with nonshrink grout, securely bonded to existing coating or lining. Finish junctures between patches and existing concrete as inconspicuous as possible. Strike off nonshrink grout flush with surrounding surface after patch has stiffened sufficiently to allow for greatest portion of shrinkage. Finish surface in accordance with lining requirements.
- B. Pipe with defective coating areas greater than 6 inches in diameter cannot be used. Immediately remove pipe from Project.
- C. Reject pipe when steel cylinder is dented while making field repair. Immediately remove pipe from Project.

3.06 SURVEYING

- A. Use adequate surveying methods and procedures and employ competent personnel to ensure pipe sections are laid to line and grade and within stipulated tolerances. Measure and record, in form approved by Owner's Representative, in-place survey data for pipe laid each day and submit data to Owner's Representative in accordance with Section 01 30 01 – DIGITAL UTILITY DATA COLLECTION and Section 01 31 00 – PROJECT MANAGEMENT AND COORDINATION.

3.07 PHOTOGRAPH AND VIDEO REPORTING OF PIPE JOINTS

- A. Each completed pipe joint shall be photographed by Owner's Representative. Contractor shall notify Owner's Representative when joints are complete, prior to backfilling pipe. Contractor shall mark date that joint was completed and initials of foreman next to factory painted pipeline station number. Lettering size shall be same as used for pipe stationing number.
- B. Owner's Representative will provide internal pipe joint video report for the pipeline. Video report shall show full circumference of each joint with pipe mark number and station number labeled or identified by voice. Date and time shall be recorded on video.
- C. Contractor shall coordinate with Owner's Representative upon completion of pipe joints and provide access to pipe for visual observation and documentation.

3.08 HYDROSTATIC TESTING

- A. Pipe shall be hydrostatically tested in accordance with AWWA C607.
 - 1. Maximum allowable leakage for pipe with gasketed joints shall not exceed requirements of AWWA C607.
 - 2. No leakage shall be allowed for pipe with welded joints.
 - 3. All visible leaks shall be repaired regardless of the amount of leakage.

3.09 DISINFECTION

- A. Disinfection of water main pipe shall be performed in accordance with AWWA C651.

END OF SECTION

33 11 02 STEEL PIPE

PART 1 - G E N E R A L

1.01 SUMMARY

- A. This Section includes requirements for providing supervision, labor, material, tools, equipment, testing, training, and related items to install and place in operation steel pipe for water mains 6 inches and larger.
- B. Extent of steel piping is shown on Drawings and in Schedules.

1.02 RELATED WORK

- A. Section 01 22 00 – UNIT PRICES
- B. Section 01 33 00 – SUBMITTAL PROCEDURES
- C. Section 01 40 00 – QUALITY REQUIREMENTS
- D. Section 13 47 13 – CATHODIC PROTECTION
- E. Section 33 23 16 – EXCAVATION, BACKFILL, AND COMPACTION FOR UTILITIES

1.03 REFERENCES

- A. AASHTO HS-20 – Loading Design Specifications.
- B. AMPP – Associated for Materials Protection and Performance
- C. ANSI B16.1 – Gray Iron Pipe Flanges and Flanged Fittings: Classes 25, 125, and 250.
- D. ANSI/AISC 360 – Structural Steel Buildings.
- E. ANSI/ASME Boiler and Pressure Vessel Code, Sec. IX.
- F. ANSI/AWS B2.1 –Welding Procedure and Performance Qualification.
- G. ANSI/AWS D1.1 – Structural Welding Code – Steel.
- H. ANSI/AWS D1.3 – Structural Welding Code – Sheet Steel.
- I. ANSI/NSF 61 – Drinking Water System Components – Health Effects.
- J. ASTM A6 – General Requirements for Rolled Structural Steel Bars, Plates, Shapes, and Sheet Piling.
- K. ASTM A36 – Carbon Structural Steel.
- L. ASTM A139 – Electric-Fusion (Arc)-Welded Steel Pipe (NPS 4 and Over).
- M. ASTM A572 – High-Strength Low-Alloy Columbium Vanadium Structural Steel.
- N. ASTM A1018 – Steel, Sheet and Strip, Heavy-Thickness Coils, Hot-Rolled, Carbon, Commercial, Drawing, Structural, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength.
- O. ASTM C33 – Concrete Aggregates.
- P. ASTM C150 – Portland Cement.
- Q. ASTM C595 – Blended Hydraulic Cements.
- R. ASTM D1557 – Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2,700 kN-m/m³)).
- S. AWS D1.1 – Structural Welding Code – Steel.

- T. AWS QC1 – AWS Certification of Welding Inspectors.
- U. AWWA C115 – Flanged Ductile-Iron Pipe with Ductile-Iron or Gray-Iron Threaded Flanges.
- V. AWWA C200 – Steel Water Pipe, 6-Inches (150 mm) and Larger.
- W. AWWA C205 – Cement-Mortar Protective Lining and Coating for Steel Water Pipe 4 In. (100 mm) and Larger.
- X. AWWA C206 – Field Welding of Steel Water.
- Y. AWWA C207 – Steel Pipe Flanges for Waterworks Service, Sizes 4 In. Through 144 In. (100 mm Through 3,600 mm).
- Z. AWWA C208 – Dimensions for Fabricated Steel Water Pipe Fittings.
- AA. AWWA C209 – Cold-Applied Tape Coatings for Steel Water Pipe, Special Sections, Connections, and Fittings.
- BB. AWWA C210 – Liquid-Epoxy Coatings and Linings for Steel Water Pipe and Fittings.
- CC. AWWA C216 – Heat-Shrinkable Cross-Linked Polyolefin Coatings for Steel Water Pipe and Fittings.
- DD. AWWA C218 – Liquid Coatings for Aboveground Steel Water Pipe and Fittings.
- EE. AWWA C222 – Polyurethane Coatings and Linings for Steel Water Pipe and Fittings.
- FF. AWWA C602 – Cement-Mortar Lining of Water Pipelines in Place – 4 In. (100 mm) and Larger.
- GG. AWWA M11 – Steel Pipe: A Guide for Design and Installation.
- HH. SSPC-SP 1 – Surface Preparation Standard No. 1 – Solvent Cleaning.
- II. SSPC-SP 10 – Surface Preparation Standard No. 10 – Near-White Metal Blast Cleaning.
- JJ. SSPC-SP 11 – Surface Preparation Standard No. 11 – Power-Tool Cleaning to Bare Metal.
- KK. SSPC-VIS 1 – Guide and Reference Photographs for Steel Surfaces Prepared by Dry Abrasive Blast Cleaning.

1.04 QUALITY ASSURANCE

- A. All steel pipe and fittings shall be furnished by manufacturers who are fully experienced, SPFA or IOS 9000-2000 certified, reputable, and qualified in manufacture of products to be furnished.
- B. Quality Assurance Tests
 - 1. After joint configuration is complete, regardless of quality of steel selected for use, each length of pipe shall be shop-tested hydrostatically to a pressure which will induce hoop stress equal to at least 75 percent of yield stress of steel. Daily certified reports of hydrostatic tests shall be submitted to Owner's Representative on a weekly basis.
 - 2. All fittings, specials, and appurtenances shall be hydrostatically tested or tested using Nondestructive Testing (NDT) in accordance with AWWA C200 if fabricated from previously hydrostatically tested straight pipe. Submit test reports to Owner's Representative.
 - 3. All quality control tests conducted by manufacturer for each production run of pipe shall be submitted to Owner's Representative on a weekly basis.
 - 4. Mill test reports of all steel plates, sheets, or coils used in fabrication of pipe, fittings, specials, and appurtenances shall be submitted to Owner's Representative.
- C. All rejected materials shall be plainly marked and shall be replaced by the Contractor to meet requirements of Specifications, without additional cost to Owner's Representative.

- D. Contractor is responsible for quality and inspection of field welds meeting requirements of AWWA C206.
- E. Owner's Representative may provide a welding inspector, at their discretion, for independent verification of welds. Welding inspector shall have prior pipe welding experience and shall be a certified welding inspector (CWI), in accordance with AWS QC1.
- F. Provide administrative documents showing that QA/QC personnel in both shop and field are certified as AMPP/NACE International Coating Inspector (Level III).

1.05 SUBMITTALS

- A. Conform to requirements of Section 01 33 00 – SUBMITTAL PROCEDURES.
- B. Design Calculations
 - 1. All design calculations shall be signed and sealed by a Professional Engineer licensed in the State of Illinois.
 - 2. Manufacturer's pipe design calculations shall be submitted with Contractor's Bid Documents.
- C. Pipe Manufacturer's Submittals
 - 1. Detailed drawings of pipes, specials, fittings, and joints with design calculations for internal pressure, vacuum, and external load conditions.
 - 2. Design calculations for non-restrained and restrained joints, and rubber gasket reports and gasket sizing calculations.
 - 3. Tabulate laying schedules corresponding to serial numbers and/or identification numbers to be painted on pipes, specials, and fittings.
 - 4. Quality assurance test procedures and test reports for pipes, specials, and fittings (as specified under Subsection 1.04B).
 - 5. Quality control test reports for each production run of pipe, including production welds, welding operator tests, and mill test reports of all steel plates, sheets, and other materials used.
 - 6. Manufacturer's installation guide.
 - 7. Certificates of compliance with Contract Specifications; for example, Certificate of Design. Certificates shall include:
 - a. Pipes, specials, and fittings, in accordance with AWWA C200 and AWWA C208.
 - b. Cement-mortar protective interior lining, in accordance with AWWA C205 or AWWA C602.
 - c. Polyurethane coating for exterior, in accordance with AWWA C222.
 - d. Paint system for exterior, in accordance with AWWA C210 or C218.
 - e. Manufacturer's standard repair procedures.
 - f. Manufacturer's written quality control procedures.
 - g. Manufacturer's written statement that pipe will meet an $\epsilon = 0.005$ ft. (ϵ is defined as specific surface roughness) or Hazen-Williams coefficient (C) value in accordance with AWWA M11.
 - 8. Certificates of Compliance certifying:
 - a. Compliance with NSF/ANSI 61 Standards and certified to be lead-free.
 - b. Compliance with American Iron and Steel (AIS).

9. No pipe, special section, or fitting shall be manufactured until Drawings and design calculations have been reviewed, with no exception noted or stamped "Exceptions as Noted – Resubmit for Record Purpose Only."

D. Field Welding Report

1. Welding Reports for each field-welded joint shall be submitted and signed to Owner's Representative daily by welding inspector. Welding Report shall include:
 - a. Weld joint station number.
 - b. Date of weld.
 - c. Welder's name and signature.
 - d. Actual weld size at four quadrants of pipe and total number of weld passes.

1.06 MEASUREMENT AND PAYMENT

- A. Refer to Section 01 22 00 – UNIT PRICES.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Deliver Products to Site to store and protect.
- B. Pipe fittings shall be handled by padded slings or manufacturer's approved devices, which will not damage pipe exterior coating or mortar lining.
- C. Rolling or sliding of pipe shall be prohibited under all circumstances, regardless of provisions made to protect pipe. Any pipe dropped shall be returned to manufacturer plant.
- D. Pipe shall be studded for shipping as required by manufacturer's recommendations to maintain pipe roundness of ± 1 percent and provide temporary plastic end caps on all pipe and fittings.
- E. Provide padded bolsters on trucks or rail cars to spread load and provide uniform support.
- F. All pipe and fittings damaged in shipment or by handling at Job Site prior to placement shall be returned to fabrication plant for approved repairs.
- G. Pipe shall be strung along route of pipeline to satisfaction of Owner's Representative and shall be protected by pipelaying Contractor with proper lights, barricades, etc.
- H. Pipe shall be stored on padded skids, sand dirt berms, sandbags, old tires, or other suitable means so that coating will not be damaged.

1.08 WELDING MATERIALS AND PROCEDURES

- A. Conform to AWS D1.1, D1.3; ANSI/ASME Boiler and Pressure Vessel Code, Sec. IX; AWWA C206; and applicable State Labor Regulations. Welding procedures shall be required for (but not limited to) longitudinal and girth or spiral welds for pipe cylinders, spigot-and-bell ring attachment, reinforcing plates, outlet reinforcement, ring flange welds, and plates for lug connections.
- B. Contractor or manufacturer shall certify that all welders have been tested and maintain current qualification in accordance with ANSI/ASME Boiler and Pressure Vessel Code Sec. IX or ANSI/AWS B2.1.

PART 2 - PRODUCTS

2.01 GENERAL

- A. Pipe manufacturer shall demonstrate current production capability for volume of work required for this Project and shall have had successful fabrication to AWWA C200 Standards of at least 50,000 linear feet of 48-inch diameter or larger pipe within past 5 years.

2.02 STEEL PIPE DESIGN

- A. All steel pipe, specials, and fittings shall be designed as herein specified and shall be manufactured in accordance with minimum wall thickness, as shown in Subsections 2.02E and 2.02F of this Specification, all in accordance with AWWA C200 and AWWA M11.
- B. Unless otherwise shown on Drawings, all specials and fittings shall conform to dimensions of AWWA C208. Fittings shall be of same material and minimum thickness as pipe.
1. Minimum radius of elbows shall be 2.5 times the pipe diameter, and maximum miter angle on each section of elbow shall not exceed 11 1/4 degrees.
 2. If elbow radius is less than 2.5 times the pipe diameter, stresses shall be checked per AWWA M11 and wall thickness shall be increased as required.
 3. Fittings shall be equal in pressure design strength and shall have same lining and coating as abutting pipe.
 4. Specials and fittings, unless otherwise shown on Drawings, shall be made of segmentally welded sections from hydrostatically-tested pipe with end compatible and type of joint or coupling specified for pipe.
- C. Design Pressure
1. Internal Pressure

	Class 150
Working Pressure (psi)	150
Surge Pressure (psi)	100
Total Transient Pressure (psi)	250
Field Test Pressure (psi)	150

2. Vacuum: Collapse vacuum pressure of -14.7 psi. Design with trench soil compacted to 95 percent of maximum density, per ASTM D1557, and a minimum factor of safety 2.0, based on actual external loading [10-foot minimum] plus vacuum of -14.7 psi. Proper credit may be given to cement-mortar lining.
3. External Loading: Minimum 10-foot depth of cover or as indicated on Drawings at 120 pounds per cubic foot soil weight with one AASHTO HS-20 truck. If indicated on Drawings, external load (rail load) shall be Cooper E-80. Water table shall be at ground surface.
4. Deflection: Maximum deflection shall be 2 percent of pipe diameter.

5. Where Drawings show depth of cover exceeds 10 feet or for special applications, pipes, specials, and fittings shall be designed for loading condition of not less than indicated on Drawings. Pipes to be installed inside of tunnel casing shall be designed for full cover, including live load (HS-20 or railroad E-80, neglecting casing).

D. Design Stress and Materials

1. Steel plate for all fabricated pipe, specials, and fittings shall, unless otherwise specified in Specification, conform to latest edition of one of the following: ASTM A1018, Gr 36 minimum; ASTM A572, Grade 42; ASTM A36; ASTM A139, Grade C. Maximum tensile stress under design internal working pressure shall not exceed 50 percent of minimum specified yield strength of material. Combined design internal working pressure of 150 psi plus water hammer of 100 psi shall not exceed 75 percent of minimum specified yield strength of material for all unburied and buried pipe, specials, and fittings.

E. Diameter or Size of Pipe

1. Unless otherwise specifically stated in Drawings, Specifications, or both, nominal diameter shall mean inside diameter (I.D.) of pipe after lining, except for pipe 12 inches and smaller. Pipe manufacturer shall provide dimensions of outside diameter of each pipe supplied.

F. Minimum Wall Thickness

1. All pipe, specials, and fittings shall be designed in accordance with specified design pressure, design stress, and materials and shall have the following minimum wall thickness, in accordance with ASTM A6. No pipe shall have walls less than minimum due to tolerances.

Water Main Pipe	
	Minimum Wall Thickness¹
Nominal Pipe Diameter (Inch)	Unburied² (Inch)
60	0.468
54	0.422
48	0.376
42	0.330
36	0.284
30	0.250

Note 1: Wall thickness shall be designed based on specified internal pressure, collapse vacuum pressure, and external loads, and shall not be less than minimum thickness shown above.

Note 2: Including all pipe installed inside of tunnel casing pipe and vaults.

Note 3: Wall thickness may be calculated using AWWA M11. For calculating earth load, use Equation 5-3.

Note 4: For pipe wall thickness greater than 1/2 inch in buried pipe and inside tunnel casing, Charpy V-notch impact test shall be at 25 pound-foot average at 30°F.

G. Design and Manufacture

1. Steel pipe, specials, and fittings shall be designed and manufactured in accordance with specified design pressure, materials, and stresses.
2. Steel pipe crossing a major waterway such as a large stream, river, or channel shall be designed for negative buoyancy by concrete encasement, or other approved means, and no allowance for earth cover in buoyancy calculation.
3. AWWA C200 and AWWA C208 shall apply, except as specified under these Specifications, with the following modifications or stipulations. The following Sections have same numeral designation as AWWA C200:
 - a. Sec. 4.3 – Submit design detail drawings of pipe, specials, fittings, and joints to Owner's Representative for review.
 - b. Sec. 4.4 – Submit design calculations of pipe, specials, fittings, and joints to Owner's Representative for review.
 - c. Sec. 4.12 – Protective Lining and Coating of Pipe, Specials, and Fittings
 - 1) Lining: Interior of all pipes, specials, and fittings shall have cement-mortar lining.
 - a) Cement-Mortar Lining: All pipe shall be cement-mortar lined in shop with centrifugally spun lining, in accordance with AWWA C205. All specials and fittings shall be cement-mortar lined in shop, in accordance with AWWA C205. Field joints shall be made in accordance with AWWA C205, Sec. 4.7.
 - b) No pozzolanic material shall be used to replace cement. Interior of all outlets and connections smaller than 12 inches shall be painted with liquid epoxy, in accordance with AWWA C210.
 - c) Fine aggregate for lining shall comply with requirements of ASTM C33 and shall not contain coal or lignite.
 - 2) Coating
 - a) All material, procedures, etc. shall conform to applicable AWWA Standards and coating manufacturer's recommendations. Overlap factory-applied coating system with pipe manufacturer's specified heat-shrink sleeve system by minimum 6 inches.
 - b) Buried Pipe, Specials, and Fittings:
 - i. All buried specials and fittings shall be coated with polyurethane, in accordance with AWWA C222. Total thickness of 35 mils and materials used for coating shall be compatible with coating applied to pipe.
 - ii. Finish Coat color shall be approved by Owner's Representative.
 - c) Unburied Pipe, Specials, and Fittings:
 - i. All unburied pipe (i.e. exposed, in vaults), specials, and fittings, which will be exposed after installation, shall receive one coat of rust-inhibitive primer, in accordance with AWWA C218.
 - ii. Pipe shall be coated with epoxy coating system, in accordance with AWWA C210.
 - iii. Total thickness of coating shall not exceed manufacturer's recommended maximum dry film thickness.

- iv. Finish Coat color shall match adjacent buried piping, or as approved by Owner's Representative.
- d) Provide shop-applied rust-inhibitive primer on coating holdback areas at joint in accordance with type of joint utilized.
- e) Pipe ends, fittings, and specials, which require field heat-shrink sleeves, shall have their pipeline station number painted near joint at 2:00 or 10:00 position. Size of lettering for stationing shall be readable when a photograph is taken of completed joint.
- f) Heat-Shrink Joint Sleeves for Polyurethane Coating
 - i. Provide heat-shrink (cross-linked polyolefin wrap or sleeve with a mastic sealant) suitable for pipeline operating temperature, in accordance with AWWA C216. Provide Canusa-CPS's "Aqua-Shield," Seal For Life's "Covalence," or approved equal. Where weld-after-backfill procedures are used, conform to manufacturer's recommendations for installation.
- g) Field-Applied Heat-Shrink Sleeves: Contractor shall select between two options for method of application of joint heat-shrink sleeves:
 - i. Welding Before Sleeve: First option is to weld joint, then apply exterior joint sleeve. Wrap joints with heat-shrink sleeve system conforming to AWWA C216. Overlap factory-applied coating system with a sleeve minimum of 6 inches.
 - ii. Sleeve Before Welding: Second option is to apply heat-shrink sleeve for post-welding, backfill trench, and then weld joint from pipe interior. Wrap joints with heat-shrink sleeve as recommended by pipe manufacturer.
 - iii. For either option, Contractor shall be responsible for its operations so that no damage is done to mortar lining or coating system (factory-applied or joint-shrink sleeve).
 - iv. If second option is chosen, Contractor shall provide to Owner's Representative documentation necessary to prove validity of method and demonstrate that operation will not damage polyurethane coating system or the field-applied shrink-sleeve.
 - v. Contractor will be required to fully uncover up to a total of ten joints selected at random, at Owner's Representative discretion, to visually inspect joints after welding from pipe interior. Inspection of welds' interior and exterior is to check integrity of welding and heat-shrink sleeve.
 - vi. If Contractor's welding procedure causes damage to heat-shrink sleeve, Contractor shall uncover all joints installed prior to test (or between this test and a prior test) to inspect joints and repair as required. Contractor, at option of Owner's Representative, may be allowed to modify welding procedure or be required to perform welding before applying heat-shrink sleeve to joint.
 - vii. If Contractor is required to change welding procedure before heat-shrink sleeve application, no additional compensation will be made to Contractor by Owner's Representative.
- d. Sec. 4.5 – All steel plate, sheet, or coils for fabricated pipe, specials, and fittings shall conform to latest edition of ASTM A1018, Grade 36 minimum; ASTM A572, Grade 42; ASTM A36; or ASTM A139, Grade C, unless otherwise specified in this Specification.

- e. Sec. 4.11 – Preparation of Pipe Ends
- 1) Buried pipe, specials, fittings, and tied joints, except as shown or noted, shall have single fillet lap-welded slip joint welded inside or outside, as approved by Owner's Representative. Provide a nominal lap of 2 1/4 inches.
 - 2) For pipe 60-inch diameter and under, bell-and-spigot "O-ring" joints may be used. Bell-and-spigot ends shall be formed integrally with steel cylinder or may be fabricated from separate plates, sheets, or special sections for attachment to pipe ends. All welds on inside of bell and outside of spigot shall be continuous and ground even with plate surface for a distance not less than insertion depth.
 - 3) For pipe installed inside casing, joints shall be lap-welded slip joint and welded inside and outside. Outside welding shall be single pass weld adequate for joint testing. Provide tapped hole at each joint for field air testing of lap welds. In addition to hydrostatic test, double-welded lap joint shall be tested by applying 40 psi air pressure into connection between two fillet welds, as outlined in AWWA C206, Sec. 5.2.2.2.
 - 4) For pipes 60-inch diameter and under, bell-and-spigot ends may be sized by forcing over a sizing die or expanding to stretch steel beyond elastic limit. Difference in diameter between outside of spigot and inside of bell at normal engagement shall not exceed 0.04 inch – measured on circumference with a diameter tape.
 - 5) Spigot ring shall have a groove to receive, hold, and protect gasket; and joint surfaces shall be of such shape and dimensions that joints will be self-centering when pipe is laid so that gasket will not be required to support weight of adjacent pipe. "O-ring" gasket shall have sufficient volume (approximately 100 percent) to fill area of groove, and shall conform to AWWA C200, Sec. 4.11.3.3. "O-ring" shall have minimum stretch of approximately 20 percent and compression of no less than 30 percent after pipe installation. Selection of "O-ring" shall meet above three criteria. Submit gasket design calculations for Owner's Representative's review. Deviation from above criteria may be permitted based on satisfactory field performance data provided by pipe manufacturer. Joint shall be suitable for total design pressure equal to Class of pipe furnished and shall operate satisfactorily with deflection.
 - 6) Shop-applied outside coating shall be continuous to end of pipe on bell end and shall be cut back on spigot end so coating extends at least 1/2 inch inside bell end at normal engagement. Shop-applied inside lining shall be continuous to end of pipe on spigot end and shall be cut back on bell end to point of maximum engagement or further, as shown on Plans. Inside of bell and outside of spigot shall be painted one shop coat of primer to prevent rust.
 - 7) Pipe manufacturer shall demonstrate current production capability for volume of work required for Project and shall have had successful fabrication to AWWA C200 Standards of at least 50,000 linear feet of 48-inch diameter or larger pipe within past five years.
 - 8) Changes in alignment or grade may be made by breaking joints of straight pipe or by use of beveled-end pipe, unless single-bend fittings are called for on Drawings. Joint openings shall not exceed one-half of maximum joint opening recommended by pipe manufacturer.
 - 9) Unburied pipe, specials, and fittings, except as shown or noted, shall have single or double butt-weld joints.
- f. Sec. 4.15 – Specials and fittings shall be provided in accordance with details shown on Drawings, as specified or required.

- g. Sec. 5.1 – Owner’s Representative retains right to observe pipe, fittings, all work performed, and all materials furnished under Contract at manufacturer’s plant. During inspection, Owner’s Representative shall have free access to those parts of manufacturer’s plant that are necessary to ensure compliance with this Standard. Manufacturer shall make gauges necessary for inspection available for Owner’s Representative’s use. Manufacturer shall provide Owner’s Representative with assistance handling pipe and fittings as necessary. Prior to shipment, each piece of pipe and fitting may be inspected and stamped by Owner’s Representative for compliance with Specifications.
 - 1) Manufacturer shall provide Owner’s Representative with copies of all written quality control procedures, tests, and reports, as required by Specifications, and as may be employed by manufacturer during production of pipe. Weekly inspection reports shall be submitted to Owner’s Representative.
- h. Sec. 5.2 – Each length of pipe and fitting shall be hydrostatically-tested in accordance with Subsection 1.05. Submit test procedures to Owner’s Representative for review.
- i. Sec. 5.2.2 – Testing of special sections shall be either hydrostatically-tested or nondestructively tested, in accordance with Subsection 1.05. Submit test procedures to Owner’s Representative for review.
- j. Sec. 6.1 – Provide Owner’s Representative with laying schedules showing where each numbered pipe or special section belongs in pipeline.
 - 1) Designations on schedule shall correspond with those painted on pipe and special sections.
 - 2) Pipe, fittings, and specials shall be marked as to serial number, date of manufacture, type with head classification, and/or depth of bury for insertion into pipeline at designated points, in conformance and corresponding with approved laying schedule.
 - 3) Fittings and specials shall be marked with pipeline stationing.
- m. Sec.6.3 – Furnish Owner’s Representative with an affidavit certifying that pipe, specials, fittings, and other Products or materials furnished comply with all applicable provisions of these Standards
- n. Installation Requirements: In addition to pipe manufacturer’s installation guide, the following requirements shall be met:
 - 1) Pipe manufacturer may provide Contractor with suitable lifting devices to be used during pipe unloading operations to move pipe, to place pipe in trench, or during any other pipe handling operations. Prior approval of pipe manufacturer and Owner’s Representative shall be required for lifting devices not furnished by manufacturer.
 - 2) Pipe shall be unloaded, handled, and placed using padded slings or other lifting devices to prevent damage to interior and exterior coating.
 - 3) Unloading or movement of pipe by rolling or sliding is strictly prohibited at any time.
 - 4) An acceptable device shall be used to distribute rubber gaskets uniformly on all joints.
 - 5) Joint pull in-field to correct alignment shall be limited to one-half of maximum amount recommended by pipe manufacturer.

B. Flanged Joints

1. Flanges for steel pipe, specials, and fittings shall be in accordance with AWWA C207, Class D (for pressure, Class 150), unless otherwise shown on Drawings, and drilled compatible with concrete pipe and ductile iron pipe with ANSI B16.1 (Class 125 Cast Iron) drilling. For pipe connected to valves, drilling shall be ANSI B16.1, Class 125 or Class 250, or as required.
2. All flanged joints shall be made with single-piece, red rubber gaskets 1/8-inch or 1/16-inch thick, as recommended by pipe manufacturer. Gaskets shall be full-face or ring-type, as recommended by pipe manufacturer, meeting AWWA C115, Appendix A, or AWWA C207 requirements. All bolts for buried flange joints shall be COR-TEN type corrosion-resistant steel (CRS).

C. Welded Joints for Steel Pipe

1. Factory-Welded Joints

- a. All welds shall be sound and free from embedded scale or slag, shall have tensile strength across weld not less than that of the thinner of the connected sections, and shall be watertight. Butt welds shall be used for all welded joints in fabrication of bends and other specials. Fillet welds shall be used for flange attachment, in accordance with AWWA C207.
- b. A yield point determination of a welded joint shall be made by an independent or manufacturer's certified testing laboratory at beginning of Work. All costs for laboratory testing shall be paid for by Contractor. Submit test report to Owner's Representative.

2. Field-Welded Joints

- a. Field-welded joints shall conform to AWWA C206.
- b. Qualifications of Procedures and Welders
 - 1) All welders and welding procedures used to install pipe shall be qualified under provisions of ANSI/AWS B2.1 or ANSI/ASME Boiler and Pressure Vessel Code, Sec. IX.
- c. If requested by Owner's Representative, Contractor shall furnish a weld test specimen from each welder used on Project for inspection by an independent testing laboratory. If independent testing laboratory determines weld does not meet Specification, welder shall not perform any welding on Project and all welder's welds may be inspected for compliance with Specification at no cost to Owner.
- d. Where exterior welds are performed, adequate space shall be provided for welding and inspection of joints.
- e. All welded pipe joints shall have a minimum of two passes. First pass for sealing joint shall be continuous seal weld around joint.

3. Unless double fillet welds are specified or shown on Plans, field-welded lap joints and butt straps shall be fillet-welded from inside or outside of pipe when pipe is larger than 30 inches, and from outside of pipe for pipe 30 inches and smaller.

- a. Fillet weld for pipe wall 1/4 inch and thinner shall be thickness of thinner part. For pipe wall thicker than 1/4 inch, weld shall be designed for thrust force at weld joint and meeting AWS D1.1 minimum weld size requirement, but shall not be less than 1/4 inch.
- b. Butt straps, where used or required, shall be minimum of 12 inches wide (same thickness as pipe wall) and shall provide for minimum of 2 inches lap at each pipe joint.

4. All welds shall be visually inspected and shall be acceptable for the following criteria:
 - a. Weld shall have no cracks.
 - b. Thorough fusion shall exist between adjoining layers of weld metal.
 - c. All craters shall be filled to cross-section of weld.
 - d. Weld profiles shall be in conformance with AWS D1.1, Sec. 5.24.
 - e. A fillet weld in single continuous weld is permitted to underrun nominal fillet size specified by 1/16 inch, provided that undersize portion of weld does not exceed 10 percent of length of weld.
 - f. Undercut shall be no more than 0.01 inch deep.
 - g. Frequency of piping porosity in weld shall not exceed 1 in each 4 inches of weld length, and maximum diameter shall not exceed 3/32 inch.

D. Restrained joints

1. Unbalanced forces at pipe bends, tees, valves, etc., shall be restrained by transmitting those forces to pipe wall by means of harnessed, flanged, or welded joints. Restrained joint materials shall be non-corrosive.
2. Each of restrained joint pipe sections and steel joints shall be designed to withstand and transmit whole angle component of longitudinal thrust of force caused by deflection angle (Δ) from pipe total transient pressure, in accordance with AWWA M11. Required length for restrained pipe on each side of bends and bevel pipes or tees shall be calculated in accordance with AWWA M11, and shall meet or exceed lengths shown on Drawings. Reduction of design longitudinal thrust force along pipeline from maximum thrust point will be permitted. Maximum longitudinal cylinder tensile stress shall have minimum factor of safety of 1.67, based on minimum steel plate yield strength. Circumferential welded joint maximum stresses shall not exceed allowable stress of weld shown in ANSI/AISC 360, Table J2.5.
3. Submit design calculations of restrained joint pipes and fittings to Owner's Representative. In designing restrained joints, combined effect of both longitudinal thrust force and radial hoop tensile force, caused by design internal pressure plus surge pressure, shall be considered. Restrained joint system shall have a minimum safety factor of 1.67. Design calculations shall be submitted for Owner's Representative's review.

E. Furnished With Pipe

1. In addition to straight lengths of pipe, the following (within Contract Unit Prices for installed pipe) shall be furnished: all bends, tees, reducers, access manholes with butt strap joints or butt joints, special fittings, and wall pieces for manholes, adapters, beveled pipe, sleeves, caps, plugs, blind flanges, butt straps, bolts, studs, nuts, etc., required for complete pipeline construction, not only as shown on Drawings but also as required by field conditions during construction. Fittings, elbows, tees, access manholes, blow-off connections, and air valve connections may be fabricated into full pipe lengths where possible.
2. Furnish all rubber gaskets and all special materials required for making of joints, and all special materials required to be incorporated in certain pieces of pipe or fittings, restrained joints, etc., as shown or noted on Drawings.
3. Pipe supplier shall furnish, within Contract Unit Prices for installed pipe, all required butt straps and adapters; which, though not specifically called for on Drawings, may still be required by field conditions during construction at no additional cost to Owner's Representative.

F. Wall Pipes

1. Wall pipes shall be steel pipe where both connecting pipes are steel pipe. Minimum wall thickness shall be as specified under in Subsections 2.01E and 2.01F of this Specification and in no case shall be thinner than the connecting pipes. They shall extend beyond wall, as shown on Plans. Wall pipes shall have intermediate wall collars and flanged end at inside and outside of structure, or as shown on Plans. Protective coating and lining of these pipes shall be in accordance with Sec. 4.5.1.

G. All unburied steel pipe, specials, and fittings shall be designed for the following minimum combined conditions:

1. Internal Pressure

	Class 150
Working Pressure (psi)	150
Surge Pressure (psi)	100
Total Transient Pressure (psi)	250

2. Vacuum: Collapse vacuum pressure of -14.7 psi with a minimum factor of safety of 1.5 as shown in AWWA M11.

PART 3 - EXECUTION

3.01 PIPING INSTALLATION

A. Comply with following:

1. Make available services of manufacturer's representative when deemed necessary by Owner's Representative. Representative to advise in aspects of installation, including but not limited to handling and storing, cleaning and inspecting, coating and lining repair, and general construction methods as applicable to pipe.
2. Handling and Storage: Install struts or stulls prior to shipping, horizontally and vertically, as proposed by manufacturer and approved by Owner's Representative.
3. Stulls: Installed in joint ends of fittings. Stulls to remain in place, horizontally and vertically, positioned under following conditions:
 - a. During storage and shipping.
 - b. Until welding is complete.
4. Install stulls prior to placement of pipe, bends, and fittings to prevent deflection during installation. Provide stulls consisting of timber struts with end blocks shaped to fit curvature of interior surface of pipe, or other appropriate configuration and material. Firmly edge and secure stulls to blocks so that they will remain intact position during handling and installation. Provide stulls adequate to resist handling loads encountered without structural failure to stull members or damage to pipe.
5. Repair, reject, and remove from Site pipe that arrives with defects in lining, including sand pockets, voids, and oversanded areas. Repairs must be made to satisfaction of Owner's Representative to be accepted.
6. Store pipe at Job Site with securely fastened plastic endcaps to maintain moist pipe interior. Promptly replace damaged endcaps to avoid shrinkage or cracking of cement-mortar lining.

7. Immediately replace damaged plastic end caps. Do not leave uncapped for more than 4 hours. If left uncapped for more than 4 hours add four gallons of potable water per 40 feet of pipe before replacing plastic cap.
 8. Bedding and Backfilling
 - a. Conform to requirements of Section 33 23 16 – EXCAVATION, BACKFILL, AND COMPACTION FOR UTILITIES.
 - b. Align pipe at proper grade prior to joint connection and do not shift after jointing operation has been completed.
 - c. Take necessary precautions during bedding and backfilling operations to prevent deformation or deflection of pipe's cylindrical shape by more than allowable pipe deflection. Do not move trench support system (trench safety system) once bedding material is compacted.
 - d. Excavate outside specified trench section for bell holes and for spaces sufficient to permit removal of slings. Provide bell holes at proper locations for unrestricted access to joint. Form bell holes large enough to facilitate joint wrapping and to permit visual examination of process. Enlarge bell holes as required or directed by Owner's Representative. Subsequent backfilling thereof will not be considered as authorized additional excavation and backfill. Backfill bell holes and spaces to satisfaction of Owner's Representative.
 - e. Blocking may be removed 24 hours after placing backfill to top of pavement or natural ground level.
 9. Pipe Deflection: After backfill is complete, test pipe for excessive deflection by measuring actual inside vertical diameter. For maximum deflection allowable, see Subsection 2.02C.4.
 - a. Deflection may be measured by Owner's Representative at any location along pipe. Arithmetical averages of deflection are not acceptable.
 - b. If deflection exceeds that specified, Contractor shall do one of the following:
 - 1) Remove backfill and side support. Reround pipe and properly replace compacted backfill and side support. Review cement-mortar lining to assure that no harmful damage has occurred.
 - 2) Remove entire portion of deflected pipe section and install new pipe as directed by Owner's Representative at no additional cost to Owner.
 - c. Move pipe in such manner not to damage pipe or coating. Do not roll pipe nor drag on ground. Use a minimum of two wide non-abrasive slings or belts to lift and lower pipe. Handle pipe using a spreader bar. Provide adequate spacing of pipe supports to prevent cracking or damage to lining or coating. Inspect and repair coating abrasions before pipe is lowered into trench.
 10. Use of dogs, clips, lugs, or equivalent devices welded to steel pipe to force it into position will not be permitted unless approved by Owner's Representative. Remove foreign matter and protective material from surfaces that are to be in contact at joints. Leave surfaces of joint areas thoroughly clean for metal-to-metal contact of field joints.
- B. Static Electricity
1. Properly ground steel pipeline during construction as necessary to prevent build-up of static electricity.
 2. Electrically test where required after installation of pipeline is complete.
- C. Any time that laying of additional pipe is stopped for more than 8 hours, plug ends of installed pipe and take proper precautions against flotation of pipe segments.

3.02 EXTERNAL COATING SYSTEM FOR BURIED STEEL PIPE

A. Polyurethane Coating System

1. Conform to requirements of AWWA C222.

B. Epoxy Coating System

1. Conform to requirements of AWWA C210.

C. Heat-Shrink Joint Sleeves

1. Provide field-applied shrink-wrap coating system for coating field joints, tie-ins, and other field-welded joints. Apply heat-shrink sleeves prior to internal welding of pipe using approved procedure compatible with coating system. Install heat-shrink joint sleeves in accordance with manufacturer's recommendations. Provide services of manufacturer's technical representative available on Site at beginning of pipe laying operations. Representative to advise Contractor and Owner's Representative regarding installation, repairs, and general construction methods.
2. Do not expose heat-shrink joint sleeves to harmful ultraviolet light for longer than recommended by coating manufacturer.

3.03 JOINTS AND JOINTING

A. Rubber Gasketed Bell-and-Spigot Joints

1. Use "O-ring" gasket with sufficient volume to approximately fill area of groove and gasket material, in accordance with AWWA C200. Check each splice in gasket by stretching gasket to at least twice original length of gasket. Visually check stretched splice by rotating 360 degrees. Reject splices showing visible separation or cracks.
2. Equalize rubber gasket cross-section after rubber gasket is placed in spigot groove of pipe by inserting tool or bar, such as large screwdriver, under rubber gasket and moving it around periphery of pipe spigot. Lubricate gaskets with nontoxic water-soluble lubricant before pipe units are joined. Fit pipes together in manner to avoid twisting or otherwise displacing or damaging rubber gasket.
3. Check gaskets after pipe sections are joined with feeler gauge to ensure that no displacement of gasket has occurred at point around circumference after joining. If displacement has occurred, remove pipe section and remake joint as if for new pipe. Remove old gasket and replace before remaking joint.
 - a. If pipe segment cannot be removed, seal-weld interior of the joint or insert a rolled steel round bar into the flare of the bell and seal-weld the round bar to the bell and spigot in accordance with AWWA C604.
4. Bond "O-ring" joints as on Drawings.

B. Welded Joints

1. For welded lap joints, conform to requirements of Subsection 2.02.I
2. Butt joints to be complete penetration for entire circumference.

C. Do not allow steel plugs for threaded outlets to project beyond inner surface of pipe shell and seal weld by at least two passes. Apply weld around outside of plug after it has been inserted in final position. Coat outlets and plugs inside and outside as required at field joints on pipe.

3.04 COATINGS AND LININGS INSPECTION RESPONSIBILITIES

- A. Contractor is responsible for quality control of coatings and linings applications and testing and inspection, as stipulated in this Section. Owner's Representative is responsible for quality assurance and reserves right to inspect or acquire services of independent third-party inspector who is fully knowledgeable and qualified to inspect surface preparation and application of high-performance coatings at phases of coatings and linings, field- or shop-applied. Contractor is responsible for proper application and performance of coatings and linings, whether or not Owner's Representative provides such inspection.
- B. Cement-Mortar Lining and Joint Finish: Finished surface of lining and joint to be comparable to surface rubbed with No. 16 Carborundum stone. Rub joint mortar sufficiently to bring paste to surface to remove depressions and projections, and to produce smooth, dense surface. Add cement to form surface paste as necessary. Leave interior with clean, neat, and uniform-appearing finish.

3.05 FIELD REPAIR PROCEDURE OF COATINGS FOR POLYURETHANE

- A. Remove oil or grease by solvent wiping pipe and adjacent coating in accordance with SSPC-SP1, Solvent Cleaning.
- B. Clean pipe surface in accordance with SSPC-SP11, Power-Tool Cleaning to Bare Metal or abrasively blast in the field in accordance with SSPC-SP10, Near-White Metal Blast Cleaning. Clean the full circumference of the pipe and feather the edges of the existing polyurethane coating a minimum of 2 inches.
- C. Apply repair material as described above in accordance with manufacturer's recommendations.
- D. Use heat applied patches or single use polyurethane coating repair product.
- E. If a heat-applied repair patch is used, do not overlap patches or use more than one patch for a single repair. If repair area exceeds the size of a single patch, use alternate repair method as listed above.

3.06 FIELD REPAIR PROCEDURES AND SPECIAL FITTINGS APPLICATION FOR CEMENT-MORTAR LINING

- A. Areas Less Than or Equal to 6 Inches in Diameter: Patch honeycomb and minor defects in concrete surfaces with non-shrink grout. Repair defects by cutting out unsatisfactory material and replacing with nonshrink grout, securely bonded to existing concrete. Finish to make junctures between patches and existing concrete as inconspicuous as possible. After each patch has stiffened sufficiently to allow for greatest portion of shrinkage, strike off grout flush with surrounding surface.
- B. Areas Greater Than 6 Inches in Diameter
 1. Remove defective lining down to bare steel by chipping, making sure care is taken to prevent further lining damage. Ends of lining where defective lining is removed are to be left square and uniform, not feathered.
 2. Clean bare steel with wire brush to remove loose or other foreign matter.
 3. Remove existing wire reinforcement and replace. Overlap new reinforcement to existing reinforcement by 1/2 inch. Secure reinforcement against wall of pipe at frequent intervals by tack welding to pipe.
 4. Prepare cement-mortar mixture. Mixture to be composed of cement, sand, and water per AWWA C205. Proportions of sand to cement not to exceed three-parts sand to one-part cement, by weight. Use only enough water to obtain proper placement characteristics. Set-up time before mixture is to be discarded is to be no longer than 30 minutes. Non-shrink grout may also be used. Do not use combination of cement-mortar and non-shrink grout within same repair.

5. Apply Larsen Products' Weld-Crete, or approved equal, concrete bonding agent to bare steel and interface of existing lining. After bonding agent is applied to steel and lining, new mix must be applied within 10 minutes.
6. Apply cement-mortar to repair area 1/2-inch thick, then hand trowel to achieve smooth dense finish, making sure wire is not left exposed. To ensure proper thickness while placing new mortar, check thickness with 1/2-inch long wire gauge.
7. Curing: Place plastic sheeting over repair area; use tape to adhere plastic to area surrounding repair area. Let cure for 4 days, then remove plastic sheeting.

3.07 SURVEYING

- A. Use adequate surveying methods and procedures and employ competent personnel to ensure pipe sections are laid to line and grade and within stipulated tolerances. Measure and record, in form approved by Owner's Representative, in-place survey data for pipe laid each day and submit data to Owner's Representative in accordance with Section 01 30 01 – DIGITAL UTILITY DATA COLLECTION and Section 01 31 00 – PROJECT MANAGEMENT AND COORDINATION.

3.08 PHOTOGRAPH AND VIDEO REPORTING OF PIPE JOINTS

- A. Each completed pipe joint shall be photographed by Owner's Representative. Contractor shall notify Owner's Representative when joints are complete, prior to backfilling pipe. Contractor shall mark date that joint was completed and initials of foreman next to factory painted pipeline station number. Lettering size shall be same as used for pipe stationing number.
- B. Owner's Representative will provide internal pipe joint video report for the pipeline. Video report shall show full circumference of each joint with pipe mark number and station number labeled or identified by voice. Date and time shall be recorded on video.
- C. Contractor shall coordinate with Owner's Representative upon completion of pipe joints and provide access to pipe for visual observation and documentation.

3.09 HYDROSTATIC TESTING

- A. Pipe shall be hydrostatically tested in accordance with AWWA C604.
 1. Maximum allowable leakage for pipe with gasketed joints shall not exceed requirements of AWWA C604.
 2. No leakage shall be allowed for pipe with welded joints.
 3. All visible leaks shall be repaired regardless of the amount of leakage.

3.10 DISINFECTION

- A. Disinfection of water main pipe shall be performed in accordance with AWWA C651.

END OF SECTION

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40 05 57 ELECTRIC VALVE ACTUATORS

PART 1 - G E N E R A L

1.01 SUMMARY

- A. This Section includes requirements for provision of electric valve actuators to be installed, complete and operable, in accordance with Drawings and Specifications.

1.02 REFERENCES

- A. ANSI/AWWA C542-16 – AWWA Standard for Power-Actuating Devices for Valves and Sluice Gates.

1.03 SUBMITTALS

- A. Conform to requirements of Section 01 33 00 – SUBMITTAL PROCEDURES.
- B. Shop Drawings: Shop drawings for all actuators shall be submitted together with valve information as a complete package.

1.04 QUALITY ASSURANCE

- A. All valve actuator manufacturers shall have at least 5 years of experience manufacturing actuators similar to those supplied for this Work.
- B. Where two or more valve actuators of same type or size are required, a single manufacturer shall be utilized for provision of all such actuators.
- C. Valve actuator manufacturer shall be responsible for furnishing the electric actuator to properly operate a traveling nut operator on valve (supplied by Owner); however, this shall not negate Contractor's responsibility to Owner for full contract compliance.

PART 2 - P R O D U C T S

2.01 GENERAL

- A. General: Where indicated on Drawings, provide electrical actuated valves power actuators. Contractor shall furnish all actuators complete and operable with mounting hardware, motors, gears, controls, wiring, solenoids, handwheels, levers, chains, and extensions, as applicable. All actuators shall be capable of holding valve in any intermediate position between fully open and fully closed without creeping or fluttering. All wires of motor-driven actuators shall be identified by unique numbers and/or acronyms as indicated on Drawings.
- B. Manufacturers: Flowserve, Limitorque Model L120-20 with no substitutions. Actuator to include but not limited to:
 - 1. Handwheel
 - 2. Actuator Nameplate Information
 - 3. Housing
 - 4. Declutch Lever
 - 5. Motor
 - 6. Motor Nameplate Information
 - 7. Mounting base(s)

8. No Control Unit at actuator with signal converter for valve position. (Owner to provide 24V DC power for signal). Include necessary limit and torque switches for required operation and indicated in Drawings
 9. Motor relays and capacitors for reversing operation of the actuator motor
 10. Local/Off/Remote Selector Switch with five feet of wiring for mounting in Motor Starter Panel located in ROV Control Panel. (See Electrical Drawings)
 11. Capable of up to 200 ft-lbs of torque
 12. O-ring sealed electrical compartment covers with condensate electric heater
 13. Drive 1 steel stem nut
- C. All actuators shall be current models and liberally sized for maximum expected torque. Actuator enclosure and associated components shall be capable of being installed in confined/hazardous locations susceptible to the following conditions: Moisture, condensation, corrosion, flooding, atmospheric conditions, etc. Shall be weatherproof, submersible, and/or explosionproof NEMA 6P and IP68 or equivalent. (watertight, submersible, All external fasteners on electric actuators will be stainless steel. Fasteners on limit switch and terminal compartments shall be captive to prevent loss while covers are removed. Actuator gear housing, gear reductions (worm and spur) gears, motor gear reduction assemblies, motor adaptors, pinion shafts, bearings, drive gears, etc. shall be of Limitorque L120-20 specifications unless otherwise specified by Owner. All torque and thrust bearing housings, except motor housings, shall be cast iron. All gearing shall be grease lubricated and designed to withstand full stall torque of motor.
- D. Mounting: All actuators shall be securely mounted by means of brackets, flanges, adaptors, or hardware specially designed and sized for this purpose and of ample strength. "Open and Close" shall be cast on each valve plate cover and "Open" shall also be cast on actuator handwheel to indicate direction to rotate for manual operation of valve. Valve to open in counterclockwise direction
- E. Standard: Unless otherwise indicated and where applicable, all actuators shall be in accordance with ANSI/AWWA C542-16 – AWWA Standard for Power-Actuating Devices for Valves and Sluice Gates.
- F. Functionality
1. Electric actuators shall be coordinated with power and instrumentation equipment indicated elsewhere in Drawings and Specifications.
 2. All actuators will be furnished with a Contractor supplied motor starter panel inside the ROV Control Cabinet as indicated on Drawings. Panel construction to be in accordance with UL 508A with labeled. Limitorque to provide necessary drawings of supplied electric actuator and no controls unit for coordination.
 3. Controls to include:
 - a. Reversing contactors
 - b. Starters
 - c. Power supply/control transformer
 - d. Auxiliary relays
 - e. Phase discriminator/Phase monitor
 - f. "Open-stop-close" momentary selector switch along with red and green indicator lights
 - g. "Local-off-remote" selector switch
 - h. Control relays and timers
 - i. Fuses

- j. Limit switches
 - k. Torque switches
 - l. Motor protection overloads and over-temperature
 - m. Space heaters
 - n. Circuit breakers disconnect
4. Communication and signal feedback between actuators and control panel shall:
- a. Low Voltage 24vdc DI/DO's: 14 AWG or appropriately sized.
 - b. AI Signal: Shielded conductor cables.
 - 1) 4-20mA valve feedback via analog signal or potentiometer (1000 ohm, 10 turn POT) via 3-C shielded to a Potentiometer/ DC convertor card installed in RTU cabinet
 - c. Valve control power (120 volts): 14 AWG or appropriately sized.
5. Actuator digital communications board must be capable of providing the following:
- a. Control Features
 - 1) OPEN.
 - 2) CLOSE.
 - 3) STOP.
 - b. Indications
 - 1) End-of-travel positions (OPEN/CLOSED Limit -LSC/LSO valve status).
 - 2) Selector switch in position (LOCAL/OFF/REMOTE) -Control Mode Status.
 - c. Fault Indications
 - 1) Motor protection tripped.
 - 2) Phase failure/wrong phase sequence.
 - 3) Control Power Alarm (Secondary side of Control Power Transformer)
 - d. Digital inputs and outputs as shown on drawings.
 - e. 4-20 milliamp valve position analog output.

2.02 ELECTRIC MOTOR ACTUATORS

- A. General: Where electric motor actuators are indicated, an electric motor-actuated valve control unit shall be attached to actuating mechanism housing by means of a flanged motor adaptor piece.
- B. Gearing. Motor actuator shall include motor, reduction gearing, reversing starter, torque switches, and limit switches in a weather-proof NEMA 4 assembly. Actuator shall be a single or double reduction unit consisting of spur or helical gears and worm-gearing. Spur or helical gears shall be of hardened alloy steel and worm-gear shall be alloy bronze. All gearing shall be accurately cut with hobbing machines. All power gearing shall be grease- or oil-lubricated in a sealed housing. Ball or roller bearings shall be used throughout. Actuator output speed changes shall be mechanically possible by simply removing motor and changing exposed or helical gearset ratio without further disassembly of electric actuator. Exploded parts diagram for gearing reduction units to be included in submittals.
- C. Switches and Wiring: Travel in opening and closing directions shall be governed by a limit switch responsive to valve reaching fully open or closed position, torque switch responsive to mechanical torque developed in valve seating or an obstruction/resistance met in opening or

closing the valve, or an on-board microprocessor . Torque switch shall be adjustable and shall function without auxiliary relays or devices, or it shall be adjustable in 1 percent increments, sensed by a pulse-counter, which receives 15 pulses per rotation of unit. Geared limit switches shall be of open type and shall be actuated by a rotor cam with four contacts to each cam or gear train. Actuator shall have a number of gear trains as required to produce operation indicated. Actuator shall be wired in accordance with schematic diagram. All wiring for external connections shall be connected to marked terminals. One 1-inch and one 1 1/4-inch conduit connection shall be provided in enclosing case. A calibration tag shall be mounted near each switch correlating dial setting to unit output torque. Position limit switches and associated gearing shall be an integral part of valve actuator. To provide best possible accuracy and repeatability, limit-switch gearing shall be of "counting" intermittent type, made of stainless steel, grease-lubricated, and enclosed in its own gearcase to prevent dirt and foreign matter from entering gear train. Switches shall not be subject to breakage or slippage due to over-travel. Traveling-nuts, cams, or microswitch tripping mechanisms shall not be used. Limit-switches shall be of heavy-duty open contact type with rotary wiping action. Quarter turn actuators will be furnished with mechanical stops that restrict valve/actuator travel. Actuator must be capable of the following valve closing times/operating speeds:

1. Quarter Turn Valves: 240 second closing time.
- D. Emergency Nut Operation: A permanently attached 2" nut shall be provided for emergency manual operation. Nut shall not rotate during electrical operation. Maximum torque required on nut under most adverse conditions shall not exceed 60 pound-feet from above ground T-Wrench. Engaging and de-engaging emergency operation shall provide by means of cabling from above ground where actuator is below grade.
- E. Motor: Motor shall be of totally-enclosed, non-ventilated, high-starting torque, low-starting current type for full voltage starting. It shall be suitable for operation on 240-volt, 1-phase, 60-Hertz current, and have Class D insulation and a motor frame with all dimensions in accordance with latest revised NEMA MG Standards. With a line voltage ranging between 10 percent above to 10 percent below rated voltage, motor shall develop full rated torque continuously for 15 minutes without causing thermal contact protective devices imbedded in motor winding to trip or starter overloads to dropout. All bearings shall be of ball type and thrust bearings shall be provided where necessary. All bearings shall be provided with suitable seals to confine lubricant and prevent entrance of dirt and dust. Motor conduit connections shall be watertight. Motor construction shall incorporate use of stator and rotor as independent components from valve operation such that failure of either item shall not require actuator disassembly or gearing replacement.
- F. Electric Motor Actuators (AC Reversing Control Type)
1. General: Electric motor actuators of AC reversing type shall be complete with remote control station with open/close/stop and local/remote selector switches.
 2. Actuator Appurtenances: Actuator for each valve shall be supplied with open and close status lights; open, close and lock-out-stop push-buttons; close couple service disconnects or equivalent, and all other devices indicated.
 3. Starter
 - a. Starter shall be suitably sized amperage rated reversing starter with its coils rated for operation on 240-volt, 1-phase, 60-Hertz current. Starter shall be equipped with overload relay of manual reset-type. Starter shall be located in remote control package (ROV Cabinet) actuator enclosure.
 - b. An integral weatherproof compartment shall contain a suitably sized space heater to prevent moisture condensation on electrical components.

PART 3 - EXECUTION

3.01 SERVICE OF MANUFACTURER

- A. Field Adjustments. Field representatives of manufacturers of valves with electric actuators shall adjust actuator controls and limit-switches in field for required function. Field representative shall instruct Owner's Representative in proper adjustments procedures, care, maintenance, and operation of equipment. Any technical literature to be provided for reference as well.

3.02 INSTALLATION

- A. All valve actuators and accessories shall be installed in accordance with manufacturer's installation instructions. Actuators shall be located to be readily accessible for operation and maintenance, without obstructing walkways.
- B. Actuators shall be field-mounted on Owner-furnished valve manual actuator. Actuators shall not be mounted where shock or vibrations will impair their operation, nor shall support systems be attached to handrails, process piping, or mechanical equipment. Electric valve actuators shall be installed in horizontal orientation, so replacement of motor and/or servicing actuator enclosure is "Serviceable".

3.03 ACCEPTANCE TEST

- A. Upon receipt of the actuator, inspection of equipment condition shall be performed for any damages, missing parts, components, verification of nameplates, etc.
- B. Upon completion of installation of each valve actuator, an acceptance test will be conducted to verify satisfactory operation and performance of each actuator. Test shall be conducted in a manner approved by and in the of Owner's Representative. Each valve shall be tested for but not limited to:
 - 1. Torque switch
 - a. Test TSC – During close travel
 - b. Test TSO – During open travel
 - 2. Alarms/Indications/Controls
 - a. Verify all alarming and indications are reporting properly.
 - 3. Manual Operation
 - a. Testing handwheel operation
 - b. Valve key operation
 - 4. Electric Operation
 - a. Local Operation – Fully Close and Open
 - b. Remote Operation
 - 1) Fully Close – 0% setpoint command
 - 2) 25% open setpoint command
 - 3) 50% open setpoint command
 - 4) 75% open setpoint command
 - 5) Fully Open – 100% setpoint command
- C. Each valve actuator must perform in a manner acceptable to Owner's Representative before final acceptance will be made.

- D. Project specific readings and/or checklist to include but limited to: motor amp draws, torque switch values (for open and close), etc to be recorded as part of acceptance test.

END OF SECTION

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GENERAL NOTES

1. ANY REFERENCE TO A STANDARD IN THESE DRAWINGS SHALL BE TAKEN TO MEAN THE LATEST EDITION OF THE CITED STANDARD.

2. THE CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF ALL PERMITS AND BONDS ASSOCIATED WITH THIS PROJECT, COMED, RAILROADS, MUNICIPALITIES, IDOT, COUNTY AND TOWNSHIP HIGHWAY DEPARTMENTS, AND ILLINOIS ENVIRONMENTAL PROTECTION AGENCY.

3. ALL CONSTRUCTION WORK MUST BE COORDINATED WITH LOCAL MUNICIPALITIES/AGENCIES (CITY OF NAPERVILLE, NAPERVILLE TOWNSHIP, WHEATLAND TOWNSHIP, DUPAGE COUNTY, WILL COUNTY). A SCHEDULE MUST BE SUBMITTED TO THE OWNER'S REPRESENTATIVE AND LOCAL MUNICIPALITIES FOR APPROVAL. MINIMIZE THE DISTURBANCE OF THE PROJECT AREA. NOTIFY OWNER'S REPRESENTATIVE AND ALL LOCAL MUNICIPALITIES/AGENCIES A MINIMUM OF 30 DAYS IN ADVANCE OF BEGINNING CONSTRUCTION.

4. THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES WITH ALL UTILITY COMPANIES, INCLUDING COMED.

5. CONTRACTOR SHALL VERIFY SIZE, MATERIAL, AND LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

6. CONTRACTOR SHALL CONTACT 811 (J.U.L.I.E.) TO HAVE ALL UNDERGROUND UTILITIES LOCATED. THE LOCATION AND ELEVATION OF THE VARIOUS UNDERGROUND UTILITIES AS SHOWN ON DRAWINGS ARE APPROXIMATE. THE CONTRACTOR SHALL USE SPECIAL CARE WHEN CONDUCTING CONSTRUCTION OPERATIONS NEAR UTILITIES TO PREVENT DAMAGE. CONTRACTOR IS RESPONSIBLE TO FIELD LOCATE AND EXPOSE, AS THE CONTRACTOR DEEMS NECESSARY, ALL EXISTING UNDERGROUND UTILITIES AND HOUSE SERVICE UTILITIES (IF APPLICABLE) THAT WILL BE CROSSED DURING CONSTRUCTION. FAILURE TO EXPOSE AN EXISTING UTILITY OR HOUSE SERVICE UTILITY THAT IS LOCATED BY J.U.L.I.E. WILL NOT RESULT IN ADDITIONAL COMPENSATION. CONTRACTOR SHALL NOTIFY OWNER'S REPRESENTATIVE IMMEDIATELY IF UNFORESEEN UTILITIES ARE LOCATED VIA J.U.L.I.E. NO SEPARATE PAYMENT WILL BE MADE FOR UTILITY LOCATES, UTILITY LOCATES ARE INCIDENTAL TO COST OF CONSTRUCTION.

7. CONTRACTOR SHALL COORDINATE WITH RESPECTIVE UTILITY OWNERS FOR ALL BRACING/SUPPORTING OF EXISTING FACILITIES, INCLUDING WATER MAIN, GAS LINE, SEWERS, TRAFFIC CONTROL BOXES, TELECOMMUNICATION FACILITIES, UTILITY POLES, AND WIRE PROTECTION AS NECESSARY FOR PROPOSED CONSTRUCTION ACTIVITIES. COST INCIDENTAL TO COST OF CONSTRUCTION.

8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR AND/OR REPLACEMENT OF ALL DAMAGED UTILITIES AT NO ADDITIONAL COMPENSATION, UNLESS REPLACEMENT OF SAID UTILITY IS SPECIFICALLY CALLED OUT ON DRAWINGS.

9. CONTRACTOR SHALL NOTIFY ALL RESIDENTS OF INTERRUPTION OF THEIR UTILITIES THAT WILL BE CAUSED BY THE CONSTRUCTION.

10. AT NO TIME DOES THE CONTRACTOR HAVE THE PERMISSION OR AUTHORITY TO ENTER OR DISTURB PROPERTY OUTSIDE OF THE EXISTING RIGHT-OF-WAY, OR EASEMENTS, UNLESS OTHERWISE SPECIFIED IN THE CONTRACT DOCUMENTS.

11. NO TRENCHES/HOLES ARE TO BE LEFT OPEN IN THE PAVEMENT OR PARKWAY OVER A LEGAL HOLIDAY, WEEKEND, OR AFTER 3:00 P.M. ON THE DAY PRECEDING A LEGAL HOLIDAY OR WEEKEND, UNLESS OTHERWISE APPROVED BY OWNER'S REPRESENTATIVE. TRENCHLESS SHAFT EXCAVATIONS SHALL BE SECURED AND PROTECTED PER SPECIFICATIONS. LEGAL HOLIDAYS AND LENGTH OF HOLIDAY PERIODS ARE AS DEFINED BY ILLINOIS DEPARTMENT OF TRANSPORTATION (IDOT) STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST REVISION.

12. ALL SAW CUTTING REQUIRED SHALL BE CONSIDERED INCIDENTAL TO CONSTRUCTION AND COST SHALL BE INCLUDED IN RELATED PAY ITEMS. SAW CUT SHALL BE FULL DEPTH FOR HMA PAVEMENTS, PCC PAVEMENTS, AND CURB & GUTTERS.

13. MAJOR THOROUGHFARE AND HIGHWAY CROSSINGS SHALL BE INSTALLED WITH TRENCHLESS CONSTRUCTION AND ENCASED ACCORDING TO THESE DRAWINGS, CONSTRUCTION SPECIFICATIONS, AND ILLINOIS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST REVISION. PRIOR TO CONSTRUCTION IN RIGHTS-OF-WAY, THE CONTRACTOR SHALL PROVIDE MINIMUM 7 DAY NOTICE TO THE PROPER AGENCY.

14. THE CONTRACTOR SHALL ERECT AND MAINTAIN ALL NECESSARY BARRICADES, DETOUR SIGNS, WARNING SIGNALS, AND LIGHTS BY NIGHT (IN CONFORMANCE WITH THE ILLINOIS MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES - LATEST EDITION) REQUIRED TO DIRECT TRAFFIC SAFELY OVER OR AROUND THE PLACE WHERE SUCH WORK IS BEING DONE, SO LONG AS THE WORK IN ANY WAY INTERFERES WITH TRAFFIC.

15. BARRICADES: ALL UNBALLASTED TYPE I AND TYPE II BARRICADES SHALL HAVE TWO (2) SANDBAGS PLACED ON THE BOTTOM RAIL. A TYPE II BARRICADE SHALL REQUIRE A MINIMUM OF FOUR (4) SANDBAGS. TYPE I AND II BARRICADES SHALL HAVE WORKING BEACONS AT ALL TIMES.

16. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL TRAFFIC SIGNS THAT MUST BE TEMPORARILY MOVED.
17. CONTRACTOR SHALL CLEAN SITE OF CONSTRUCTION DEBRIS DAILY TO THE SATISFACTION OF THE LOCAL MUNICIPALITY AND OWNER'S REPRESENTATIVE.

18. NO FENCE SHALL BE CUT WITHOUT CONTRACTOR HAVING WRITTEN PERMISSION FROM THE PROPERTY OWNER.

19. NO OPEN BURNING OF CONSTRUCTION DEBRIS SHALL BE ALLOWED WITHOUT A PROPER PERMIT.

20. NO CHEMICALS, FUELS, LUBRICANTS, BITUMINOUS MATERIAL, RAW SEWAGE, TREES, BRUSH, OR DEBRIS FROM DEMOLITION OR EXCAVATION ACTIVITIES SHALL BE DISCHARGED OR DISPOSED OF INTO OR ALONGSIDE ANY STREAM, WATERCOURSE, FLOOD PLAIN, OR WETLAND UNDER ANY CIRCUMSTANCES.

21. ALL MATERIALS DISPOSED OF OFF-SITE MUST BE DONE SO IN AN ENVIRONMENTALLY SOUND FASHION AND IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS.

22. INDISCRIMINATE, ARBITRARY, OR CAPRICIOUS OPERATION OF EQUIPMENT IN ANY STREAM CORRIDOR, ANY WETLAND, ANY SURFACE WATER, OR OUTSIDE THE CONSTRUCTION LIMITS IS PROHIBITED.

23. IF DURING THE COURSE OF CONSTRUCTION, EVIDENCE OF DEPOSITS OF HISTORICAL OR ARCHAEOLOGICAL INTEREST IS FOUND, CEASE OPERATIONS AFFECTING THE FIND AND NOTIFY OWNER'S REPRESENTATIVE, WHO SHALL NOTIFY THE ILLINOIS HISTORIC PRESERVATION OFFICE. NO FURTHER DISTURBANCE OF THE DEPOSITS SHALL ENSUE UNTIL THE CONTRACTOR HAS BEEN NOTIFIED IN WRITING THAT HE/SHE MAY PROCEED. THE OWNER'S REPRESENTATIVE SHALL ISSUE A NOTICE TO PROCEED ONLY AFTER THE ILLINOIS HISTORIC PRESERVATION OFFICE HAS SURVEYED THE FIND AND HAS MADE A DETERMINATION OF VALUE AND EFFECT AND SUBMITTED SUCH DETERMINATION TO THE OWNER'S REPRESENTATIVE.

24. DRAINAGE TILE BROKEN OR DAMAGED IN THE CONSTRUCTION OF THE PROPOSED UTILITY MAIN SHALL BE REPLACED FOR A DISTANCE OF TWO (2) FEET ON EACH SIDE OF THE TRENCH WITH A SOLID PIPE OF THE SAME SIZE. THE REPLACEMENT PIPE SHALL BE INSTALLED WITH PEA GRAVEL OR ANY OTHER SUITABLE GRANULAR BACKFILL FROM THE BOTTOM OF THE TRENCH TO SIX (6) INCHES ABOVE THE TOP OF THE REPLACEMENT PIPE AND ONE (1) FOOT EACH WAY FROM THE CENTERLINE OF THE REPLACEMENT PIPE ALONG THE TRENCH. IN ALL CASES, THE REPAIR OF THE DRAINAGE TILE SHALL BE TO THE SATISFACTION OF OWNER'S REPRESENTATIVE.

25. CONTRACTOR IS RESPONSIBLE FOR REPLACING PAVEMENTS SCORED, MARRED, CRACKED, OR OTHERWISE DAMAGED BY NEGLIGENT USE OF EQUIPMENT AND MATERIAL FOR THE ENTIRE LENGTH OF THE PROJECT.

26. WHERE SECTION OR SUB-SECTION MONUMENTS ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED BEFORE SUCH MONUMENTS ARE REMOVED. THE CONTRACTOR SHALL PROTECT AND CAREFULLY PRESERVE ALL PROPERTY MARKERS AND MONUMENTS UNTIL OWNER'S REPRESENTATIVE, AN AUTHORIZED AGENT, OR LAND SURVEYOR HAS WITNESSED OR OTHERWISE REFERENCED THEIR LOCATION. THE CONTRACTOR WILL BE RESPONSIBLE FOR HAVING AN AUTHORIZED SURVEYOR RE-ESTABLISH ANY SECTION OR SUB-SECTION MONUMENTS DESTROYED BY HIS/HER OPERATIONS.

27. DRIVEWAY ACCESS TO BE MAINTAINED AT ALL TIMES WITH AGGREGATE SURFACE COURSE.

28. ALL AREAS DISTURBED TO BE RESTORED TO EXISTING CONDITIONS AND ELEVATIONS TO THE SATISFACTION OF OWNER'S REPRESENTATIVE. THIS INCLUDES, BUT IS NOT LIMITED TO, GRASS AREAS, SIDEWALK, CURB AND GUTTER, ETC.

29. THE TRENCHES FOR PIPE INSTALLATION SHALL BE KEPT DRY AT ALL TIMES DURING PIPE REPLACEMENT. APPROPRIATE FACILITIES TO MAINTAIN THE DRY TRENCH SHALL BE PROVIDED BY THE CONTRACTOR AND THE COST OF SUCH SHALL BE INCIDENTAL TO THE UNIT PRICE BID FOR THE ITEM. PLAN FOR SITE DEWATERING, IF EMPLOYED, SHALL BE SUBMITTED TO AND APPROVED BY OWNER'S REPRESENTATIVE PRIOR TO IMPLEMENTATION. NO ADDITIONAL COMPENSATION SHALL BE MADE FOR DEWATERING DURING CONSTRUCTION, UNLESS APPROVED IN WRITING BY OWNER'S REPRESENTATIVE.

30. BACKFILLING AND ROUGH GRADING (WITHIN 2-INCHES ± OF FINAL GRADE) SHALL BE COMPLETED THE SAME DAY FOR THE FULL EXTENT OF THE EXCAVATION FOR THE DAY'S PIPE LAYING OPERATION.

31. AT THE CLOSE OF EACH WORKING DAY AND THE CONCLUSION OF CONSTRUCTION OPERATION, ALL DRAINAGE STRUCTURES AND FLOW LINES SHALL BE FREE FROM DIRT AND DEBRIS.

32. THE CONTRACTOR SHALL MAINTAIN ACCESS FOR EMERGENCY VEHICLES AT ALL TIMES.

33. POSTAL SERVICE AND RESIDENT ACCESS TO MAILBOXES (IF APPLICABLE) MUST BE MAINTAINED AT ALL TIMES.

34. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION WITH GARBAGE COMPANIES AND GARBAGE COLLECTION IN WORK AREAS THAT ARE INACCESSIBLE TO GARBAGE COLLECTION VEHICLES DUE TO CONSTRUCTION ACTIVITIES. CONTRACTOR SHALL MOVE GARBAGE TO AN AGREED UPON LOCATION THAT GARBAGE COLLECTION VEHICLES CAN ACCESS. NO SEPARATE PAYMENT. COST INCIDENTAL TO CONSTRUCTION.

35. VALVES SHALL ONLY BE OPERATED BY OR IN THE PRESENCE OF THE OWNER. COORDINATE ALL OPERATIONS OF EXISTING VALVES WITH THE OWNER'S REPRESENTATIVE, PROVIDE MINIMUM OF 24 HOURS NOTICE.

36. ANY TIME THE TRENCH IS UNATTENDED FOR MORE THAN 30 MINUTES, A TEMPORARY PLUG OR CAP SHALL BE INSTALLED TO PREVENT WATER OR DEBRIS INTRUSION.

37. FOR LOCATIONS WHERE THE EXISTING STORM SEWER IS BEING REPLACED AND EXTENDS BEYOND THE TYPICAL WORK ZONE FOR THE WATER MAIN INSTALLATION AND REQUIRES ADDITIONAL LANE CLOSURES, REMOVE AND REPLACE THE STORM SEWER DURING OFF-PEAK WORKING HOURS. THE TRENCH MUST BE BACKFILLED AND COVERED WITH A STEEL PLATE OR TEMPORARY PAVEMENT. THIS WORK MUST BE COMPLETED WITHIN THE SAME WORKING DAY. ADDITIONAL TRAFFIC CONTROL REQUIRED FOR THE WORK WILL NOT BE PAID FOR SEPARATELY BUT INCLUDED IN THE COST OF TRAFFIC CONTROL AND PROTECTION.

38. PROVIDE BYPASS PUMPING FOR ALL STORM AND SANITARY SEWER REPLACEMENT WORK, AS NEEDED. REMOVAL AND REPLACEMENT OF SEWERS MUST TAKE PLACE DURING DRY WEATHER CONDITIONS OR ANOTHER TIME APPROVED BY OWNER'S REPRESENTATIVE.

39. ALL CULVERT PIPE REPLACEMENTS MUST INCLUDE REPLACEMENT OF CONNECTED FLARED END SECTIONS (IF APPLICABLE) AND HEAD WALLS IN KIND AT NO EXTRA COST.

40. MAINTAIN AS-BUILT DRAWINGS SHOWING PIPE SIZES, PIPE ELEVATIONS, PIPE LENGTHS, PIPE MATERIALS, FITTINGS, STRUCTURES, CROSSING UTILITIES, AND CATHODIC PROTECTION TEST STATIONS AND ANODES. DATA COLLECTION SHALL BE PERFORMED WITH GPS UNITS AND MOBILE DEVICES PER SPECIFICATIONS.

41. IF DRAIN TILE IS ENCOUNTERED, PHOTOGRAPH THE DRAIN TILE UPON DISCOVERY TO DOCUMENT EXISTING CONDITION. IF REPAIRS ARE NECESSARY DUE TO DISTURBANCE DURING THE WORK, PHOTOGRAPH THE REPAIRED DRAIN TILE CONDITION. SUBMIT ALL PHOTOGRAPHS TO OWNER'S REPRESENTATIVE.

42. SURFACE INLETS MAY NOT BE CONNECTED TO ANY CLAY OR PLASTIC DRAIN TILE.

EROSION CONTROL

1. NOTIFY KANE-DUPAGE SOIL & WATER CONSERVATION DISTRICT (KDSWCD) AND WILL-SOUTH COOK SOIL & WATER CONSERVATION DISTRICT A MINIMUM OF ONE (1) WEEK PRIOR TO START OF LAND-DISTURBING ACTIVITIES AND ONE (1) WEEK PRIOR TO FINAL INSPECTION.

2. CONTRACTOR SHALL INSTALL INLET FILTERS AT LOCATIONS SHOWN ON THE EROSION CONTROL PLAN.

3. CONTRACTOR SHALL INSTALL JUTE MAT ROLLS AT ALL UP-STREAM ENDS OF CULVERTS ON STREET SIDE OF CONSTRUCTION (TYPICAL).

4. CONTRACTOR SHALL PROVIDE EROSION CONTROL CONSISTENT WITH "BEST MANAGEMENT PRACTICES FOR EROSION CONTROL."

5. RECOMMENDED EROSION CONTROL MEASURES ARE INTENDED TO BE USED AS GUIDELINES FOR BEST MANAGEMENT PRACTICES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO FURNISH, INSTALL, MAINTAIN, REPAIR, REPLACE, AND REMOVE THE APPROPRIATE EROSION AND SEDIMENT CONTROL MEASURES AS REQUIRED BY ALL APPLICABLE PERMITS.

6. ALL ACTIVITIES ON THE SITE SHALL BE CONDUCTED IN A LOGICAL SEQUENCE TO MINIMIZE THE AREA OF UNSTABILIZED SOIL AT ANY ONE TIME.

7. ANY DISTURBED SOIL LEFT INACTIVE FOR SEVEN OF MORE DAYS SHALL BE STABILIZED BY SEEDING OR SODDING, BY MULCHING OR COVERING, OR OTHER EQUIVALENT CONTROL MEASURES IN ACCORDANCE WITH "BEST MANAGEMENT PRACTICES OR EROSION CONTROL."

8. ANY SOIL OR DIRT STORAGE PILES CONTAINING MORE THAN 10 CUBIC YARDS OF MATERIAL SHALL NOT BE LOCATED WITH DOWN-SLOPE DRAINAGE OR LESS THAN 25 FEET TO A ROADWAY, DRAINAGE CHANNEL, OR BODY OF WATER. IF REMAINING FOR MORE THAN 14 DAYS, THE PILE SHALL BE STABILIZED WITH MULCH, VEGETATIVE COVER, TARP, OR OTHER MEANS. EROSION FROM PILES IN EXISTENCE LESS THAN 14 DAYS SHALL BE CONTROLLED BY PLACING STRAW BALES OR FILTER FENCE BARRIER AROUND THE PILE.

9. ALL EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO DISTURBING ANY LANDS ON SITE. ALL APPLICABLE PERMITS AND AUTHORIZATIONS PERTAINING TO EROSION CONTROL ACTIVITIES SHALL BE OBTAINED PRIOR TO DISTURBING ANY LANDS ON SITE.

10. EROSION CONTROL MEASURES SHALL REMAIN IN PLACE AND BE MAINTAINED UNTIL THE SITE IS STABILIZED BY PERMANENT BEST MANAGEMENT PRACTICES.

11. STORAGE OF EQUIPMENT AND CONSTRUCTION MATERIALS IN THE FLOODPLAIN IS NOT PERMITTED.

WATER MAIN

1. IN THE EVENT OF A BREAK ON AN EXISTING WATER MAIN IN THE WORK AREA, ALL WORK ADJACENT TO MAIN BREAK MUST IMMEDIATELY CEASE AND THE CONTRACTOR MUST REPAIR DAMAGED OR LEAKING EXISTING WATER MAIN PRIOR TO RESUMING WORK. FOR DAMAGES TO EXISTING CITY OF NAPERVILLE DISTRIBUTION MAINS, THE CITY OF NAPERVILLE MUST BE IMMEDIATELY NOTIFIED AND REPAIRS MUST BE MADE TO THE CITY OF NAPERVILLE SPECIFICATION.

2. WATER MAIN MUST BE INSTALLED WITH A MINIMUM 6 FEET OF COVER.

3. ALL EXISTING WATER MAINS MUST REMAIN IN SERVICE UNLESS OTHERWISE NOTED ON DRAWINGS.

4. EDGE-TO-EDGE SEPARATION OF THE PROPOSED WATER MAIN AND ANY SEWERS SHALL BE 10 FEET HORIZONTAL. WHERE 10 FEET HORIZONTAL SEPARATION CANNOT BE MET, WATER MAIN INVERT MUST BE MINIMUM OF 18 INCHES ABOVE CROWN OF EXISTING SEWER AND INSTALLED IN A SEPARATE TRENCH OR IN THE SAME TRENCH ON AN UNDISTURBED EARTH SHELF LOCATED TO ONE SIDE OF SEWER. WHERE IT IS NOT POSSIBLE TO MAINTAIN HORIZONTAL AND VERTICAL SEPARATION AS DESCRIBED ABOVE, BOTH WATER MAIN AND SEWER MUST BE CONSTRUCTED WITH PRESSURE RATED WATER MAIN MATERIALS, PER ILLINOIS ADMINISTRATIVE CODE TITLE 35, SECTION 604.1440, UNLESS VARIANCE IS NOTED ON DRAWINGS. SEWER SHALL BE PRESSURE TESTED TO MAXIMUM EXPECTED SURCHARGE HEAD BEFORE BACKFILLING.

5. ONLY WATER SHALL BE USED TO CONTROL DUST DURING CONSTRUCTION.

6. ENCASE ALL BURIED DUCTILE IRON PIPE WATER MAIN AND APPURTENANCES IN V-BIO ENHANCED POLYETHYLENE ENCASEMENT MATERIALS CONFORMING TO THE MATERIAL AND INSTALLATION REQUIREMENTS OF AWWA C105.

7. DISINFECTION OF WATER MAIN SHALL BE PERFORMED IN ACCORDANCE WITH AWWA C651.

8. LIMITS OF TRENCHLESS SHAFTS SHOWN ARE APPROXIMATE. CONTRACTOR IS RESPONSIBLE FOR DESIGN OF SHAFTS IN ACCORDANCE WITH SPECIFICATIONS.

9. CATHODIC PROTECTION TEST STATION HANDHOLES SHALL BE INSTALLED IN GRASS PARKWAY AREAS, OUTSIDE OF PAVEMENT LIMITS. NOTIFY OWNER'S REPRESENTATIVE IF NO PARKWAY AREAS ARE AVAILABLE.

TREE REMOVAL

5. PROTECT ALL TREES, FENCES, AND OTHER ITEMS NOT SHOWN FOR REMOVAL ON DRAWINGS. MINIMIZE CLEARING OF TREES AND PLANT LIFE WHENEVER POSSIBLE AND ONLY REMOVE TREE SHOWN ON DRAWINGS, OR AS DIRECTED BY OWNER'S REPRESENTATIVE.

TURF RESTORATION

1. ALL TURF AREAS DISTURBED DURING CONSTRUCTION MUST BE RESTORED USING 4-INCH THICK TOPSOIL AND SEEDING, UNLESS OTHERWISE NOTED ON DRAWINGS.

2. TOPSOIL MUST BE FERTILE, FRIABLE, NATURAL LOAM, SURFACE SOIL FREE OF SUBSOIL, CLAY LUMPS, BRUSH, WEEDS, LITTER, ROOTS, STUMPS, STONES, AND OTHER MATERIAL HARMFUL TO PLANT GROWTH.

EXISTING LANDSCAPING

1. WHEN SHOWN ON DRAWINGS, EXISTING LANDSCAPING FEATURES MUST BE REMOVED AND STORED PROPERLY FOR THE DURATION OF CONSTRUCTION. DURING FINAL RESTORATION, LANDSCAPING MUST BE INSTALLED IN ITS PREVIOUS LOCATION OR AS APPROVED.

REV.	DATE	DESCRIPTION	BY	DATE	=	MAY 2025	DESIGNED	—	OG
1	06/23/25	ADDENDUM NO. 3	OG	SCALE	=		CHECKED	—	JWG
				SCALE	=		DRAWN	—	EDB
				PROJECT NO	=	128-10031-001	CHECKED	—	OG



DUPAGE WATER COMMISSION
WATERLINK EXTENSION
CONTRACT TW-6/25 SECTION 1 WEST TRANSMISSION MAIN

GENERAL
GENERAL NOTES



012

DRAWING NO.
G-004

14

SHEET NO.
4 of 199

File: C:\Users\jogorza\Documents\ACD\Books\Lee_A_Day\128-10031-001\Project_Files\4-1-BM-CAD_PROGRAM-WIDE\General\PAIG-TWIST\G007-008-HORIZONTAL_ALIGNMENT_CONTROL-TWIST.dwg Plot Date: 6/13/2025 1:43 PM By: Garza, Ozde



LINE TABLE - CONTRACT TW-6/25 SECTION 1								
LINE #	LENGTH	DIRECTION	START POINT			END POINT		
			STATION	NORTHING	EASTING	STATION	NORTHING	EASTING
L1	48.00'	N88° 57' 08"E	596+56.80	1834480.4906	1024375.0884	597+04.80	1834481.3688	1024423.0834
L2	207.87'	N01° 38' 52"W	597+04.80	1834481.3688	1024423.0834	599+12.67	1834689.1481	1024417.1063
L3	253.15'	N00° 27' 04"W	599+12.67	1834689.1481	1024417.1063	601+65.82	1834942.2940	1024415.1133
L4	248.64'	N01° 34' 04"W	601+65.82	1834942.2940	1024415.1133	604+14.47	1835190.8457	1024408.3106
L5	161.09'	N01° 50' 03"W	604+14.47	1835190.8457	1024408.3106	605+75.56	1835351.8569	1024403.1543
L6	646.00'	N01° 04' 36"W	605+75.56	1835351.8569	1024403.1543	612+21.56	1835997.7427	1024391.0150
L7	75.24'	N01° 40' 53"W	612+21.56	1835997.7427	1024391.0150	612+96.80	1836072.9499	1024388.8071
L8	23.94'	N12° 55' 53"W	612+96.80	1836072.9499	1024388.8071	613+20.74	1836096.2804	1024383.4502
L9	1803.05'	N01° 38' 47"W	613+20.74	1836096.2804	1024383.4502	631+23.79	1837898.5874	1024331.6480
L10	1001.27'	N01° 50' 31"W	631+23.79	1837898.5874	1024331.6480	641+25.06	1838899.3381	1024299.4637
L11	122.08'	N00° 24' 30"E	641+25.06	1838899.3381	1024299.4637	642+47.13	1839021.4118	1024300.3335
L12	28.62'	N00° 24' 30"E	642+47.13	1839021.4118	1024300.3335	642+75.75	1839050.0280	1024300.5374
L13	556.77'	N01° 57' 57"W	642+75.75	1839050.0280	1024300.5374	648+32.52	1839606.4725	1024281.4388
L14	414.63'	N01° 17' 38"W	648+32.52	1839606.4725	1024281.4388	652+47.15	1840020.9923	1024272.0757
L15	1946.99'	N01° 26' 44"W	652+47.15	1840020.9923	1024272.0757	671+94.14	1841967.3637	1024222.9632
L16	302.99'	N00° 47' 46"W	671+94.14	1841967.3637	1024222.9632	674+97.13	1842270.3289	1024218.7533
L17	26.89'	N10° 47' 46"W	674+97.13	1842270.3289	1024218.7533	675+24.03	1842296.7463	1024213.7158
L18	167.85'	N00° 47' 46"W	675+24.03	1842296.7463	1024213.7158	676+91.88	1842464.5802	1024211.3836
L19	404.57'	N06° 00' 48"E	676+91.88	1842464.5802	1024211.3836	680+96.44	1842866.9194	1024253.7658

1

CITY OF NAPERVILLE BENCHMARKS:

1. CITY OF NAPERVILLE MONUMENTS BASED ON FOLLOWING DATUMS:
HORIZONTAL DATUM
NAD 83 (2007) ILLINOIS STATE PLANE TRANSVERSE MERCATOR, EAST ZONE.

VERTICAL DATUM
NAVD 1988 ADJUSTMENT

2. STATION NO. 625
BERNSTEN 3D TOP SECURITY MONUMENT CONSISTING OF A 3/16" DIA. STAINLESS STEEL DATUM POINT ON THREADED 3/8" x 4" LONG ROD TOTALING (8') IN LENGTH WITH GREASED TOP SECURITY SLEEVE ENCLOSED IN SAND AND 6" PVC PIPE WITH BMAC 6 ALUMINUM ACCESS COVER. LOCATED ALONG THE NORTH SIDE OF 75TH ST WEST OF PLAINFIELD-NAPERVILLE RD NEAR 1331 W 75TH ST.

N= 1,850,724.35
E= 1,027,461.07
ELEV= 687.65

3. STATION NO. 1004
BERNSTEN 3D TOP SECURITY MONUMENT CONSISTING OF A 3/16" DIA. STAINLESS STEEL DATUM POINT ON THREADED 3/8" x 4" LONG ROD TOTALING (12') IN LENGTH WITH GREASED TOP SECURITY SLEEVE ENCLOSED IN SAND AND 6" PVC PIPE WITH BMAC 6 ALUMINUM ACCESS COVER. LOCATED AT THE SOUTHEAST CORNER OF RICKERT RD AND SANCTUARY LN.

N= 1,852,697.84
E= 1,024,351.32
ELEV= 703.93

- NOTES:
1. ALL HORIZONTAL COORDINATES SHOWN ARE ILLINOIS STATE PLANE, EAST ZONE, GRID COORDINATES. NORTH AMERICAN DATUM OF 1983, 2011 ADJUSTMENT, NAD 83 (2011).
2. ALL VERTICAL COORDINATES ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88) ARRIVED AT UTILIZING ELLIPSOID HEIGHTS IN CONJUNCTION WITH GEOID HEIGHTS (GEOID '18) TO ARRIVE AT THE ORTHOMETRIC HEIGHTS (APPROXIMATE ELEVATIONS) FOR THE PROJECT.
3. HORIZONTAL ALIGNMENT SHOWN IS CENTER LINE OF WATER TRANSMISSION MAIN.

- PROJECT BENCHMARKS:
1. SITE BM 30000
SPIKE NAIL IN SOUTH FACE OF 2ND POWER POLE EAST OF BOOK RD ON NORTH SIDE OF 75TH ST
ELEV=696.61
2. SITE BM 30005
CROSS ON TOP OF EAST SIDE OF CONCRETE BASE FOR TRAFFIC SIGNAL MAST ARM AT NORTHWEST CORNER 75TH ST AND BOOK RD
ELEV=696.58
3. SITE BM 40007
SQUARE CUT ON NORTH SIDE OF LIGHT POLE BASE. FIRST POLE WEST OF BOOK RD, SOUTH SIDE OF 95TH ST
ELEV=674.18
4. SITE BM 40010
X CUT ON SOUTH SIDE OF LIGHT POLE BASE. NORTHWEST CORNER OF 95TH ST AND BOOK RD
ELEV=675.56

REV.	DATE	DESCRIPTION	BY	DATE		DESIGNED	—	OG
1	06/23/25	ADDENDUM NO. 3	OG	SCALE	= 1"=300'	CHECKED	—	JWG
				SCALE	=	DRAWN	—	EDB
				PROJECT NO	= 128-10031-001	CHECKED	—	OG



DUPAGE WATER COMMISSION
WATERLINK EXTENSION
CONTRACT TW-6/25 SECTION 1 WEST TRANSMISSION MAIN

GENERAL
HORIZONTAL ALIGNMENT CONTROL
STA 596+56.80 TO STA 680+00



0 300 600	
DRAWING NO.	SHEET NO.
G-008	8 of 199

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LINE TABLE - CONTRACT TW-6/25 SECTION 1								
LINE #	LENGTH	DIRECTION	START POINT			END POINT		
			STATION	NORTHING	EASTING	STATION	NORTHING	EASTING
L19	404.57'	N06° 00' 48"E	676+91.88	1842464.5802	1024211.3836	680+96.44	1842866.9194	1024253.7658
L20	1646.69'	N00° 54' 22"E	680+96.44	1842866.9194	1024253.7658	697+43.13	1844513.4019	1024279.8059
L21	1098.48'	N00° 54' 11"E	697+43.13	1844513.4019	1024279.8059	708+41.61	1845611.7411	1024297.1162
L22	1147.21'	N00° 13' 28"E	708+41.61	1845611.7411	1024297.1162	719+88.82	1846758.9436	1024301.6112
L23	298.57'	N00° 46' 22"E	719+88.82	1846758.9436	1024301.6112	722+87.39	1847057.4880	1024305.6388
L24	859.37'	N00° 58' 32"E	722+87.39	1847057.4880	1024305.6388	731+46.76	1847916.7318	1024320.2717
L25	2316.43'	N00° 04' 26"E	731+46.76	1847916.7318	1024320.2717	754+63.18	1850233.1560	1024323.2543
L26	56.52'	N05° 04' 26"E	754+63.18	1850233.1560	1024323.2543	755+19.71	1850289.4581	1024328.2532
L27	360.03'	N00° 17' 15"W	755+19.71	1850289.4581	1024328.2532	758+79.74	1850649.4856	1024326.4460

1

CITY OF NAPERVILLE BENCHMARKS:

1. CITY OF NAPERVILLE MONUMENTS BASED ON FOLLOWING DATUMS:

HORIZONTAL DATUM
NAD 83 (2007) ILLINOIS STATE PLANE TRANSVERSE MERCATOR, EAST ZONE.

VERTICAL DATUM
NAVD 1988 ADJUSTMENT

2. STATION NO. 625

BERNSTEN 3D TOP SECURITY MONUMENT CONSISTING OF A 3/16" DIA. STAINLESS STEEL DATUM POINT ON THREADED 3/16" x 4" LONG ROD TOTALING (8") IN LENGTH WITH GREASED TOP SECURITY SLEEVE ENCLOSED IN SAND AND 6" PVC PIPE WITH BMAC 6 ALUMINUM ACCESS COVER. LOCATED ALONG THE NORTH SIDE OF 75TH ST WEST OF PLAINFIELD-NAPERVILLE RD NEAR 1331 W 75TH ST.

N= 1,850,724.35
E= 1,027,461.07
ELEV= 687.65

3. STATION NO. 1004

BERNSTEN 3D TOP SECURITY MONUMENT CONSISTING OF A 3/16" DIA. STAINLESS STEEL DATUM POINT ON THREADED 3/16" x 4" LONG ROD TOTALING (12") IN LENGTH WITH GREASED TOP SECURITY SLEEVE ENCLOSED IN SAND AND 6" PVC PIPE WITH BMAC 6 ALUMINUM ACCESS COVER. LOCATED AT THE SOUTHEAST CORNER OF RICKERT RD AND SANCTUARY LN.

N= 1,852,697.84
E= 1,024,351.32
ELEV= 703.93

- NOTES:
- ALL HORIZONTAL COORDINATES SHOWN ARE ILLINOIS STATE PLANE, EAST ZONE, GRID COORDINATES. NORTH AMERICAN DATUM OF 1983, 2011 ADJUSTMENT, NAD 83 (2011).
 - ALL VERTICAL COORDINATES ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88) ARRIVED AT UTILIZING ELLIPSOID HEIGHTS IN CONJUNCTION WITH GEOID HEIGHTS (GEOID '18) TO ARRIVE AT THE ORTHOMETRIC HEIGHTS (APPROXIMATE ELEVATIONS) FOR THE PROJECT.
 - HORIZONTAL ALIGNMENT SHOWN IS CENTER LINE OF WATER TRANSMISSION MAIN.
- PROJECT BENCHMARKS:
- SITE BM 30000
SPIKE NAIL IN SOUTH FACE OF 2ND POWER POLE EAST OF BOOK RD ON NORTH SIDE OF 75TH ST
ELEV=696.61
 - SITE BM 30005
CROSS ON TOP OF EAST SIDE OF CONCRETE BASE FOR TRAFFIC SIGNAL MAST ARM AT NORTHWEST CORNER 75TH ST AND BOOK RD
ELEV=696.58
 - SITE BM 40007
SQUARE CUT ON NORTH SIDE OF LIGHT POLE BASE. FIRST POLE WEST OF BOOK RD, SOUTH SIDE OF 95TH ST
ELEV=674.18
 - SITE BM 40010
X CUT ON SOUTH SIDE OF LIGHT POLE BASE. NORTHWEST CORNER OF 95TH ST AND BOOK RD
ELEV=675.56

REV.	DATE	DESCRIPTION	BY	DATE	DESIGNED	OG
1	06/23/25	ADDENDUM NO. 3	OG	= MAY 2025	CHECKED	JWG
				SCALE = 1"=300'	DRAWN	EDB
				PROJECT NO = 128-10031-001	CHECKED	OG

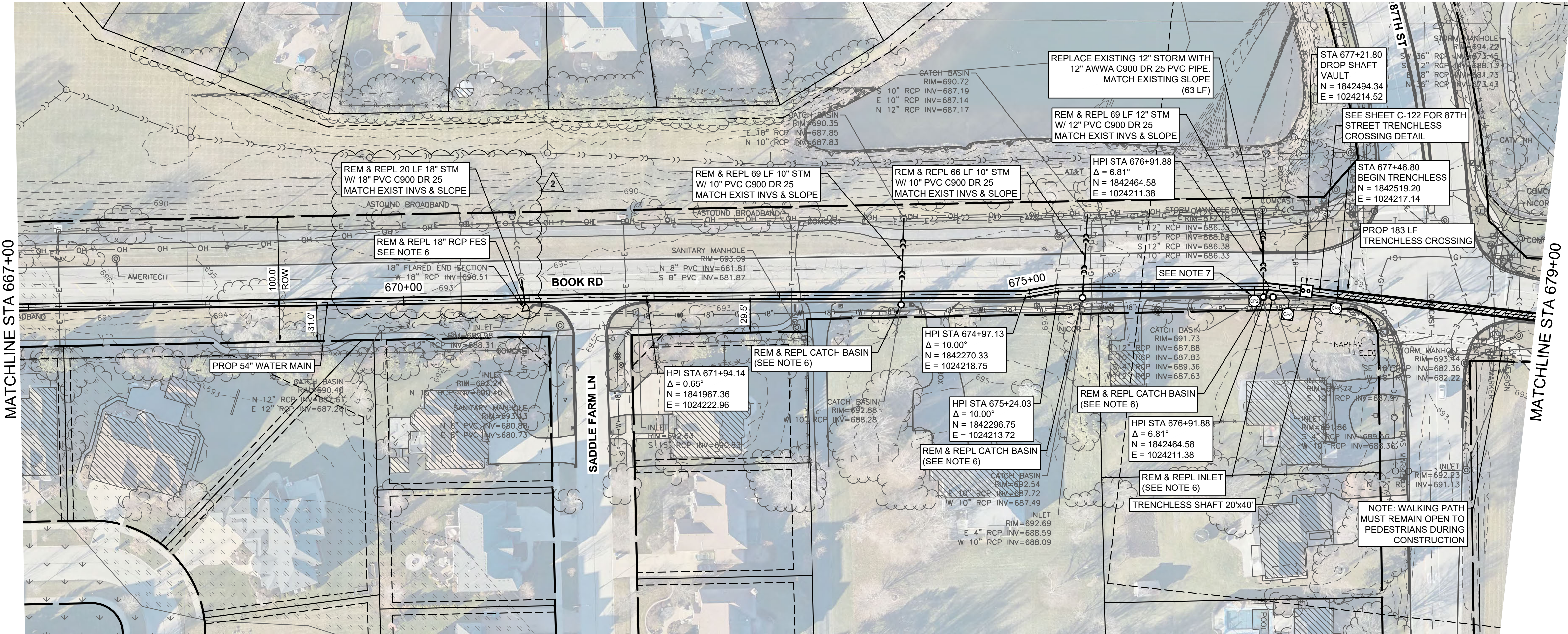


DUPAGE WATER COMMISSION
WATERLINK EXTENSION
CONTRACT TW-6/25 SECTION 1 WEST TRANSMISSION MAIN

GENERAL
HORIZONTAL ALIGNMENT CONTROL
STA 680+00 TO STA 758+79.74



	
DRAWING NO. G-009	SHEET NO. 9 of 199



- GENERAL NOTES:**
- BACKGROUND AERIAL IMAGERY AND CONTOUR DATA WAS CAPTURED MARCH 2024. FIELD VERIFY PROJECT SITE PRIOR TO CONSTRUCTION AS CONDITIONS MAY HAVE CHANGED.
 - LOCATE AND FIELD VERIFY ALL EXISTING UTILITIES PRIOR TO ANY EXCAVATION ACTIVITIES.
 - COORDINATE UTILITY CONFLICTS AND REQUIRED RELOCATIONS WITH MUNICIPAL AND PRIVATE UTILITY OWNERS.
 - COORDINATE ALL CONSTRUCTION ACTIVITIES WITH OWNER'S REPRESENTATIVE AND NOTIFY LANDOWNERS PRIOR TO ANY WORK ON PRIVATE PROPERTY. NO CONSTRUCTION ACTIVITIES ALLOWED OUTSIDE OF PERMANENT AND TEMPORARY EASEMENT / LICENSE AGREEMENT LIMITS SHOWN.
 - SEE WATER MAIN DETAIL SHEETS.
 - FOR ALL CATCH BASINS TO BE REMOVED AND REPLACED, MATCH EXISTING CATCH BASIN TYPE, SIZE AND INVERTS. SEE CITY OF NAPERVILLE STANDARD CIVIL DETAILS.

- SHEET NOTES:**
- ISOLATION TEST STATION REQUIRED FOR PCCP PIPE OPTION ONLY.

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REV.	DATE	DESCRIPTION	BY	DATE	BY	DESIGNED	MC
1	06/23/25	ADDENDUM NO. 2	CH	SCALE = 1"=50' HORZ	CHECKED	KD	
				SCALE = 1"=5' VERT	DRAWN	BH	
				PROJECT NO = 128-10031-001	CHECKED	JM	

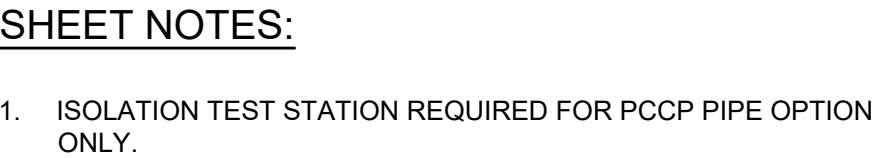


DUPAGE WATER COMMISSION
WATERLINK EXTENSION
CONTRACT TW-6/25 SECTION 1 WEST TRANSMISSION MAIN

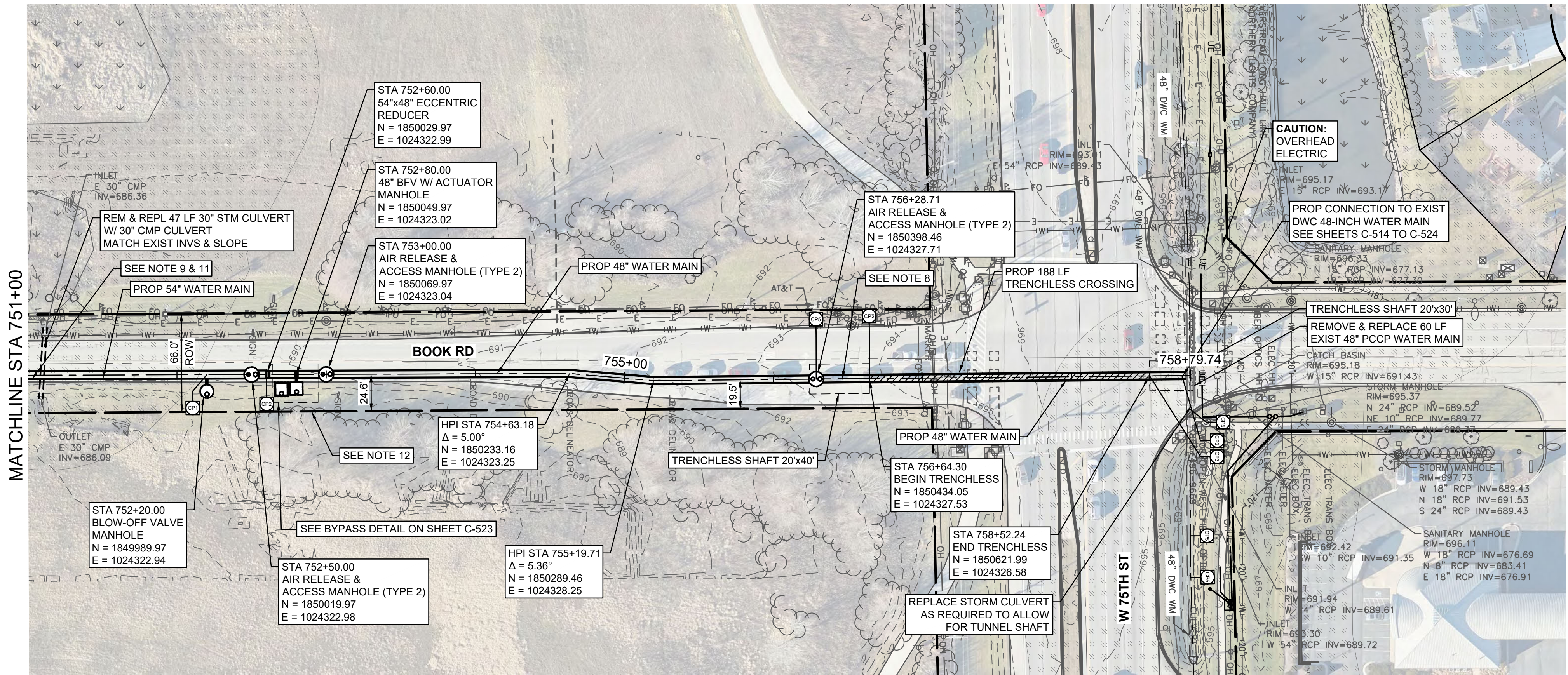
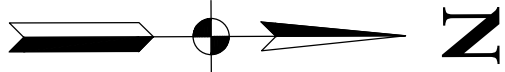
CIVIL
BOOK ROAD
WATER TRANSMISSION MAIN
PLAN
STA 667+00 TO STA 679+00



0 50 100	
DRAWING NO. C-108	SHEET NO. 17 of 199



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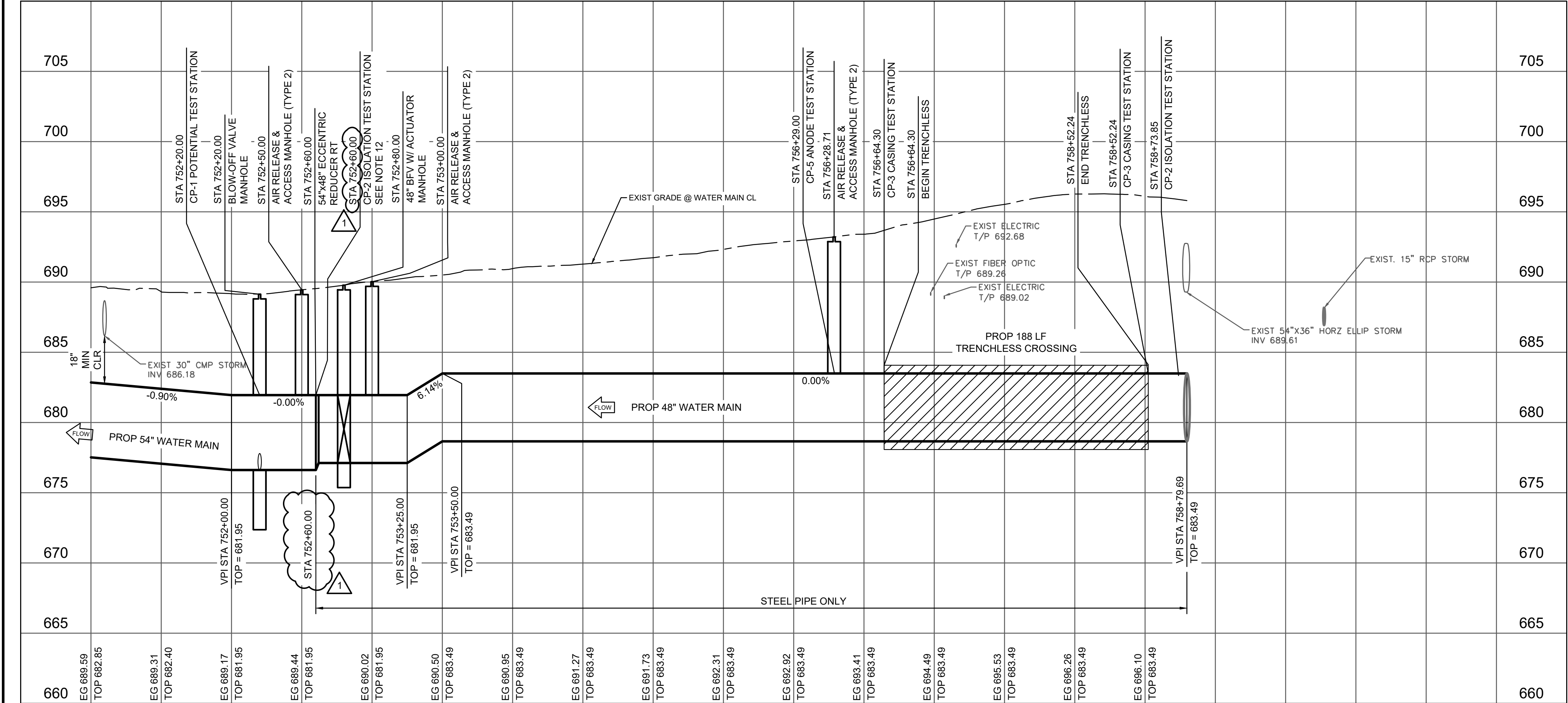


GENERAL NOTES:

- BACKGROUND AERIAL IMAGERY AND CONTOUR DATA WAS CAPTURED MARCH 2024. FIELD VERIFY PROJECT SITE PRIOR TO CONSTRUCTION AS CONDITIONS MAY HAVE CHANGED.
- LOCATE AND FIELD VERIFY ALL EXISTING UTILITIES PRIOR TO ANY EXCAVATION ACTIVITIES.
- COORDINATE UTILITY CONFLICTS AND REQUIRED RELOCATIONS WITH MUNICIPAL AND PRIVATE UTILITY OWNERS.
- COORDINATE ALL CONSTRUCTION ACTIVITIES WITH OWNER'S REPRESENTATIVE AND NOTIFY LANDOWNERS PRIOR TO ANY WORK ON PRIVATE PROPERTY. NO CONSTRUCTION ACTIVITIES ALLOWED OUTSIDE OF PERMANENT AND TEMPORARY EASEMENT / LICENSE AGREEMENT LIMITS SHOWN.
- SEE WATER MAIN DETAIL SHEETS.
- FOR ALL CATCH BASINS TO BE REMOVED AND REPLACED, MATCH EXISTING CATCH BASIN TYPE, SIZE AND INVERTS. SEE CITY OF NAPERVILLE STANDARD CIVIL DETAILS.

SHEET NOTES:

- REMOVE AND REPLACE STORM CATCH BASIN, MATCH EXISTING INVERTS, STRUCTURE SIZE & TYPE. (SEE CITY OF NAPERVILLE STANDARD CIVIL DETAILS).
- DO NOT CONSTRUCT 50 FEET OF WATER MAIN SOUTH OF SOUTH TRENCHLESS CROSSING SHOWN ON THIS SHEET UNTIL THE TRENCHLESS CROSSING UNDER 75TH STREET IS COMPLETE AND THE FINAL INSTALLED LOCATION OF THE SOUTH END OF THE TRENCHLESS PIPE IS KNOWN.
- DISRUPTION BEYOND THE EXTENTS OF THE EXISTING CULVERT MUST BE MINIMIZED DUE TO SENSITIVE ADJACENT WETLAND AREAS.
- FIELD VERIFY EXISTING DWG 48-INCH PCCP WATER MAIN PRIOR TO CONSTRUCTION OF 48-INCH TRENCHLESS CROSSING. VERIFY DEPTH AND LOCATION OF PIPE JOINTS AND ADJUST TRENCHLESS CROSSING HORIZONTAL AND VERTICAL ALIGNMENTS AS NEEDED FOR PROPOSED PIPE CONNECTION. SUBMIT PROPOSED MODIFICATIONS TO OWNER'S REPRESENTATIVE FOR REVIEW. SEE SHEET C-514 TO C-524 FOR CONNECTION DETAILS.
- DURING CULVERT REPLACEMENT CONTRACTOR TO INSTALL COFFER DAM ON UPSTREAM SIDE OF CULVERT IN ACCORDANCE WITH IUM-503 AND WILL UTILIZE DEWATERING SUMP IN ACCORDANCE WITH IL-650
- ISOLATION TEST STATION REQUIRED FOR PCCP PIPE OPTION ONLY.



REV.	DATE	DESCRIPTION	BY	DATE	DESIGNED	—	MC
1	06/23/25	ADDENDUM NO. 3	OG	SCALE = 1"=50' HORZ	CHECKED	—	KD
				SCALE = 1"=5' VERT	DRAWN	—	BH
				PROJECT NO = 128-10031-001	CHECKED	—	JM

DUPAGE WATER COMMISSION

WATERLINK EXTENSION

CONTRACT TW-6/25 SECTION 1 WEST TRANSMISSION MAIN

CIVIL

BOOK ROAD

WATER TRANSMISSION MAIN

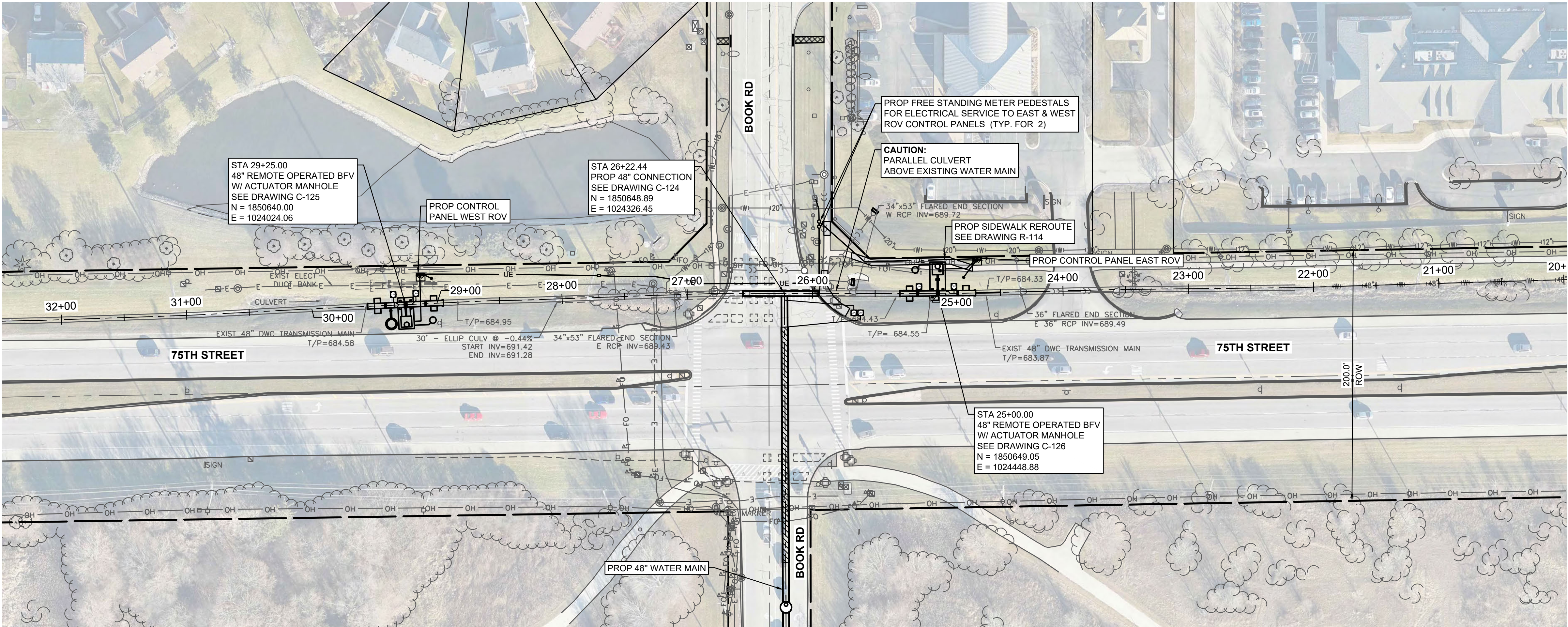
PLAN & PROFILE

STA 751+00 TO STA 759+00

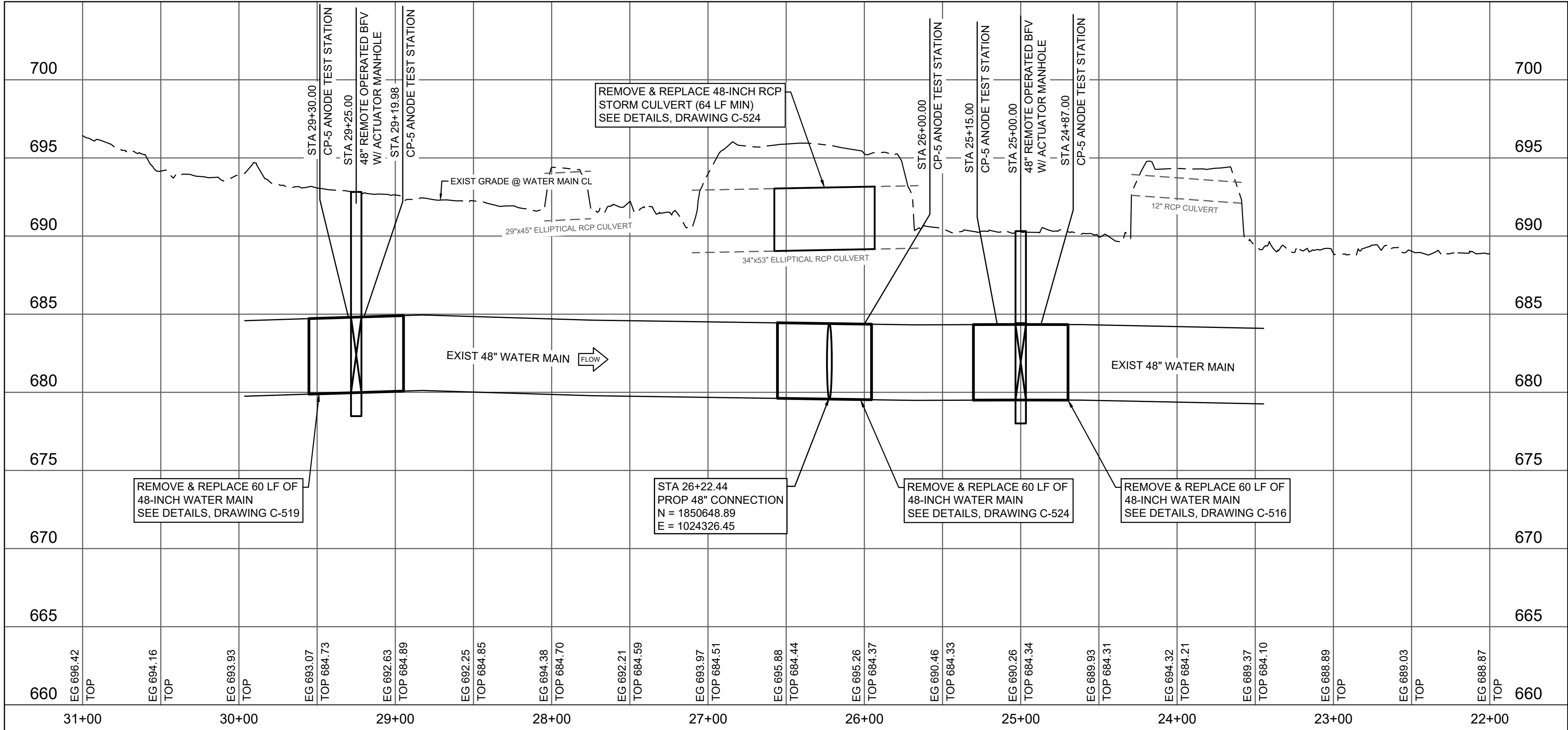
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DRAWING NO. C-121

SHEET NO. 30 of 199



- NOTES:**
- BACKGROUND AERIAL IMAGERY AND CONTOUR DATA WAS CAPTURED MARCH 2024. FIELD VERIFY PROJECT SITE PRIOR TO CONSTRUCTION AS CONDITIONS MAY HAVE CHANGED.
 - LOCATE AND FIELD VERIFY ALL EXISTING UTILITIES PRIOR TO ANY EXCAVATION ACTIVITIES.
 - COORDINATE UTILITY CONFLICTS AND REQUIRED RELOCATIONS WITH MUNICIPAL AND PRIVATE UTILITY OWNERS.
 - SHUTDOWN OF 48-INCH WATER MAIN CAN ONLY BE PERFORMED DURING LOW DEMAND MONTHS AS DESCRIBED IN SPECIFICATION SECTION 01 11 00 - SUMMARY OF WORK. OPERATION OF EXISTING VALVES TO BE PERFORMED BY OR IN PRESENCE OF OWNER.
 - COORDINATE ALL CONSTRUCTION ACTIVITIES WITH OWNER'S REPRESENTATIVE AND NOTIFY OWNER MINIMUM OF TWO (2) WEEKS PRIOR TO REQUESTED SHUTDOWN OF EXISTING 48-INCH WATER MAIN.
 - SEE DRAWINGS C-501 TO C-529 FOR WATER MAIN STANDARD DETAILS.
 - SEE DRAWINGS C-514 TO C-525 FOR PROPOSED 48-INCH WATER MAIN CONNECTION AND 48-INCH REMOTE OPERATED VALVE DETAILS.
 - HYDROSTATICALLY TEST AND DISINFECT PROPOSED 48-INCH VALVES, PIPING, AND CONNECTION TO EXISTING 48-INCH WATER MAIN BETWEEN STA 24+70 AND STA 29+60 ALONG 75TH STREET AND SOUTH TO BUTTERFLY VALVE AT STA 752+80 ALONG BOOK ROAD PRIOR TO RETURNING EXISTING 48-INCH WATER MAIN TO SERVICE. DISINFECTION SHALL BE PERFORMED IN ACCORDANCE WITH AWWA C651.
 - EXPOSED ENDS OF EXISTING 48-INCH PCCP WATER MAIN SHALL BE CAPPED DURING ALL NON-WORKING HOURS.
 - BYPASS PUMP AS REQUIRED TO MAINTAIN FLOW IN DITCHES AT ALL TIMES UNTIL WORK IN DITCHES AND INSTALLATION OF CULVERT IS COMPLETE.
 - RESTORE AND REGRADE DITCHES TO EXISTING CONDITIONS UPON COMPLETION OF CONSTRUCTION ACTIVITIES.



REV.	DATE	DESCRIPTION	BY	DATE	DESIGNED	—	OG
1	06/23/25	ADDENDUM NO. 2	OG	SCALE = 1"=50' HORZ	CHECKED	—	JWG
				SCALE = 1"=5' VERT	DRAWN	—	TMD
				PROJECT NO = 128-10031-001	CHECKED	—	OG

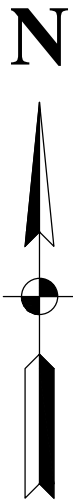
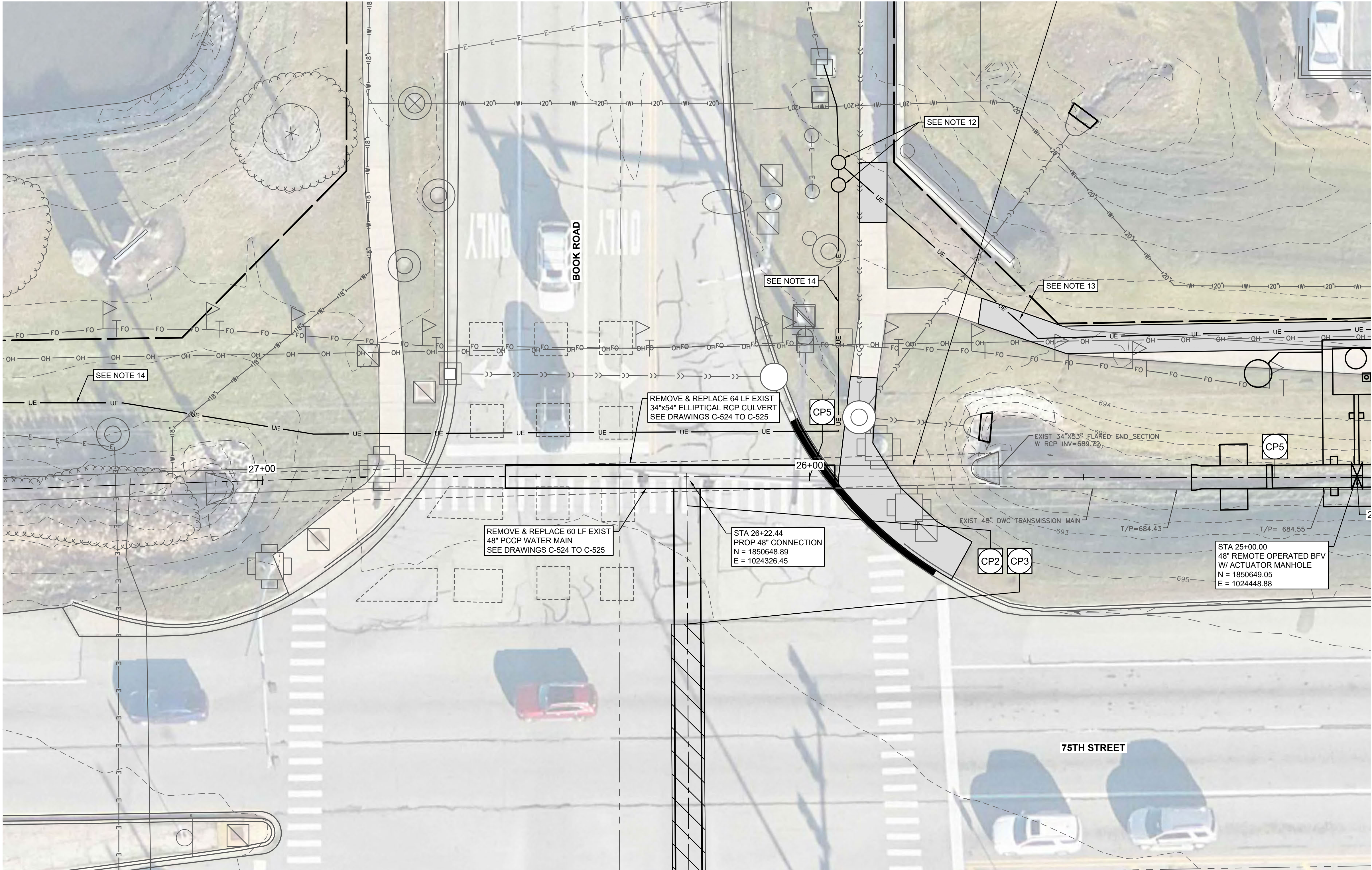
DUPAGE WATER COMMISSION
WATERLINK EXTENSION
CONTRACT TW-6/25 SECTION 1 WEST TRANSMISSION MAIN

CIVIL
75TH STREET
WATER TRANSMISSION MAIN
OVERALL PLAN
DWC SYSTEM CONNECTIONS

0 50 100

DRAWING NO. C-123

SHEET NO. 32 of 199



NOTES:

- BACKGROUND AERIAL IMAGERY AND CONTOUR DATA WAS CAPTURED MARCH 2024. FIELD VERIFY PROJECT SITE PRIOR TO CONSTRUCTION AS CONDITIONS MAY HAVE CHANGED.
- LOCATE AND FIELD VERIFY ALL EXISTING UTILITIES PRIOR TO ANY EXCAVATION ACTIVITIES.
- COORDINATE UTILITY CONFLICTS AND REQUIRED RELOCATIONS WITH MUNICIPAL AND PRIVATE UTILITY OWNERS.
- SHUTDOWN OF 48-INCH WATER MAIN CAN ONLY BE PERFORMED DURING LOW DEMAND MONTHS AS DESCRIBED IN SPECIFICATION SECTION 01 11 00 - SUMMARY OF WORK. OPERATION OF EXISTING VALVES TO BE PERFORMED BY OR IN PRESENCE OF OWNER.
- COORDINATE ALL CONSTRUCTION ACTIVITIES WITH OWNER'S REPRESENTATIVE AND NOTIFY OWNER MINIMUM OF TWO (2) WEEKS PRIOR TO REQUESTED SHUTDOWN OF EXISTING 48-INCH WATER MAIN.
- SEE DRAWINGS C-501 TO C-529 FOR WATER MAIN STANDARD DETAILS.
- SEE DRAWINGS C-514 TO C-525 FOR PROPOSED 48-INCH WATER MAIN CONNECTION AND 48-INCH REMOTE OPERATED VALVE DETAILS.
- EXPOSED ENDS OF EXISTING 48-INCH PCCP WATER MAIN SHALL BE CAPPED DURING ALL NON-WORKING HOURS.
- HYDROSTATICALLY TEST AND DISINFECT PROPOSED 48-INCH VALVES, PIPING, AND CONNECTION TO EXISTING 48-INCH WATER MAIN BETWEEN STA 24+70 AND STA 29+60 ALONG 75TH STREET AND SOUTH TO BUTTERFLY VALVE AT STA 752+80 ALONG BOOK ROAD PRIOR TO RETURNING EXISTING 48-INCH WATER MAIN TO SERVICE. DISINFECTION SHALL BE PERFORMED IN ACCORDANCE WITH AWWA C651.
- BYPASS PUMP AS REQUIRED TO MAINTAIN FLOW IN DITCH AT ALL TIMES UNTIL INSTALLATION OF CULVERT IS COMPLETE.
- RESTORE AND REGRADE DITCH TO EXISTING CONDITIONS UPON COMPLETION OF CONSTRUCTION ACTIVITIES.
- PROPOSED FREE STANDING METER PEDESTAL FOR 100 AMP, 120/240V SERVICE FOR ROV CONTROL PANEL IN ACCORDANCE WITH CITY OF NAPERVILLE DPU-ELECTRIC. SERVICE PEDESTAL PROVIDED AND INSTALLED BY CONTRACTOR. UTILITY WORK BY DPU-E NAPERVILLE PAID FOR BY CONTRACTOR UNDER ALLOWANCE (TYP. OF TWO).
- PROPOSED 3-#2, 1-#6 GRND IN 1-1/2" CONDUIT FOR EAST ROV CONTROL PANEL ELECTRICAL SERVICE.
- PROPOSED 3-#2, 1-#6 GRND IN 1-1/2" CONDUIT FOR WEST ROV CONTROL PANEL ELECTRICAL SERVICE.
- SEE DRAWINGS E-501 TO E-504 FOR ELECTRICAL DETAILS.

File: C:\Users\jguzar\Documents\ACD\Drawings\128-10031-001\Project Files\4-1-BIM-CAD\TW-61-Water\BookRoad_Connection\C-PUR-BOOK-CON.dwg Plot Date: 6/12/2025 3:13 PM By: Garza, Ozdie

REV.	DATE	DESCRIPTION	BY	DATE	DESIGNED	OG
1	06/23/25	ADDENDUM NO. 2	OG	MAY 2025	CHECKED	JWG
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				PROJECT NO = 128-10031-001	CHECKED	OG

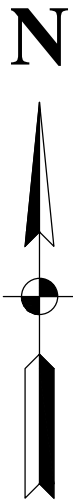
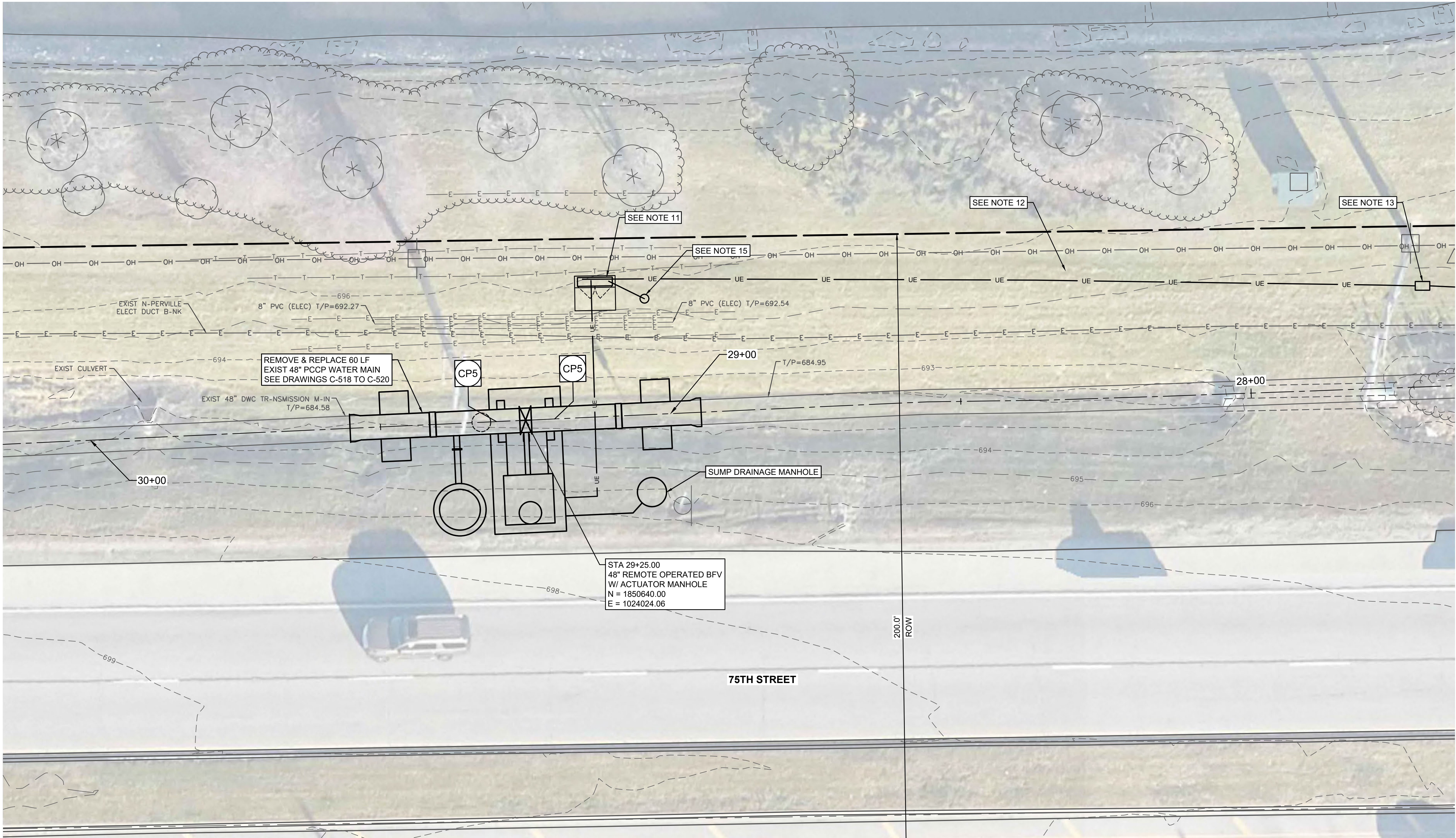


DUPAGE WATER COMMISSION
WATERLINK EXTENSION
CONTRACT TW-6/25 SECTION 1 WEST TRANSMISSION MAIN

CIVIL
75TH STREET
WATER TRANSMISSION MAIN
PLAN
48-INCH WATER MAIN CONNECTION



0 10 20	
DRAWING NO. C-124	SHEET NO. 33 of 199



NOTES:

- BACKGROUND AERIAL IMAGERY AND CONTOUR DATA WAS CAPTURED MARCH 2024. FIELD VERIFY PROJECT SITE PRIOR TO CONSTRUCTION AS CONDITIONS MAY HAVE CHANGED.
- LOCATE AND FIELD VERIFY ALL EXISTING UTILITIES PRIOR TO ANY EXCAVATION ACTIVITIES.
- COORDINATE UTILITY CONFLICTS AND REQUIRED RELOCATIONS WITH MUNICIPAL AND PRIVATE UTILITY OWNERS.
- SHUTDOWN OF 48-INCH WATER MAIN CAN ONLY BE PERFORMED DURING LOW DEMAND MONTHS AS DESCRIBED IN SPECIFICATION SECTION 01 11 00 - SUMMARY OF WORK. OPERATION OF EXISTING VALVES TO BE PERFORMED BY OR IN PRESENCE OF OWNER.
- COORDINATE ALL CONSTRUCTION ACTIVITIES WITH OWNER'S REPRESENTATIVE AND NOTIFY OWNER MINIMUM OF TWO (2) WEEKS PRIOR TO REQUESTED SHUTDOWN OF EXISTING 48-INCH WATER MAIN.
- SEE DRAWINGS C-501 TO C-529 FOR WATER MAIN STANDARD DETAILS.
- SEE DRAWINGS C-514 TO C-525 FOR PROPOSED 48-INCH WATER MAIN CONNECTION AND 48-INCH REMOTE OPERATED VALVE DETAILS.
- EXPOSED ENDS OF EXISTING 48-INCH PCPP WATER MAIN SHALL BE CAPPED DURING ALL NON-WORKING HOURS.
- HYDROSTATICALLY TEST AND DISINFECT PROPOSED 48-INCH VALVES, PIPING, AND CONNECTION TO EXISTING 48-INCH WATER MAIN BETWEEN STA 24+70 AND STA 29+59 ALONG 75TH STREET AND SOUTH TO BUTTERFLY VALVE AT STA 752+80 ALONG BOOK ROAD PRIOR TO RETURNING EXISTING 48-INCH WATER MAIN TO SERVICE. DISINFECTION SHALL BE PERFORMED IN ACCORDANCE WITH AWWA C651.
- BYPASS PUMP AS REQUIRED TO MAINTAIN FLOW IN DITCHES AT ALL TIMES UNTIL WORK IN DITCH AND INSTALLATION OF CULVERT IS COMPLETE. RESTORE AND REGRADE DITCH TO EXISTING CONDITIONS UPON COMPLETION OF CONSTRUCTION ACTIVITIES.
- PROPOSED CONTROL PANEL FOR WEST ROV.
- PROPOSED 3-#2, 1-#6 GRND IN 1-1/2" CONDUIT FOR WEST ROV CONTROL PANEL ELECTRICAL SERVICE.
- PROVIDE 17"x30" POLYMER CONCRETE HANDHOLE FOR ELECTRICAL SERVICE FEEDER, CONCAST MODEL PH22-17-30-24 OR APPROVED EQUAL.
- SEE DRAWINGS E-501 TO E-504 FOR ELECTRICAL DETAILS.
- ROUND TAPERED STEEL POLE AND FOUNDATION WITH YAGI ANTENNA FOR RADIO COMMUNICATION. SEE ELECTRICAL DETAILS FOR ADDITIONAL INFORMATION.

File: C:\Users\jguzar\Documents\Projects\10031-001\Project Files\4-1-BIM-CAD\TW-6-25\Waterlink_Extension\DWG\4-1-BIM-CAD\TW-6-25\Waterlink_Extension.dwg Plot Date: 6/12/2025 3:14 PM By: Gurza, Ozdie

REV.	DATE	DESCRIPTION	BY	DATE	DESIGNED	OG
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				SCALE =	CHECKED	OG
				PROJECT NO = 128-10031-001		



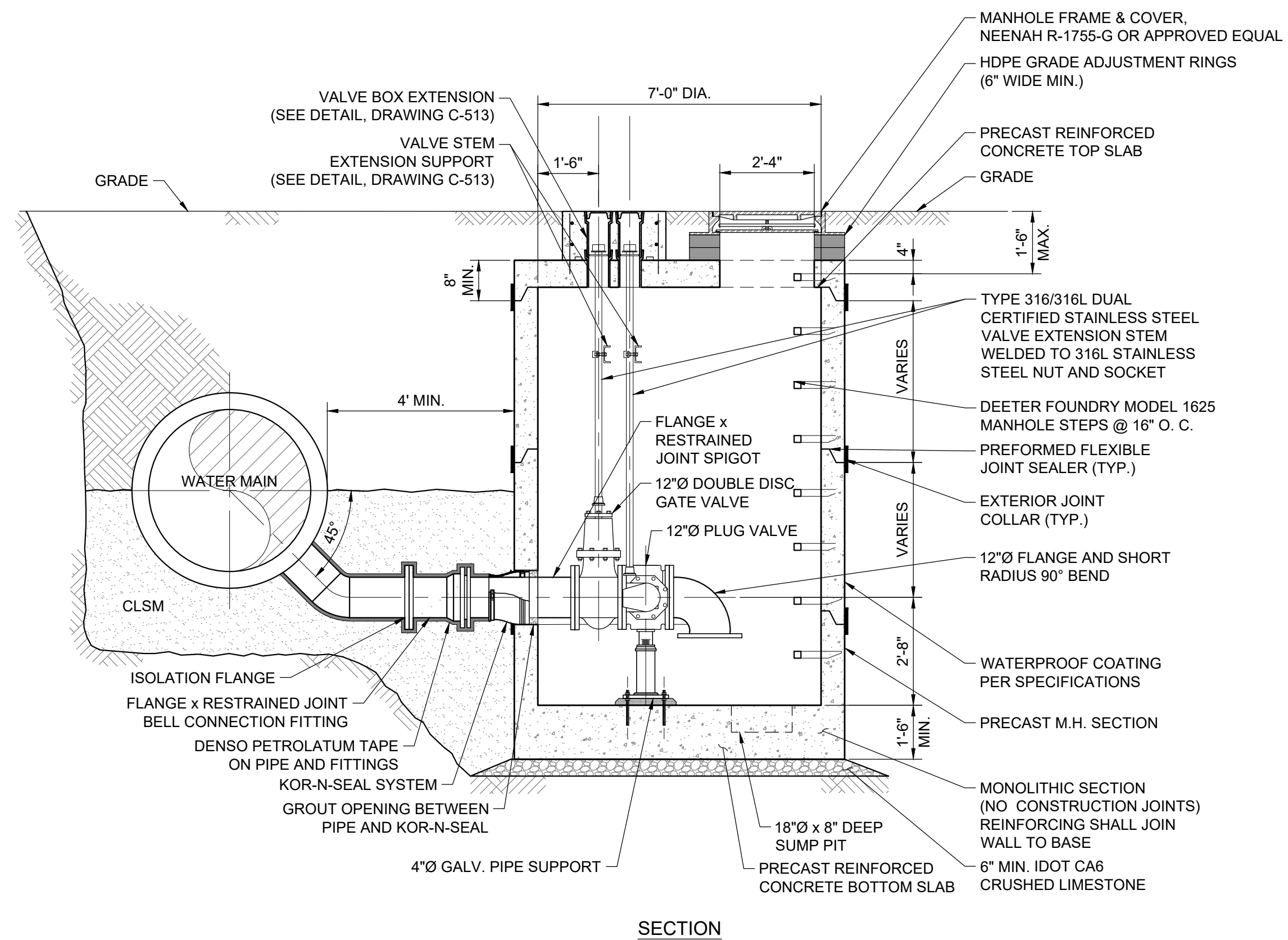
DUPAGE WATER COMMISSION
WATERLINK EXTENSION
CONTRACT TW-6/25 SECTION 1 WEST TRANSMISSION MAIN

CIVIL
75TH STREET
WATER TRANSMISSION MAIN
PLAN
48-INCH REMOTE OPERATED BFV (WEST)



0	10	20
DRAWING NO.	SHEET NO.	
C-125	34 of 199	

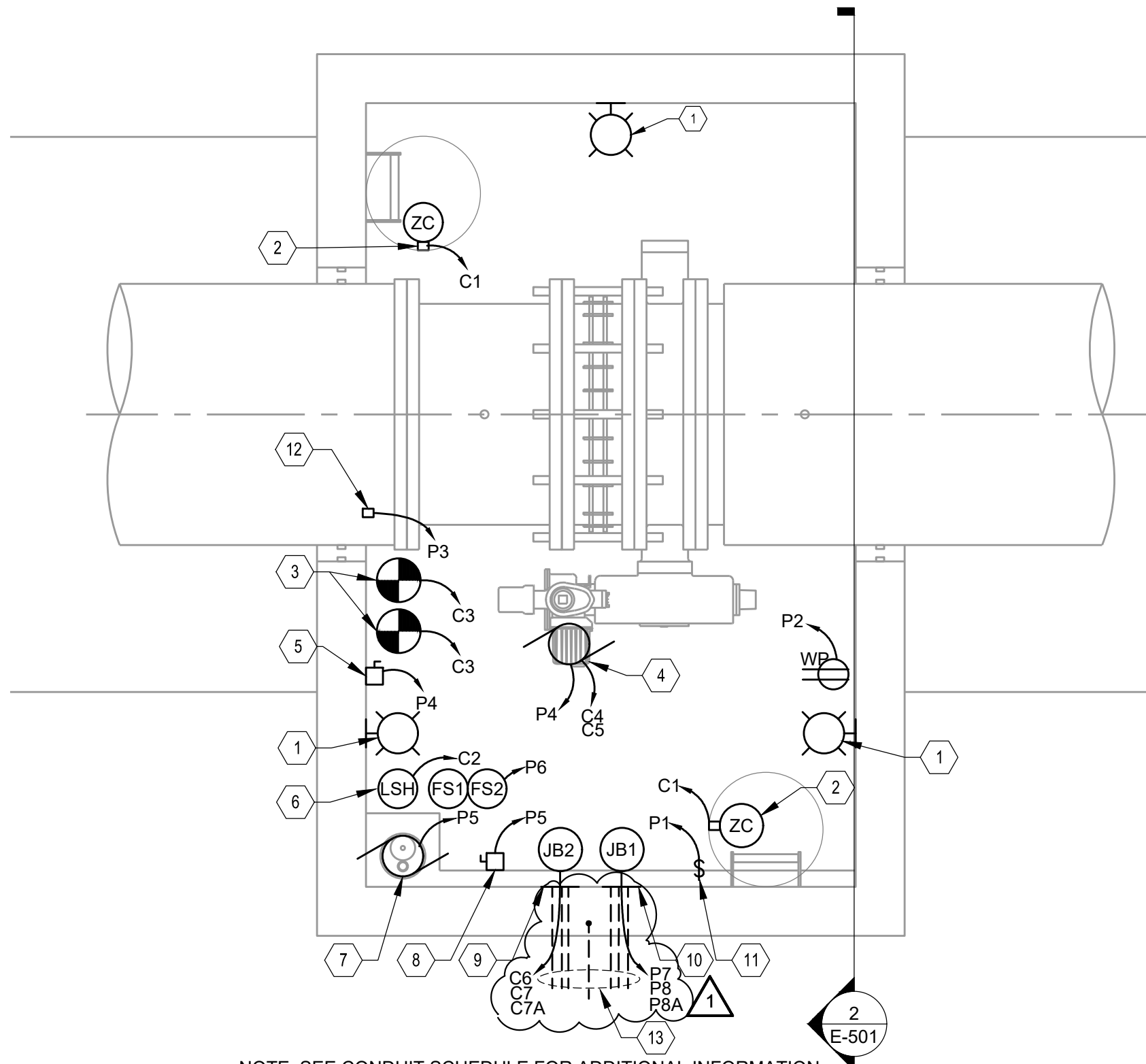
1. EXCEPT WHERE NOTED IN DETAIL, BACKFILL AROUND MANHOLE TO MATCH TRENCH BACKFILL FOR CORRESPONDING LOCATIONS.
2. ALL FLANGE BOLTS AND NUTS SHALL BE CORTEN, UNLESS OTHERWISE NOTED.
3. VALVE STEM EXTENSIONS AND VALVE BOXES IN MANHOLE COVER TO BE CENTERED OVER 2" VALVE OPERATING NUTS.



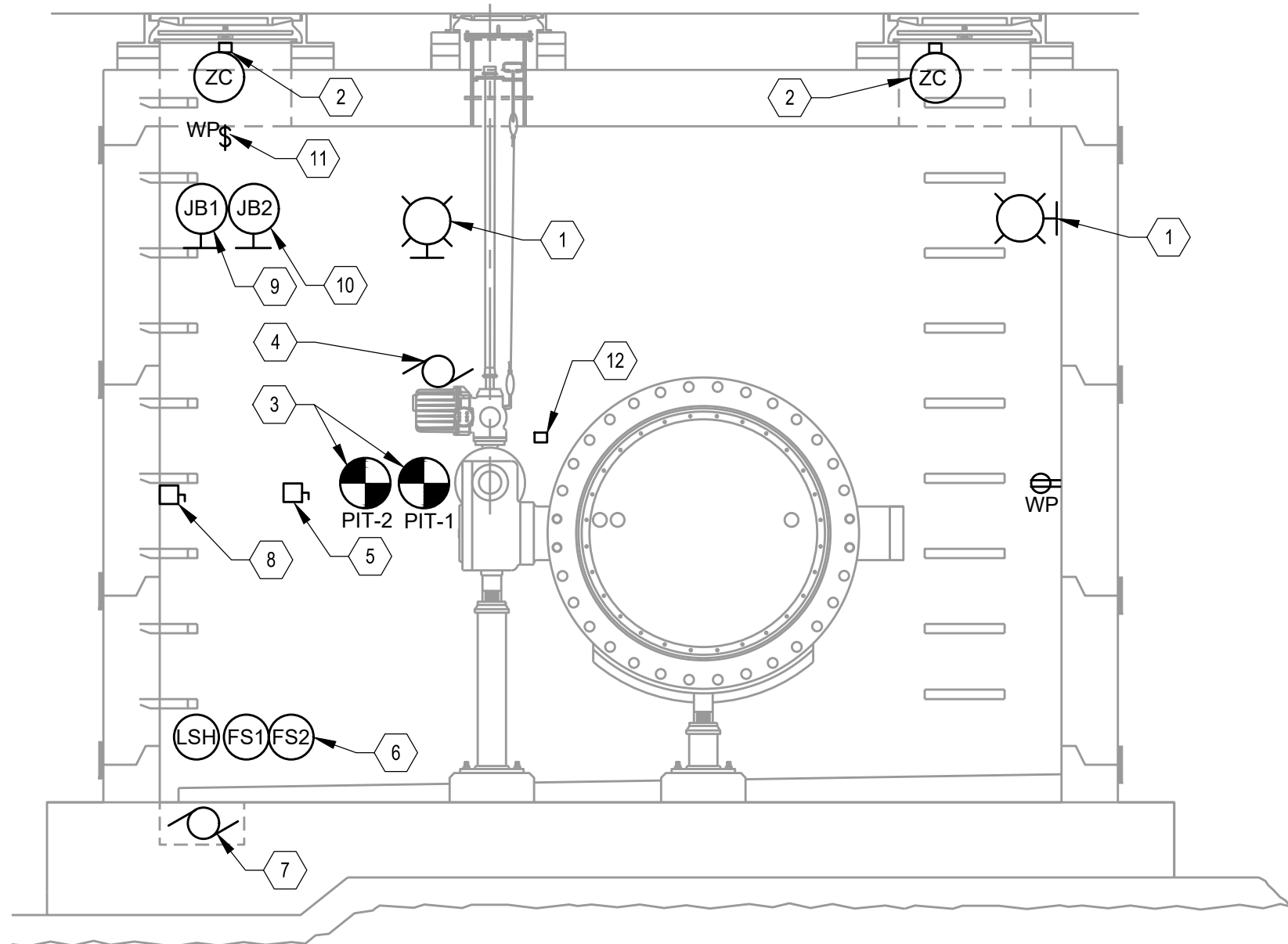
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DRAWING NO. C-505	SHEET NO. 40 of 199

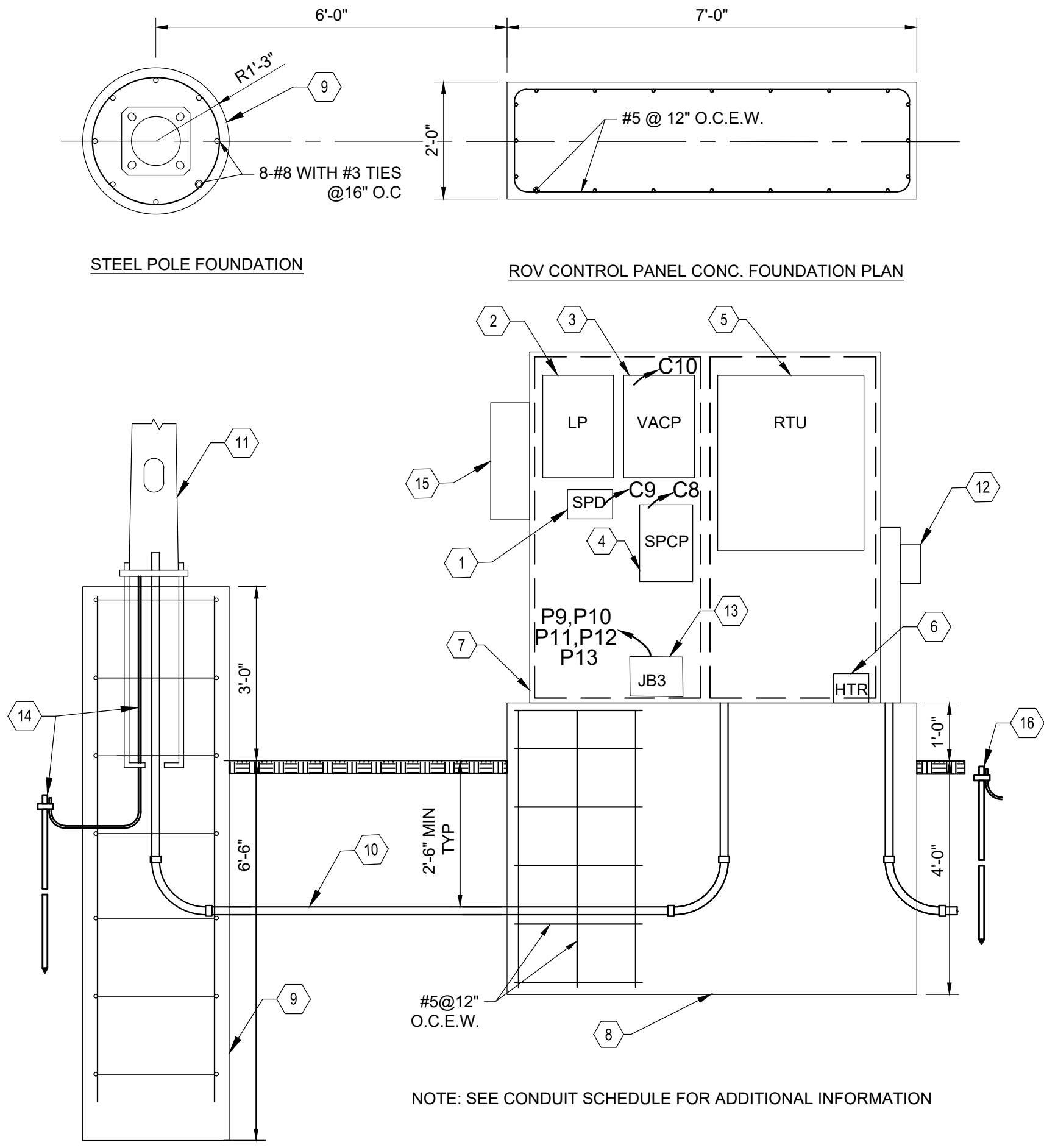
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1 PLAN VIEW
SCALE: NOT TO SCALE



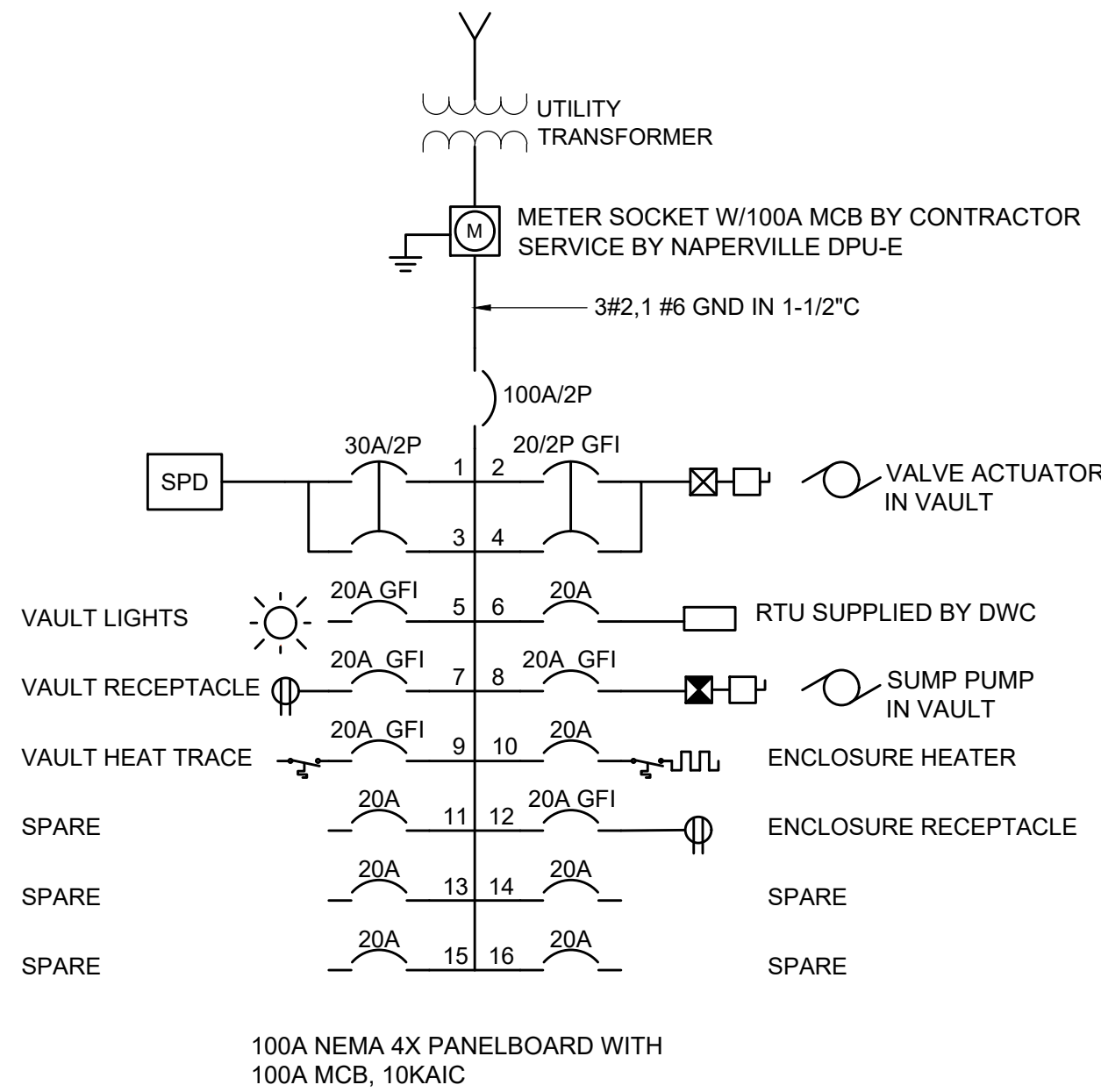
2 SECTION A-A
SCALE: NOT TO SCALE



3 VALVE CONTROL ENCLOSURE FOR ROV AT STATION 602+46.80
SCALE: NOT TO SCALE

DETAIL 1 & 2 KEYED NOTES:

- CODE MASTER JR. CJLL2 120V X 4, LENS TAILORED TO FIXTURE (TYP OF 3)
- LIMIT SWITCH FOR ENTRY ALARM, GO SWITCH MODEL 11-12128-B4, WITH 10' LEADS (TYP OF 2)
- PRESSURE TRANSDUCER ASSEMBLY. SEE ELECTRICAL DETAILS (TYP OF 2, FOR EACH SIDE OF VALVE) MOUNTED SIX FEET ABOVE FLOOR. PROVIDE BUNA-N 1/2" THICK INSULATION AND HEAT TAPE (RAYCHEM SELF-REGULATING, OR EQUAL) FOR SMALL PIPING IN THE VAULT.
- LIMITORQUE L120-20 ELECTRIC ACTUATOR WITH REMOTE CONTROL PANEL IN ROV CONTROL PANEL ENCLOSURE. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION
- NEMA 4X, 6-POLE STAINLESS STEEL DISCONNECT SWITCH FOR ELECTRIC ACTUATOR WITH AUXILIARY CONTACT
- HIGH LEVEL ALARM FLOAT SWITCH PIPE MOUNTED 6" ABOVE FLOOR. PUMP FLOAT SWITCHES FOR ON (FS1) AND OFF (FS2) LOCATED AT SUMP. ECO FLOAT GSE20NO FOR LSH, MINI FLOAT SWITCH SM20NO FOR FS1 AND FS2. FLOAT MOUNTING HARDWARE - GRAINGER #45JZ59
- 1/2 HP EBARA MODEL EPD-5MS1 SUMP PUMP WITH ON AND OFF FLOATS CONTROLLED BY SUMP CONTROL PANEL IN ROV CONTROL PANEL ENCLOSURE
- NEMA 4X STAINLESS STEEL DISCONNECT SWITCH FOR SUMP PUMP
- NEMA 4X HINGED JUNCTION BOX JUNCTION FOR WIRING. PROVIDE SS METAL PARTITION BETWEEN DIFFERENT POWER TYPES. DO NOT RUN CONDUIT FROM BOTTOM OF PULL BOXES
- NEMA 4X HINGED JUNCTION BOX FOR SIGNAL/CONTROL WIRING. PROVIDE SS METAL PARTITION BETWEEN DIFFERENT POWER TYPES. DO NOT RUN CONDUIT FROM BOTTOM OF PULL BOXES
- NEMA 4X LIGHT SWITCH LOCATED NEAR VAULT ACCESS
- HEAT TRACE JUNCTION BOX
- CONDUIT FROM CONTROL PANEL TO VAULT TO BE CONCRETE ENCASED PVC CONDUIT. PROVIDE 4/0 INSULATED GROUND WIRE FROM VAULT REBAR (EXOTHERMIC WELDED) TO PCR UNIT AND SHALL BE NOT BE CONNECTED TO ANY OTHER GROUNDS/GRID UNTIL AFTER THE PCR UNIT.



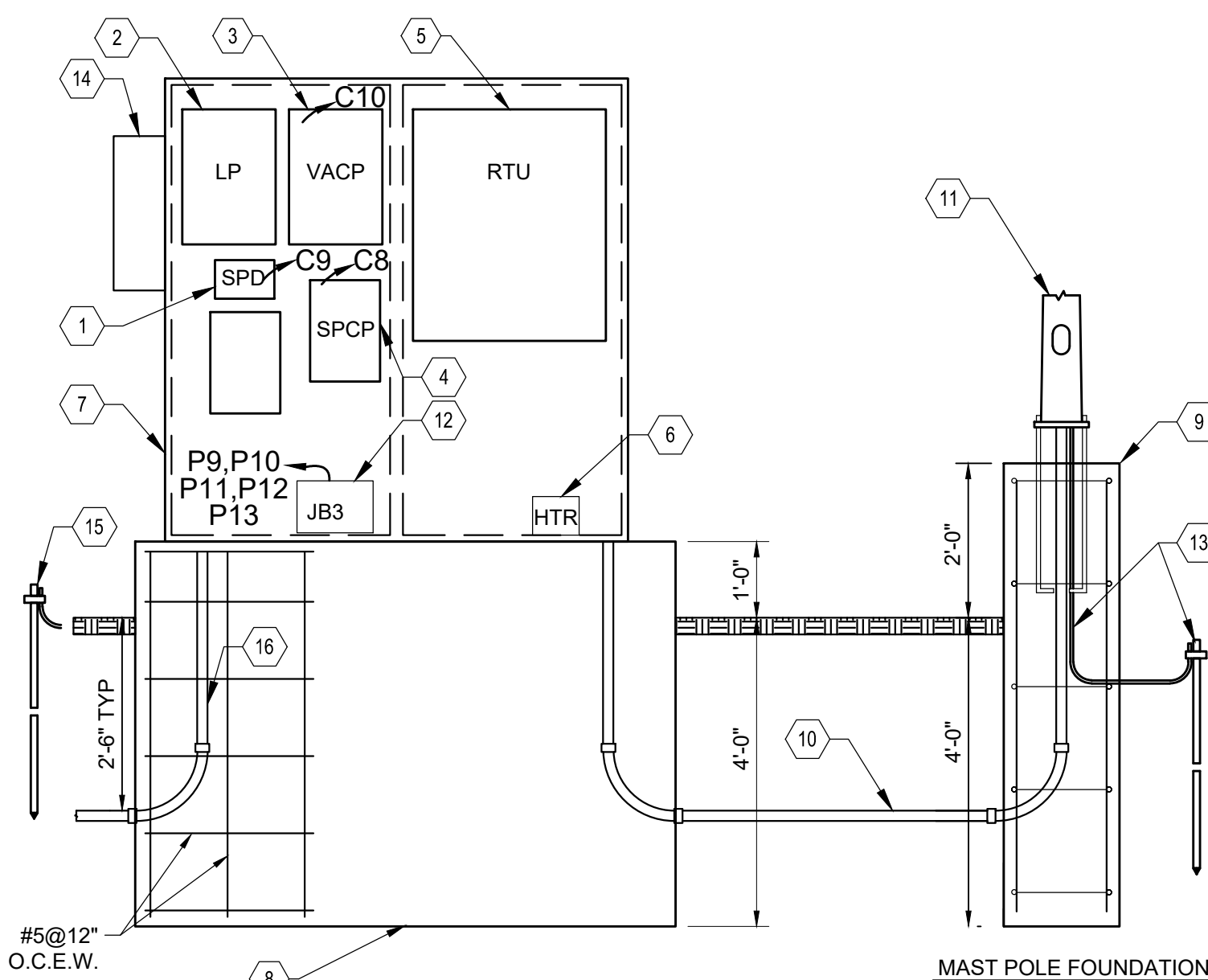
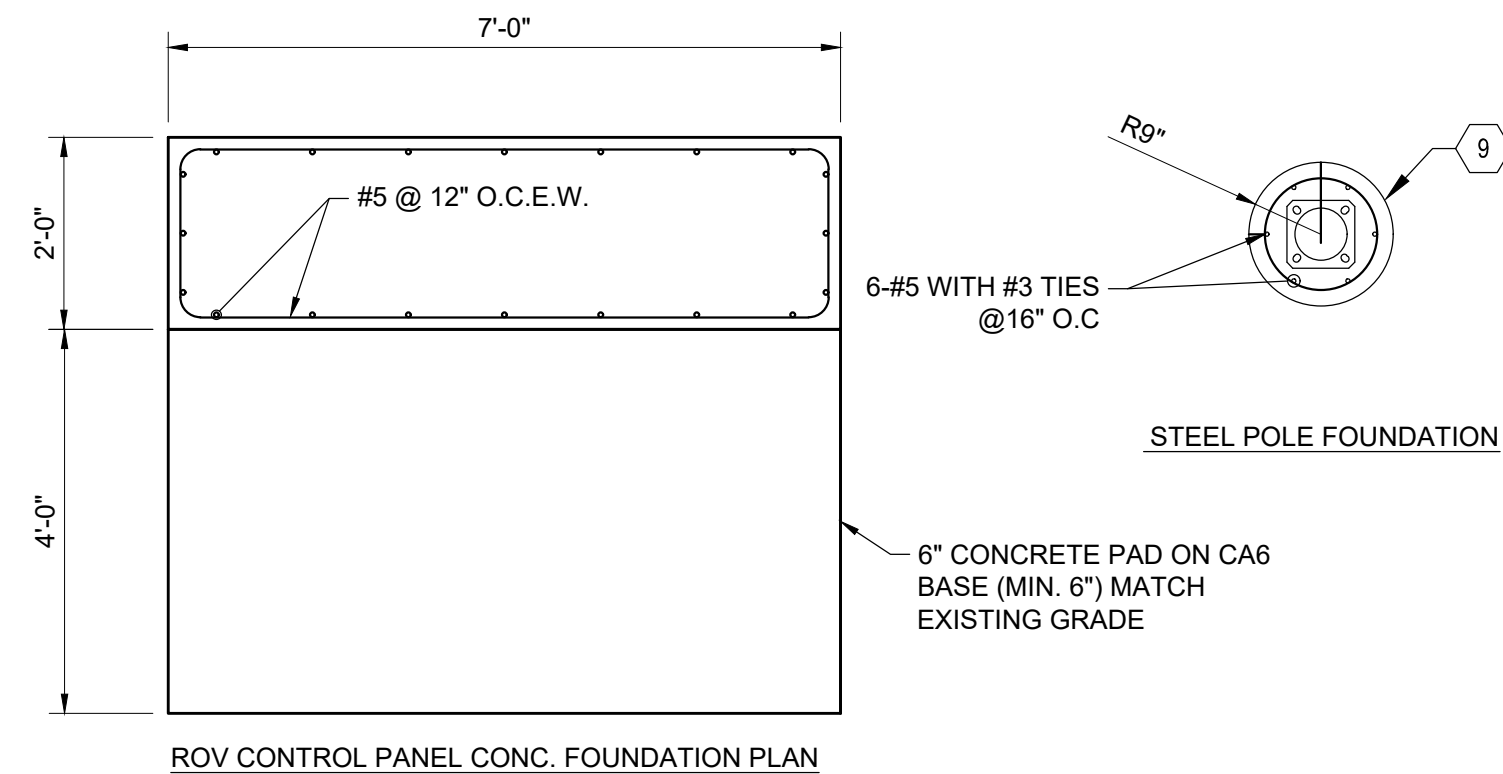
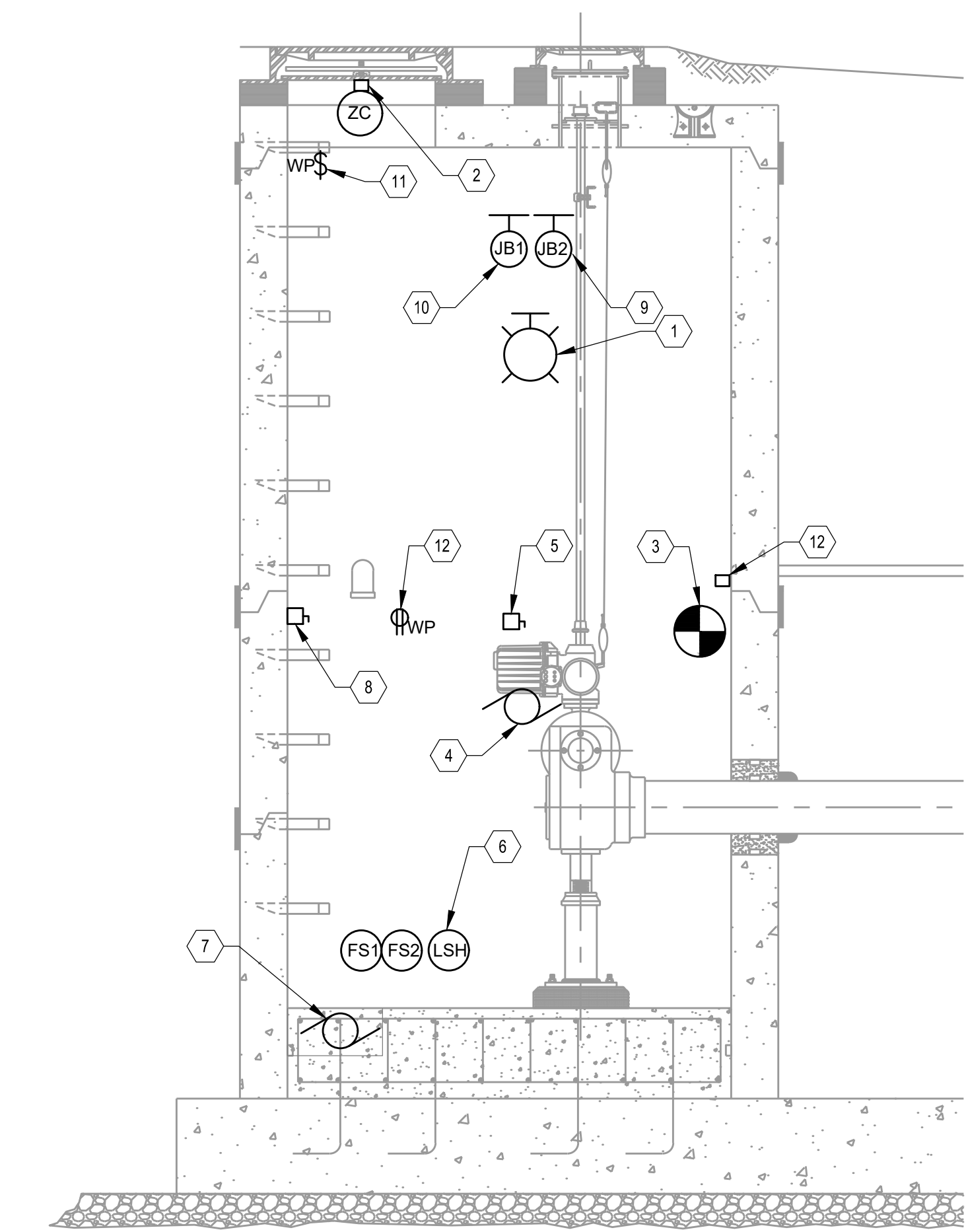
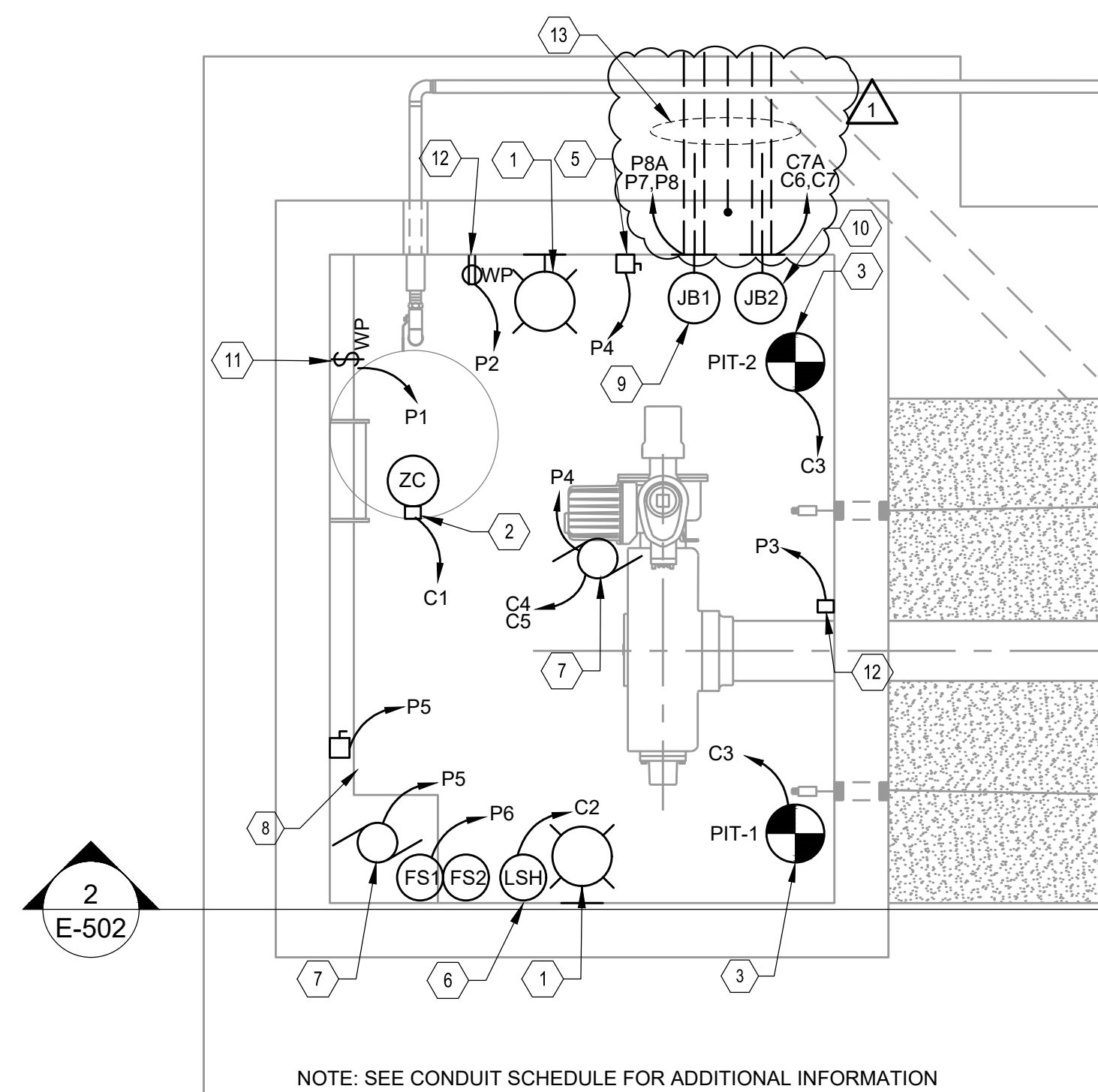
5 ROV LIGHTING PANEL
SCALE: NOT TO SCALE

MOY ROV I/O List (15G)		
Type	Tagname	Description
DI	EY-3157-CPS	RTU Power
DI	EY-3157-52	24V Power Supply 1
DI	EY-3157-56	24V Power Supply 2
DI	EY-3157-24	Surge Protection Device 24VDC
DI	J1-3157-UPS-ST5	UPS Ready
DI	J1-3157-UPS-BAT	UPS Battery Fault
DI	TS-3157-12	Panel High Temp
DI	TS-3157-24	Panel Low Temp
DI	ZS-3157-06	Cabinet Door Status
DI	EY-3157-SPD	Incoming Power SPD
DI	EY-3157-PM	Valve Phase Monitor
DI	EY-3157-VCP	Valve Control Power
DI	HSAR-3157-01	Valve in Remote
DI	ZSC-3157-01	Valve Close Status
DI	ZSO-3157-01	Valve Open Status
DI	LSH-3157-01	Sump Flood Status
DI	AUX1-3157-04	Sump Pump Run Status
DI	ESH-3157-21	Sump Pump Control Power
DI	ZC-3157-02	Vault Hatch Closed
DO	ZCC-3157-01	Valve Close
DO	ZCH-3157-01	Valve Hold
DO	ZCO-3157-01	Valve Open
AI	Z-3157-01	Valve Position
AI	P-3157-03	Pressure Transmitter 1
AI	P-3157-10	Pressure Transmitter 2

4 STA. 602+46.8 ROV RTU I/O LIST
SCALE: NOT TO SCALE

CONDUIT SCHEDULE				
CONDUIT NUMBER	FROM	TO	CONDUCTORS/RACEWAY	NOTES
P1	LIGHT SWITCH/LIGHTS	JB1	2#10, 1#12 GND IN 3/4"C	
P2	RECEPTACLE	JB1	2#10, 1#12 GND IN 3/4"C	
P3	HEAT TRACE (HT JB)	JB1	2#10, 1#12 GND IN 3/4"C	
P4	VALVE ACTUATOR & DISCONNECT	JB1	5#10, 2#12, 1#12 GND IN 3/4"C	2#12 FOR AUX. CONTACT
P5	SUMP PUMP & DISCONNECT	JB1	MANUFACTURE CABLE TO D.S. & 2#10, 1#12 GND IN 3/4"C	
P6	SUMP FLOATS	JB1	2- MANUFACTURE CABLE (4#14)	
P7	JB1	JB3	15#10, 2#12, 5#12 GND IN 1-1/4"C	2#12 FOR AUX. CONTACT
P8	JB1	JB3	24#14 IN 1"C	INCLUDES 4#14 SERVICE LOOP LABELED "SPARE"
P8A	JB1	JB3	3/4"C	SPARE CONDUIT
P9	JB3	VACP	5#10, 2#12, 1#12 GND IN 3/4"C	2#12 FOR AUX. CONTACT
P9	JB3	VACP	24#14 1"C	4#14 SPARE
P10	JB3	SPCP	2#10, 1#12 GND IN 3/4"C	
P11	JB3	LP	6#10, 3#12 GND IN 3/4"C	
P12	JB3	RTU	4#14 IN 3/4"C	INCLUDES 4#14 SERVICE LOOP LABELED "SPARE"
P13	JB3	SPCP	6#14 IN 3/4"C	
C1	ACCESS ALARM	JB2	2#14 IN 3/4"C	LIMIT SWITCH WITH 10' LEADS, PROVIDE WATERTIGHT SPLICE IN JB2
C2	HWL FLOAT (LSH)	JB2	MANUFACTURE CABLE (2#14)	
C3	PIT-1 & PIT-2	JB2	1-3/4"C AND 1-2/C#16 TSP FROM JB2 TO EACH PRESSURE TRANSDUCER	
C4	VALVE ACTUATOR	JB2	1-3/C#16 TSP IN 3/4"C	
C5	VALVE ACTUATOR	JB2	10#14 IN 3/4"C	INCLUDES 4#14 SERVICE LOOP LABELED "SPARE"
C6	JB2	RTU	3-2/C#16 TSP, 2-3/C#16 TSP IN 1"C	INCLUDES ONE SPARE 2/C#16 TSP, 1-3/C#16 TSP WITH SERVICE LOOP LABELED "SPARE" IN JB2
C7	JB2	RTU	10#14 IN 1"C	INCLUDES 4#14 SERVICE LOOP LABELED "SPARE"
C7A	JB2	JB3	3/4" C	SPARE CONDUIT
C8	SPCP	RTU	4#14 IN 3/4"C	
C9	SPD	RTU	2#14 IN 3/4"C	
C10	VACP	RTU	14#14 IN 1"C	4#14 SPARE

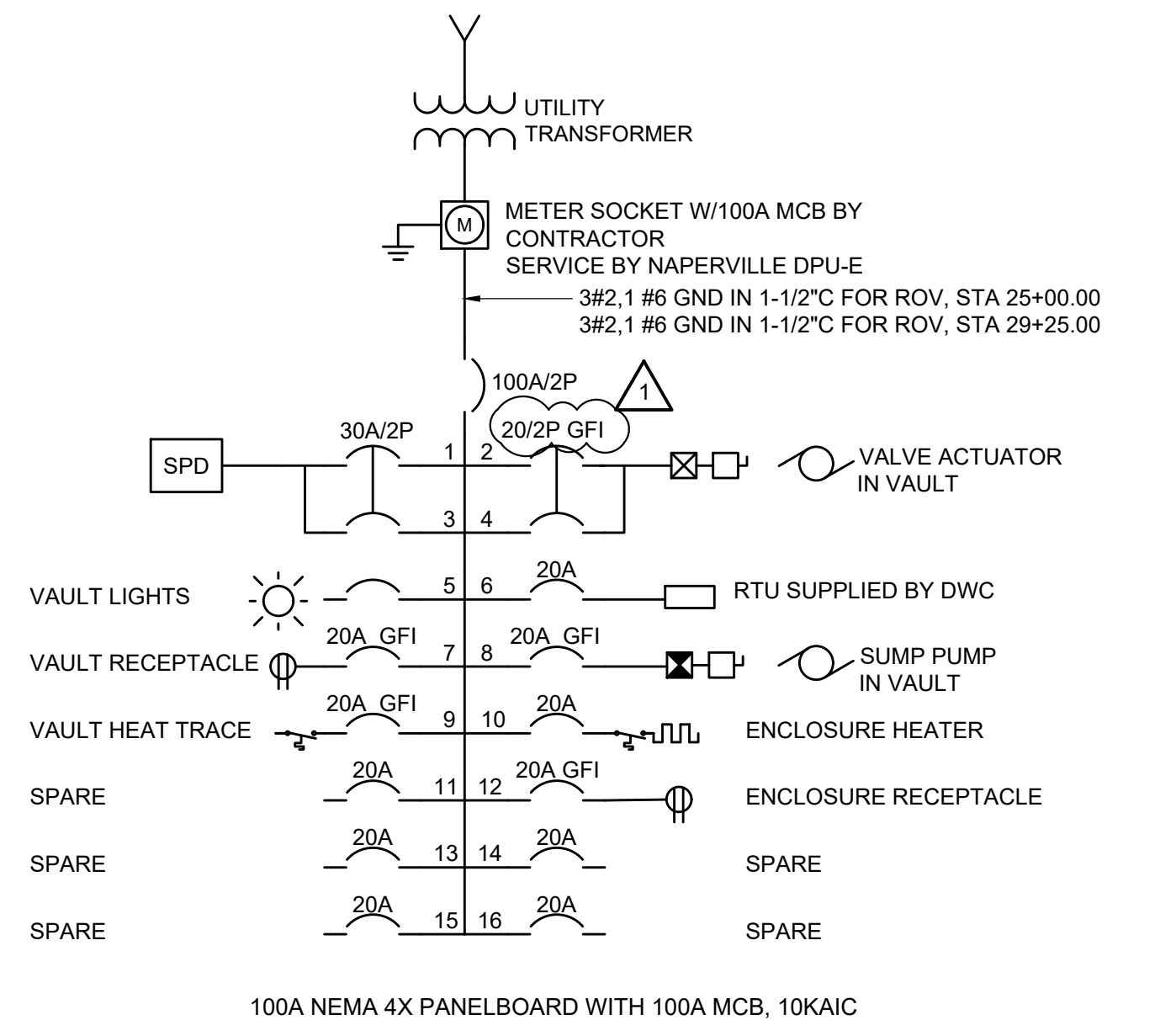
6 STA. 602+46.8 ROV CONDUIT SCHEDULE
SCALE: NOT TO SCALE



- DETAIL 1 & 2 KEYED NOTES:

1. CODE MASTER JR. CJLL2 120V X 4, LENS TAILORED TO FIXTURE (TYP OF 2)
2. LIMIT SWITCH FOR ENTRY ALARM, GO SWITCH MODEL 11-12128-B4, WITH 10' LEADS
3. PRESSURE TRANSDUCER ASSEMBLY. SEE ELECTRICAL DETAILS (TYP OF 2, FOR EACH SIDE OF VALVE) MOUNTED SIX FEET ABOVE FLOOR. PROVIDE BUNA-N $\frac{1}{2}$ " THICK INSULATION AND HEAT TAPE (RAYCHEM SELF-REGULATING, OR EQUAL) FOR SMALL PIPING IN THE VAULT.
4. LIMITORQUE L120-20 ELECTRIC ACTUATOR WITH REMOTE CONTROL PANEL IN ROV CONTROL PANEL ENCLOSURE. SEE SPECIFICATIONS 40 05 57 FOR ADDITIONAL INFORMATION
5. NEMA 4X, 6-POLE STAINLESS STEEL DISCONNECT SWITCH FOR ELECTRIC ACTUATOR WITH AUXILIARY CONTACT
6. HIGH LEVEL ALARM FLOAT SWITCH PIPE MOUNTED 6" ABOVE FLOOR. PUMP FLOAT SWITCHES FOR ON (FS1) AND OFF (FS2) LOCATED AT SUMP. ECO FLOAT GSE20NO FOR LSH, MINI FLOAT SWITCH SM20NO FOR FS1 AND FS2. FLOAT MOUNTING HARDWARE - GRAINGER #445J59
7. 1/2 HP EBARA MODEL EPD-5MS1 PUMP PUMP WITH ON AND OFF FLOATS CONTROLLED BY SUMP CONTROL PANEL IN ROV CONTROL PANEL ENCLOSURE
8. NEMA 4X STAINLESS STEEL DISCONNECT SWITCH FOR SUMP PUMP
9. NEMA 4X HINGED JUNCTION BOX JUNCTION FOR WIRING. PROVIDE SS METAL PARTITION BETWEEN DIFFERENT POWER TYPES. DO NOT RUN CONDUIT FROM BOTTOM OF PULL BOXES
10. NEMA 4X HINGED JUNCTION BOX FOR SIGNAL/CONTROL WIRING. PROVIDE SS METAL PARTITION BETWEEN DIFFERENT POWER TYPES. DO NOT RUN CONDUIT FROM BOTTOM OF PULL BOXES
11. NEMA 4X LIGHT SWITCH LOCATED NEAR VAULT ACCESS
12. HEAT TRACE JUNCTION BOX
13. CONDUIT FROM CONTROL PANEL TO VAULT TO BE CONCRETE ENCASED PVC CONDUIT. PROVIDE 4/0 INSULATED GROUND WIRE FROM VAULT REBAR (EXOOTHERMIC WELDED) TO PCR UNIT(AND SHALL BE NOT BE CONNECTED TO ANY OTHER GROUNDS/GRID UNTIL AFTER THE PCR UNIT.

CONDUIT SCHEDULE				
CONDUIT NUMBER	FROM	TO	CONDUCTORS/RACEWAY	NOTES
P1	LIGHT SWITCH/LIGHTS	JB1	2#10, 1#12 GND IN 3/4"C	
P2	RECEPTACLE	JB1	2#10, 1#12 GND IN 3/4"C	
P3	HEAT TRACE (HT JB)	JB1	2#10, 1#12 GND IN 3/4"C	
P4	VALVE ACTUATOR & DISCONNECT	JB1	5#10, 2#12, 1#12 GND IN 3/4"C	2#12 FOR AUX. CONTACT
P5	SUMP PUMP & DISCONNECT	JB1	MANUFACTURE CABLE TO D.S. & 2#10, 1#12 GND IN 3/4"C	
P6	SUMP FLOATS	JB1	2- MANUFACTURE CABLE (4#14)	
P7	JB1	JB3	15#10, 2#12, 5#12 GND IN 1-1/4"C	2#12 FOR AUX. CONTACT
P8	JB1	JB3	24#14 IN 1"C	INCLUDES 4#14 SERVICE LOOP LABELED "SPARE"
P8A	JB1	JB3	3/4"C	SPARE CONDUIT
P9	JB3	VACP	5#10, 2#12, 1#12 GND IN 3/4"C	2#12 FOR AUX. CONTACT
P9	JB3	VACP	24#14 1"C	4#14 SPARE
P10	JB3	SPCP	2#10, 1#12 GND IN 3/4"C	
P11	JB3	LP	6#10, 3#12 GND IN 3/4"C	
P12	JB3	RTU	4#14 IN 3/4"C	INCLUDES 4#14 SERVICE LOOP LABELED "SPARE"
P13	JB3	SPCP	6#14 IN 3/4"C	
C1	ACCESS ALARM	JB2	2#14 IN 3/4"C	LIMIT SWITCH WITH 10' LEADS, PROVIDE WATERTIGHT SPLICE IN JB2
C2	HWL FLOAT (LSH)	JB2	MANUFACTURE CABLE (2#14)	
C3	PIT-1 & PIT-2	JB2	1-2/C#16 TSP IN 3/4"C	1-3/4"C AND 1-2/C#16 TSP FROM JB2 TO EACH PRESSURE TRANSDUCER
C4	VALVE ACTUATOR	JB2	1-3/C#16 TSP IN 3/4"C	
C5	VALVE ACTUATOR	JB2	10#14 IN 3/4"C	INCLUDES 4#14 SERVICE LOOP LABELED "SPARE"
C6	JB2	RTU	3-2/C#16 TSP, 2-3/C#16 TSP IN 1"C	INCLUDES ONE SPARE 2/C#16 TSP, 1-3/C#16 TSP WITH SERVICE LOOP LABELED "SPARE" IN JB2
C7	JB2	RTU	10#14 IN 1"C	INCLUDES 4#14 SERVICE LOOP LABELED "SPARE"
C7A	JB2	JB3	3/4" C	SPARE CONDUIT
C8	SPCP	RTU	4#14 IN 3/4"C	
C9	SPD	RTU	2#14 IN 3/4"C	
C10	VACP	RTU	14#14 IN 1"C	4#14 SPARE



MOY ROV I/O List (15E)		
Type	Tagname	Description
DI	EY-3155-CPS	RTU Power
DI	EY-3155-52	24V Power Supply 1
DI	EY-3155-56	24V Power Supply 2
DI	EY-3155-24	Surge Protection Device 24VDC
DI	JI-3155-UPS-ST5	UPS Ready
DI	JI-3155-UPS-BAT	UPS Battery Fault
DI	TS-3155-12	Panel High Temp
DI	TS-3155-24	Panel Low Temp
DI	ZS-3155-06	Cabinet Door Status
DI	EY-3155-SPD	Incoming Power SPD
DI	EY-3155-PM	Valve Phase Monitor
DI	EY-3155-VCP	Valve Control Power
DI	HSAR-3155-01	Valve in Remote
DI	ZSC-3155-01	Valve Close Status
DI	ZSO-3155-01	Valve Open Status
DI	LSH-3155-01	Sump Flood Status
DI	AUX1-3155-04	Sump Pump Run Status
DI	ESH-3155-21	Sump Pump Control Power
DI	ZC-3155-02	Vault Hatch Closed
DO	ZCC-3155-01	Valve Close
DO	ZCH-3155-01	Valve Hold
DO	ZCO-3155-01	Valve Open
AI	Z-3155-01	Valve Position
AI	P-3155-03	Pressure Transmitter 1
AI	P-3155-10	Pressure Transmitter 2

MOY ROV I/O List (15F)		
Type	Tagname	Description
DI	EY-3156-CP5	RTU Power
DI	EY-3156-52	24V Power Supply 1
DI	EY-3156-56	24V Power Supply 2
DI	EY-3156-24	Surge Protection Device 24VDC
DI	JI-3156-UPS-ST5	UPS Ready
DI	JI-3156-UPS-BAT	UPS Battery Fault
DI	TS-3156-12	Panel High Temp
DI	TS-3156-24	Panel Low Temp
DI	ZS-3156-06	Cabinet Door Status
DI	EY-3156-SPD	Incoming Power SPD
DI	EY-3156-PM	Valve Phase Monitor
DI	EY-3156-VCP	Valve Control Power
DI	HSAR-3156-01	Valve in Remote
DI	ZSC-3156-01	Valve Close Status
DI	ZSO-3156-01	Valve Open Status
DI	LSH-3156-01	Sump Flood Status
DI	AUX1-3156-04	Sump Pump Run Status
DI	ESH-3156-21	Sump Pump Control Power
DI	ZC-3156-02	Vault Hatch Closed
DO	ZCC-3156-01	Valve Close
DO	ZCH-3156-01	Valve Hold
DO	ZCO-3156-01	Valve Open
AI	Z-3156-01	Valve Position
AI	P-3156-03	Pressure Transmitter 1
AI	P-3156-10	Pressure Transmitter 2

REV.	DATE	DESCRIPTION	BY	DATE = MAY 2025	DESIGNED — JPD
1	06/20/25	ADDENDUM NO. 3	JPD	SCALE = AS SHOWN	CHECKED — JWG
				SCALE =	DRAWN — DRS
				PROJECT NO = 128-10031-001	CHECKED — OG



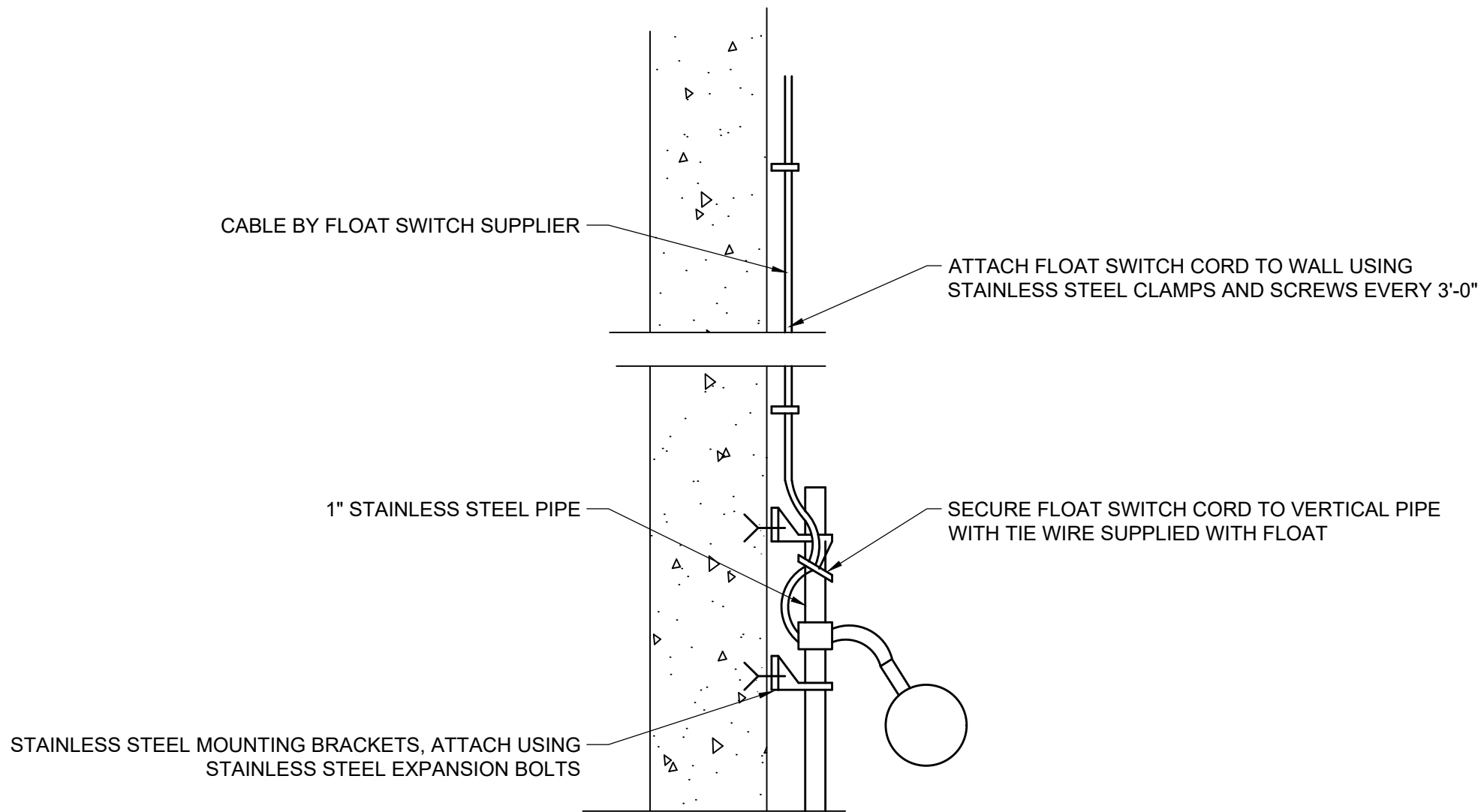
DUPAGE WATER COMMISSION
WATERLINK EXTENSION
CONTRACT TW-6/25 SECTION 1 WEST TRANSMISSION MAIN

ELECTRICAL
REMOTE OPERATED VALVE DETAILS
SHEET 2 OF 4

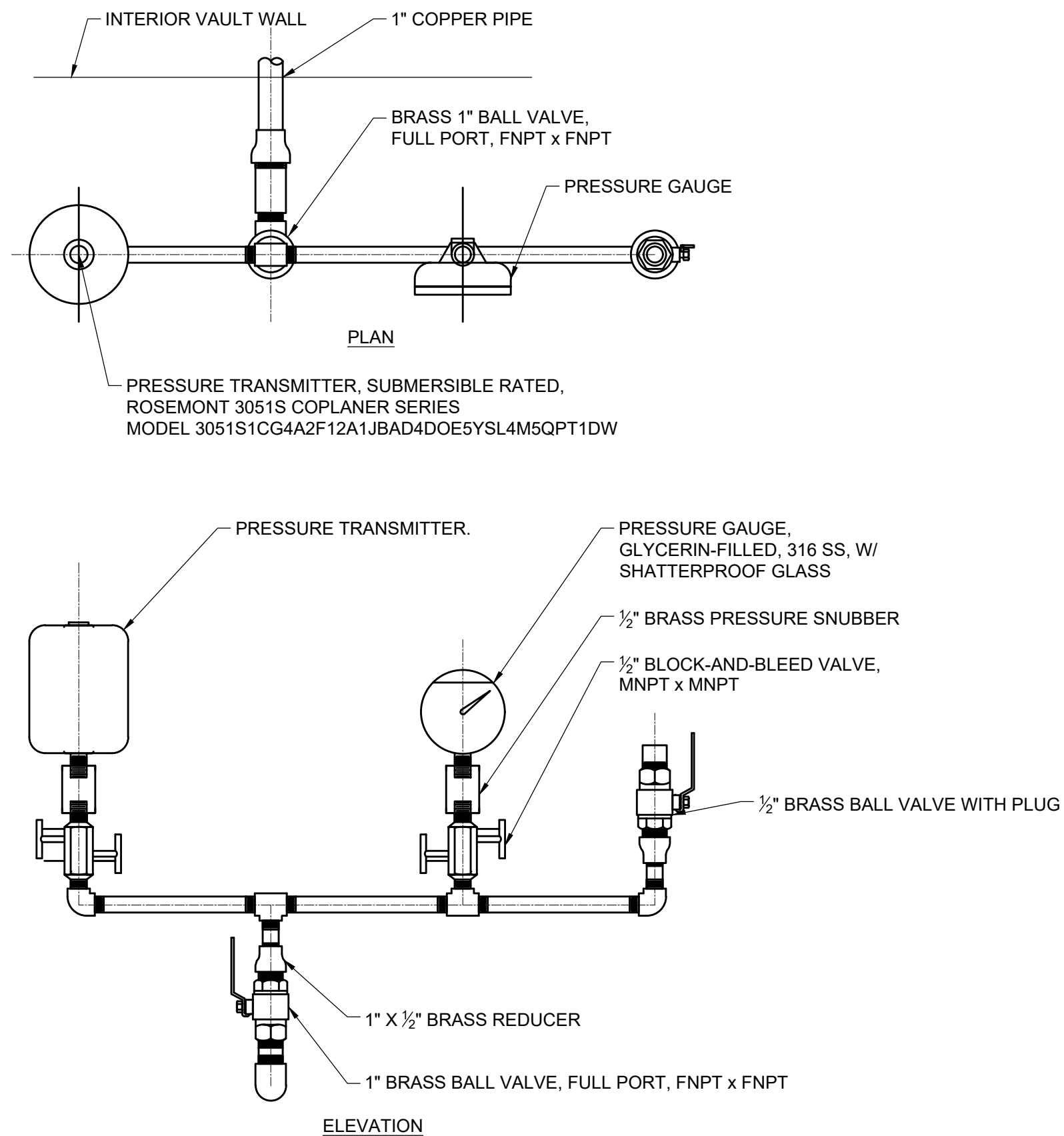


DRAWING NO. E-502	SHEET NO. 73 of 199

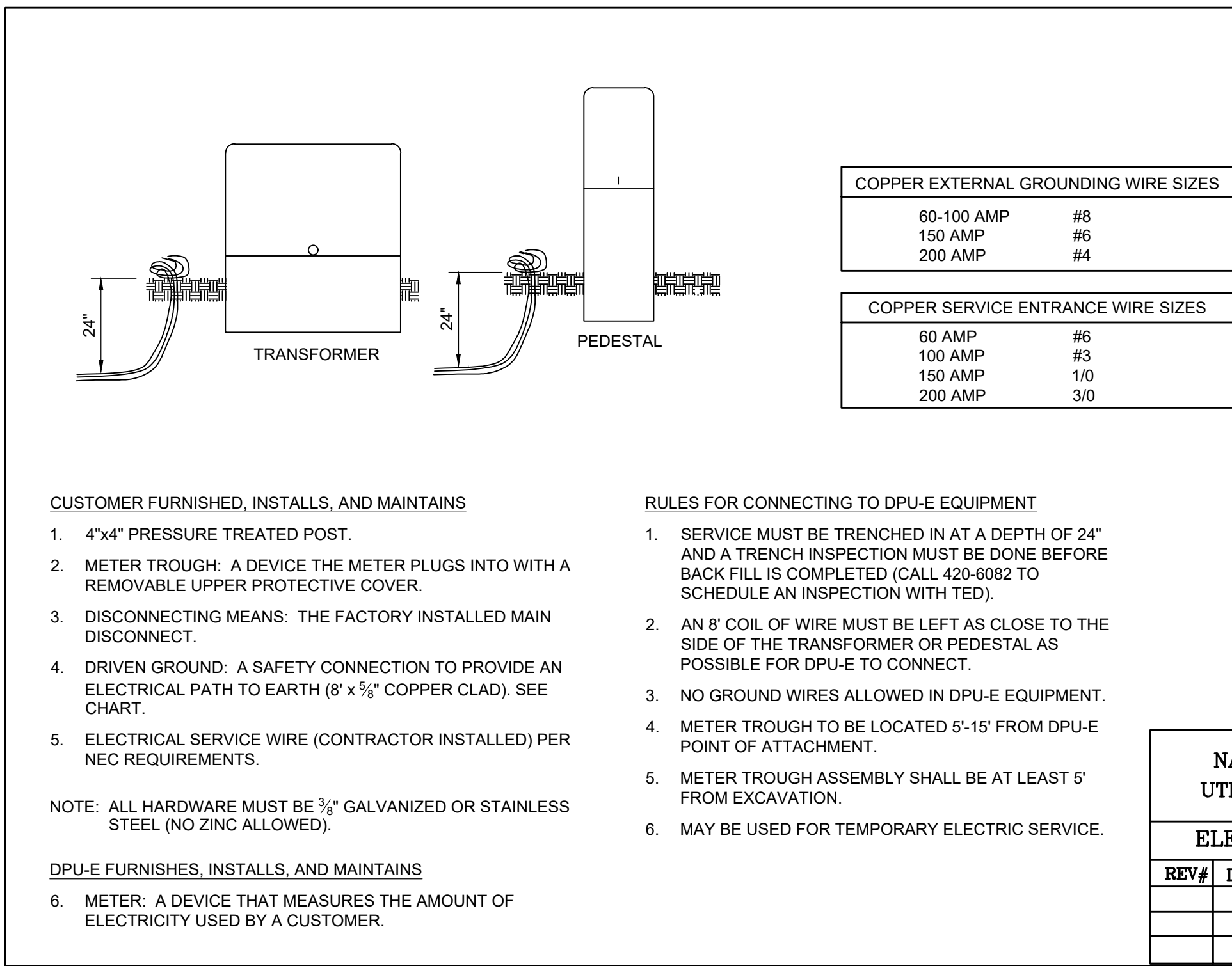
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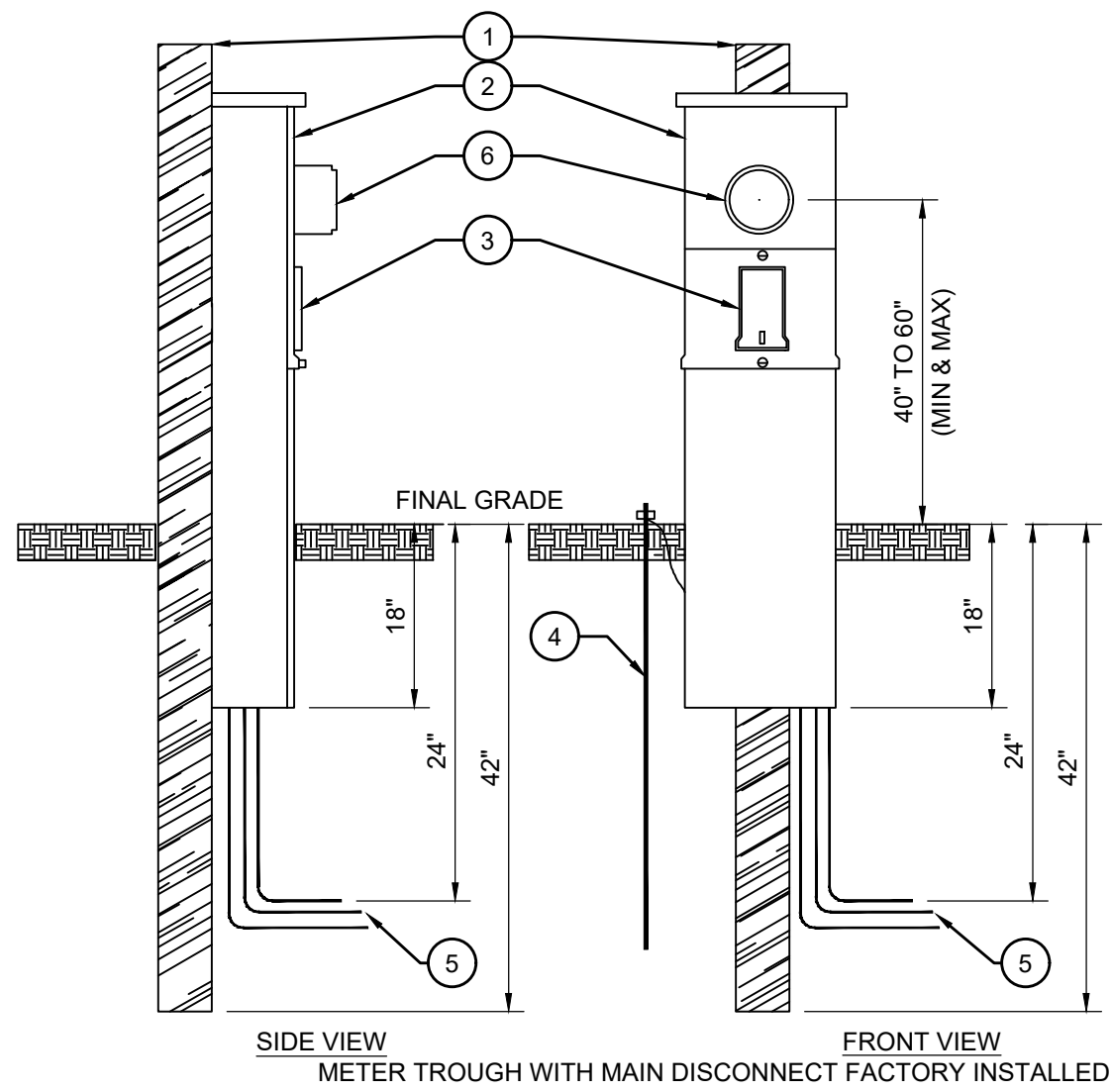
1 **FLOAT SWITCH DETAIL**
SCALE: NOT TO SCALE



2 **PRESSURE TRANSDUCER ASSEMBLY**
SCALE: NOT TO SCALE



3 **FREE STANDING METER**
SCALE: NOT TO SCALE



LEGEND

- INPUT TO RTU
- ⊗ OUTPUT FROM RTU
- TERMINAL IN MOTOR STARTER
- ⊠ TERMINAL IN VALVE OPERATOR
- * IN VALVE OPERATOR

NOTES:

- ALL DEVICES MOUNTED IN MOTOR STARTER UNLESS OTHERWISE NOTED. PANEL TO BE MOUNTED IN ROV CONTROL PANEL AS SHOWN ON DRAWING E-501
- CONFIRM CONTROLS AND CONNECTIONS WITH LIMITORQUE SUPPLIED EQUIPMENT
- PROVIDE UL 508A LABEL FOR NEMA 12 STARTER PANEL
- SEE SPECIFICATIONS SECTION 40 05 57, ELECTRIC VALVE ACTUATOR, FOR ADDITIONAL INFORMATION

4 **MOTORIZED VALVE OPERATOR CONTROL SCHEMATIC**
SCALE: NOT TO SCALE

REV.	DATE	DESCRIPTION	BY	DATE	DESIGNED	—	JPD
1	06/20/25	ADDENDUM NO. 3	JPD		CHECKED	—	JWG
					DRAWN	—	DRS
					CHECKED	—	OG



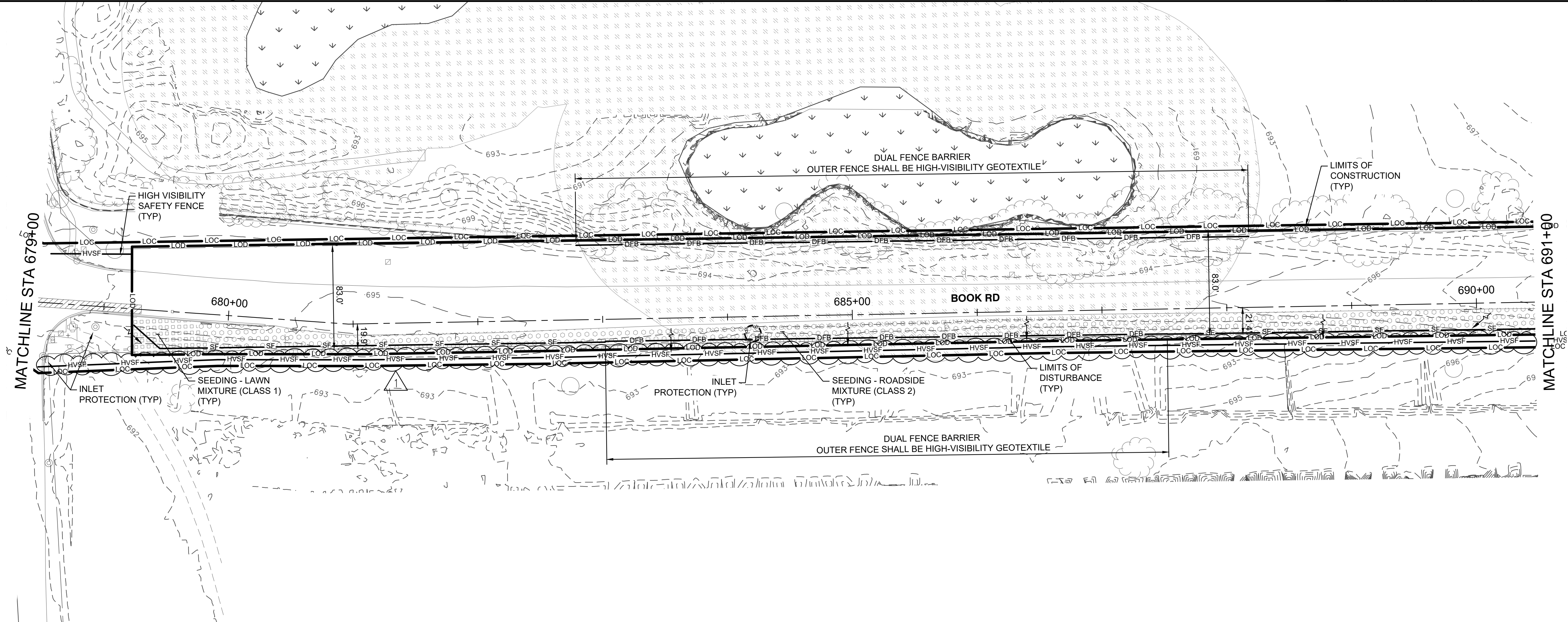
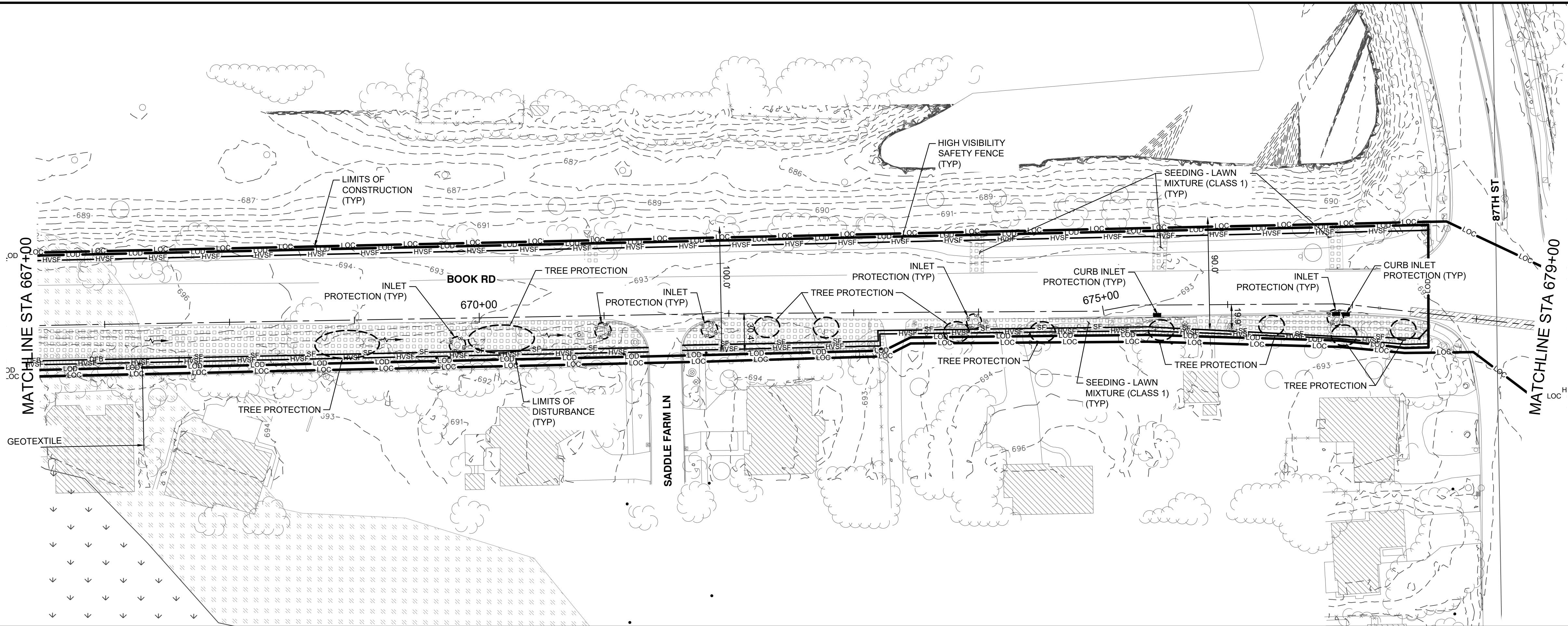
DUPAGE WATER COMMISSION
WATERLINK EXTENSION
CONTRACT TW-6/25 SECTION 1 WEST TRANSMISSION MAIN

ELECTRICAL
REMOTE OPERATED VALVE DETAILS
SHEET 3 OF 4



0	1	2
DRAWING NO.	E-503	SHEET NO.
		74 of 199

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LEGEND

- LOC LIMITS OF CONSTRUCTION
- LOD LIMITS OF DISTURBANCE
- HVSF HIGH VISIBILITY SAFETY FENCE
- SF SILT FENCE
- DFB DUAL SILT FENCE
- IP INLET PROTECTION
- DC DITCH CHECK
- CD CHECK DAM
- DF DIRECTION OF FLOW
- TP TREE PROTECTION
- SM SEEDING - LAWN MIXTURE CLASS 1)
- PSM PASTURE SEED MIX - COORDINATE WITH LAND OWNER
- SRM SEEDING - ROADSIDE MIXTURE CLASS 2)
- WETLANDS
- W100 WETLANDS 100' BUFFER
- F100 FLOODPLAIN 100 YEAR

NOTES:

- WHERE APPLICABLE, EXCAVATED AREAS SHALL BE BACKFILLED WITH NATIVE SOIL IN THE SAME STRATIFICATION IN WHICH THE SOIL WAS REMOVED.
- STORAGE OF EQUIPMENT AND CONSTRUCTION MATERIALS IS NOT PERMITTED WITHIN THE FLOODPLAIN.
- ANY WORK ADJACENT TO OR WITHIN THE SPRINGBROOK PRAIRIE INAI, SPRINGBROOK MARSH LAND AND WATER RESERVE, AND SPRINGBROOK PRAIRIE NATURE PRESERVE SHALL ABIDE BY SPECIAL REQUIREMENTS IN SPECIFICATION SECTION 01 45 33-13 SECTION 3.01 G.

REV.	DATE	DESCRIPTION	BY	DATE	DESIGNED	MC
1	06/29/25	ADDENDUM NO. 3	OH	MAY 2025		
				SCALE = 1"=50'	CHECKED	KD
				SCALE =	DRAWN	BH
				PROJECT NO = 128-10031-001	CHECKED	JM



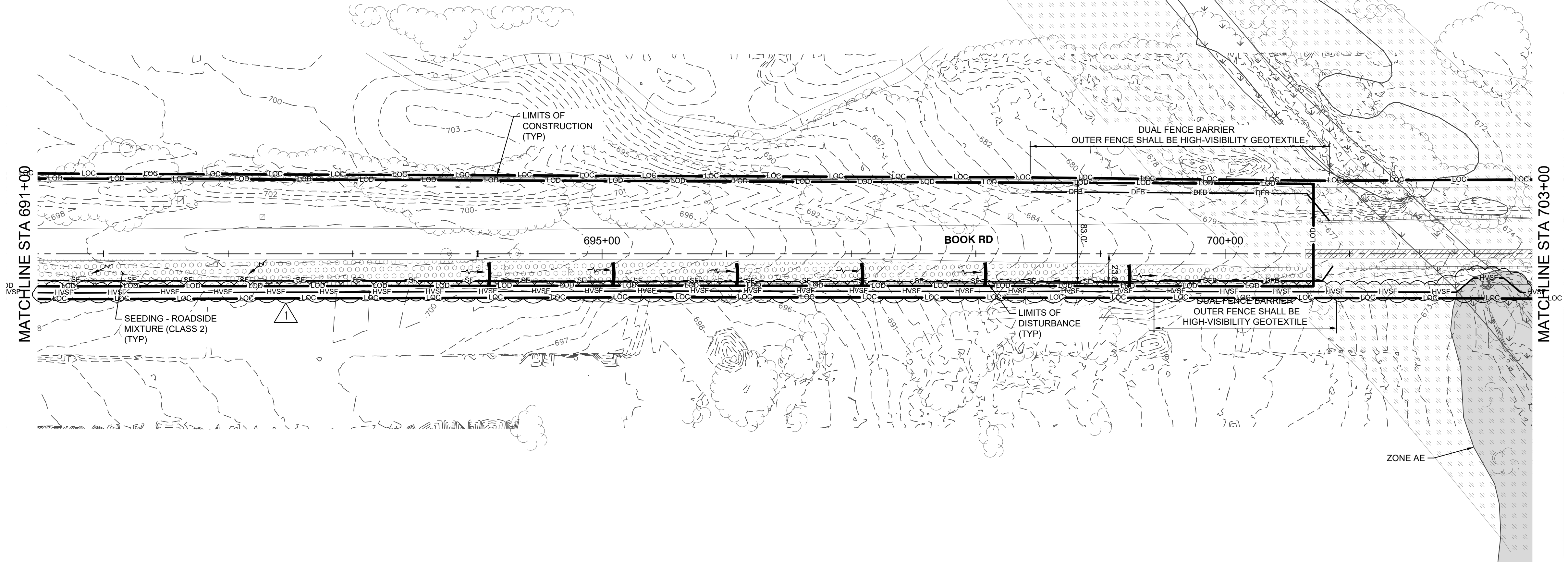
DUPAGE WATER COMMISSION
WATERLINK EXTENSION
CONTRACT TW-6/25 SECTION 1 WEST TRANSMISSION MAIN

EROSION CONTROL
BOOK ROAD
PLANS
SHEET 4 OF 7



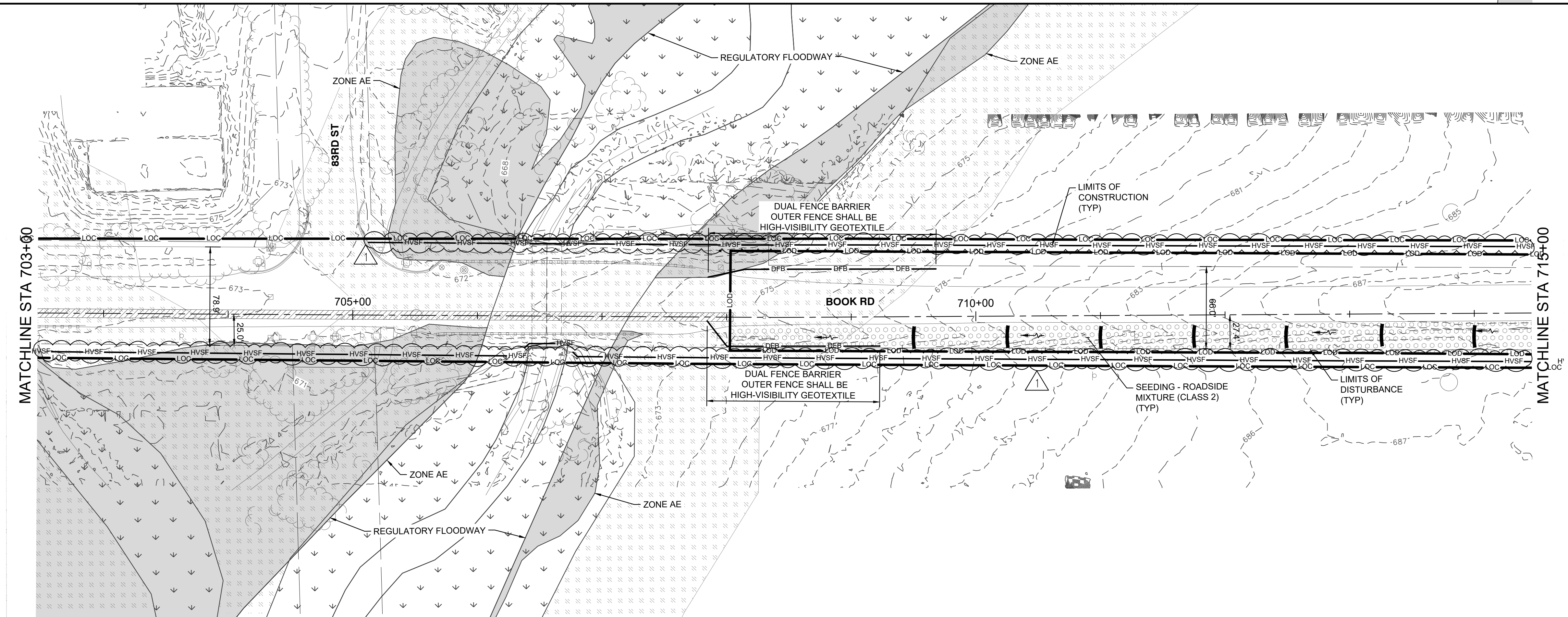
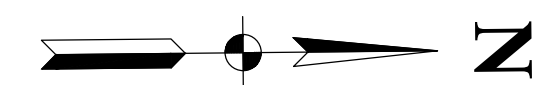
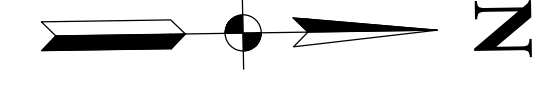
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DRAWING NO. EC-104	SHEET NO. 112 of 199

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LEGEND

- LOC LIMITS OF CONSTRUCTION
- LOD LIMITS OF DISTURBANCE
- HVSF HIGH VISIBILITY SAFETY FENCE
- SF SILT FENCE
- DFB DUAL SILT FENCE
- IP-IP-IP-IP-IP-IP INLET PROTECTION
- DC DITCH CHECK
- CD CHECK DAM
- DF DIRECTION OF FLOW
- TP TREE PROTECTION
- SEEDING - LAWN MIXTURE CLASS 1)
- PASTURE SEED MIX - COORDINATE WITH LAND OWNER
- SEEDING - ROADSIDE MIXTURE (CLASS 2)
- WETLANDS
- WETLANDS 100' BUFFER
- FLOODPLAIN 100 YEAR



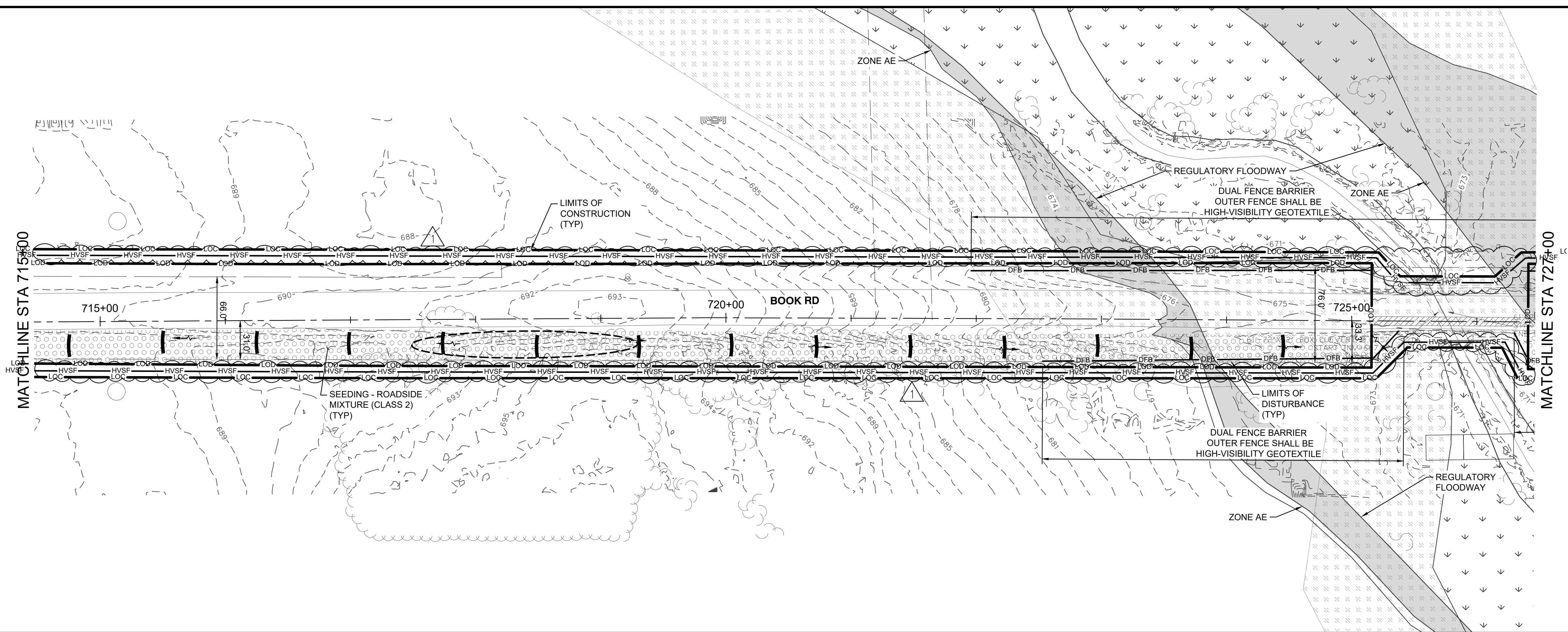
NOTES:

- WHERE APPLICABLE, EXCAVATED AREAS SHALL BE BACKFILLED WITH NATIVE SOIL IN THE SAME STRATIFICATION IN WHICH THE SOIL WAS REMOVED.
- STORAGE OF EQUIPMENT AND CONSTRUCTION MATERIALS IS NOT PERMITTED WITHIN THE FLOODPLAIN.
- ANY WORK ADJACENT TO OR WITHIN THE SPRINGBROOK PRAIRIE INAI, SPRINGBROOK MARSH LAND AND WATER RESERVE, AND SPRINGBROOK PRAIRIE NATURE PRESERVE SHALL ABIDE BY SPECIAL REQUIREMENTS IN SPECIFICATION SECTION 01 45 33-13 SECTION 3.01 G.

REV.	DATE	DESCRIPTION	BY	DATE	DESIGNED	MC
1	06/29/25	ADDENDUM NO. 3	OH	MAY 2025	CHECKED	KD
				SCALE = 1"=50'	DRAWN	BH
				PROJECT NO = 128-10031-001	CHECKED	JM

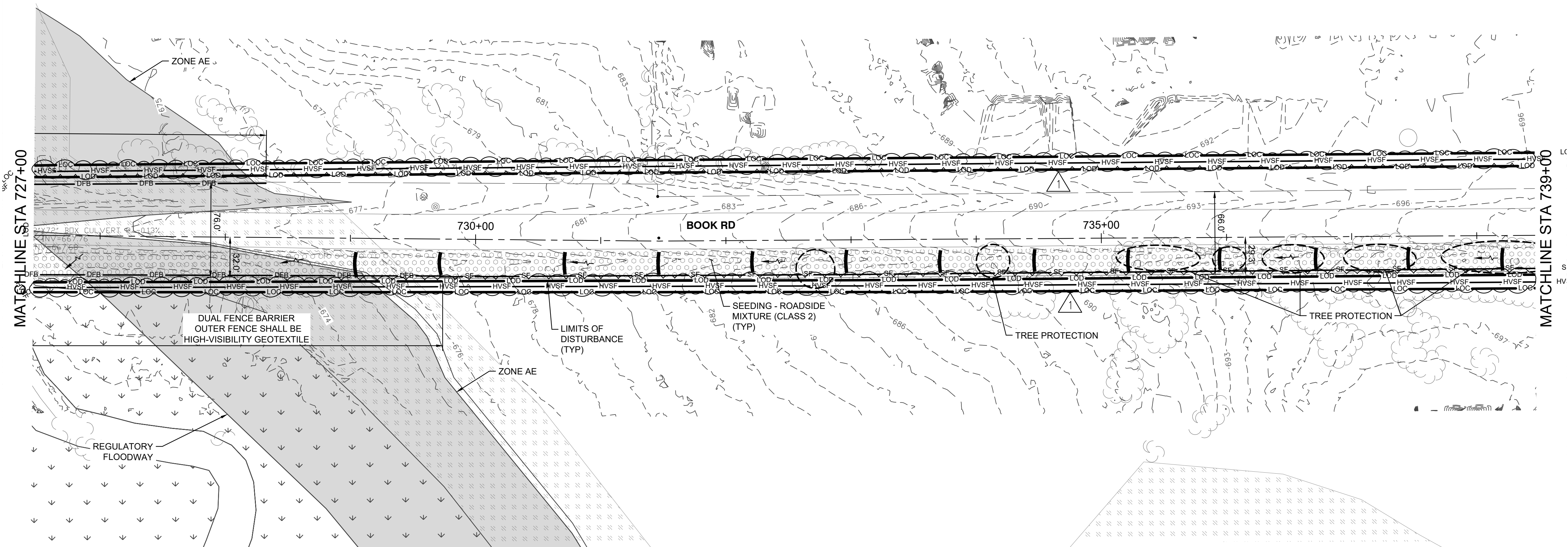
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LEGEND

- LOC LIMITS OF CONSTRUCTION
- LOD LIMITS OF DISTURBANCE
- HVSF HIGH VISIBILITY SAFETY FENCE
- SF SILT FENCE
- DFB DUAL SILT FENCE
- IP INLET PROTECTION
- DC DITCH CHECK
- CHECK DAM
- DIRECTION OF FLOW
- TREE PROTECTION
- SEEDING - LAWN MIXTURE (CLASS 1)
- PASTURE SEED MIX - COORDINATE WITH LAND OWNER
- SEEDING - ROADSIDE MIXTURE (CLASS 2)
- WETLANDS
- WETLANDS 100' BUFFER
- FLOODPLAIN 100 YEAR



NOTES:

- WHERE APPLICABLE, EXCAVATED AREAS SHALL BE BACKFILLED WITH NATIVE SOIL IN THE SAME STRATIFICATION IN WHICH THE SOIL WAS REMOVED.
- STORAGE OF EQUIPMENT AND CONSTRUCTION MATERIALS IS NOT PERMITTED WITHIN THE FLOODPLAIN.
- TREES WITHIN LOC FROM STA 717+00 TO 723+00 AND STA 735+00 TO 745+00 ARE POTENTIAL ENDANGERED BAT HABITAT. NO CLEARING MAY TAKE PLACE WITHOUT COORDINATION WITH OWNER AND IDNR/USFWS.
- ANY WORK ADJACENT TO OR WITHIN THE SPRINGBROOK PRAIRIE INAI, SPRINGBROOK MARSH LAND AND WATER RESERVE, AND SPRINGBROOK PRAIRIE NATURE PRESERVE SHALL ABIDE BY SPECIAL REQUIREMENTS IN SPECIFICATION SECTION 01 45 33-13 SECTION 3.01 G.

REV.	DATE	DESCRIPTION	BY	DATE	DESIGNED	MC
1	06/29/25	ADDENDUM NO. 3	OH	MAY 2025	CHECKED	KD
				SCALE = 1"=50'	DRAWN	BH
				PROJECT NO = 128-10031-001	CHECKED	JM



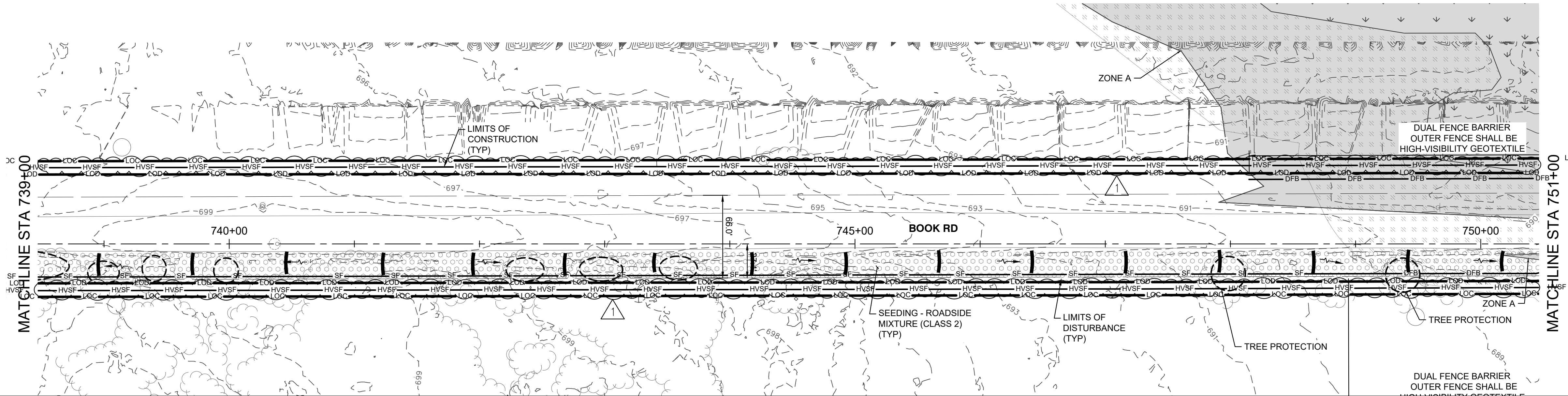
DUPAGE WATER COMMISSION
WATERLINK EXTENSION
CONTRACT TW-6/25 SECTION 1 WEST TRANSMISSION MAIN

EROSION CONTROL
BOOK ROAD
PLANS
SHEET 6 OF 7



0 50 100	
DRAWING NO. EC-106	SHEET NO. 114 of 199

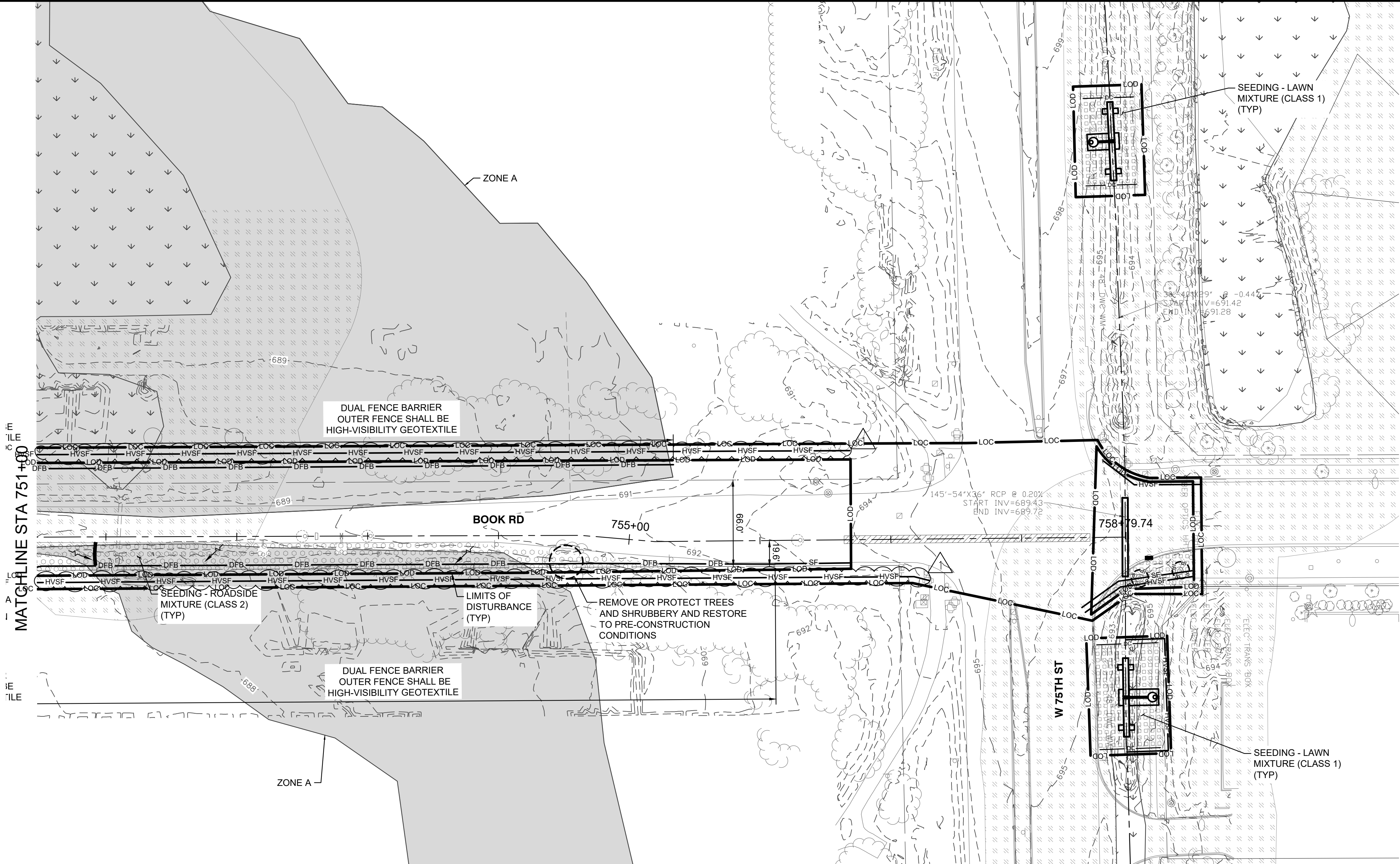
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LEGEND

- LOC LIMITS OF CONSTRUCTION
- LOD LIMITS OF DISTURBANCE
- HVSF HIGH VISIBILITY SAFETY FENCE
- SF SILT FENCE
- DFB DUAL SILT FENCE
- IP-IP-IP-IP-IP-IP INLET PROTECTION
- DC DITCH CHECK
- CHECK DAM
- DIRECTION OF FLOW
- TREE PROTECTION

- SEEDING - LAWN MIXTURE CLASS 1)
- PASTURE SEED MIX - COORDINATE WITH LAND OWNER
- SEEDING - ROADSIDE MIXTURE (CLASS 2)
- WETLANDS
- WETLANDS 100' BUFFER
- FLOODPLAIN 100 YEAR



NOTES:

- WHERE APPLICABLE, EXCAVATED AREAS SHALL BE BACKFILLED WITH NATIVE SOIL IN THE SAME STRATIFICATION IN WHICH THE SOIL WAS REMOVED.
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REV.	DATE	DESCRIPTION	BY	DATE	DESIGNED	MC
1	06/29/25	ADDENDUM NO. 3	OH	SCALE = 1"=50'	CHECKED	KD
				SCALE =	DRAWN	BH
				PROJECT NO = 128-10031-001	CHECKED	JM



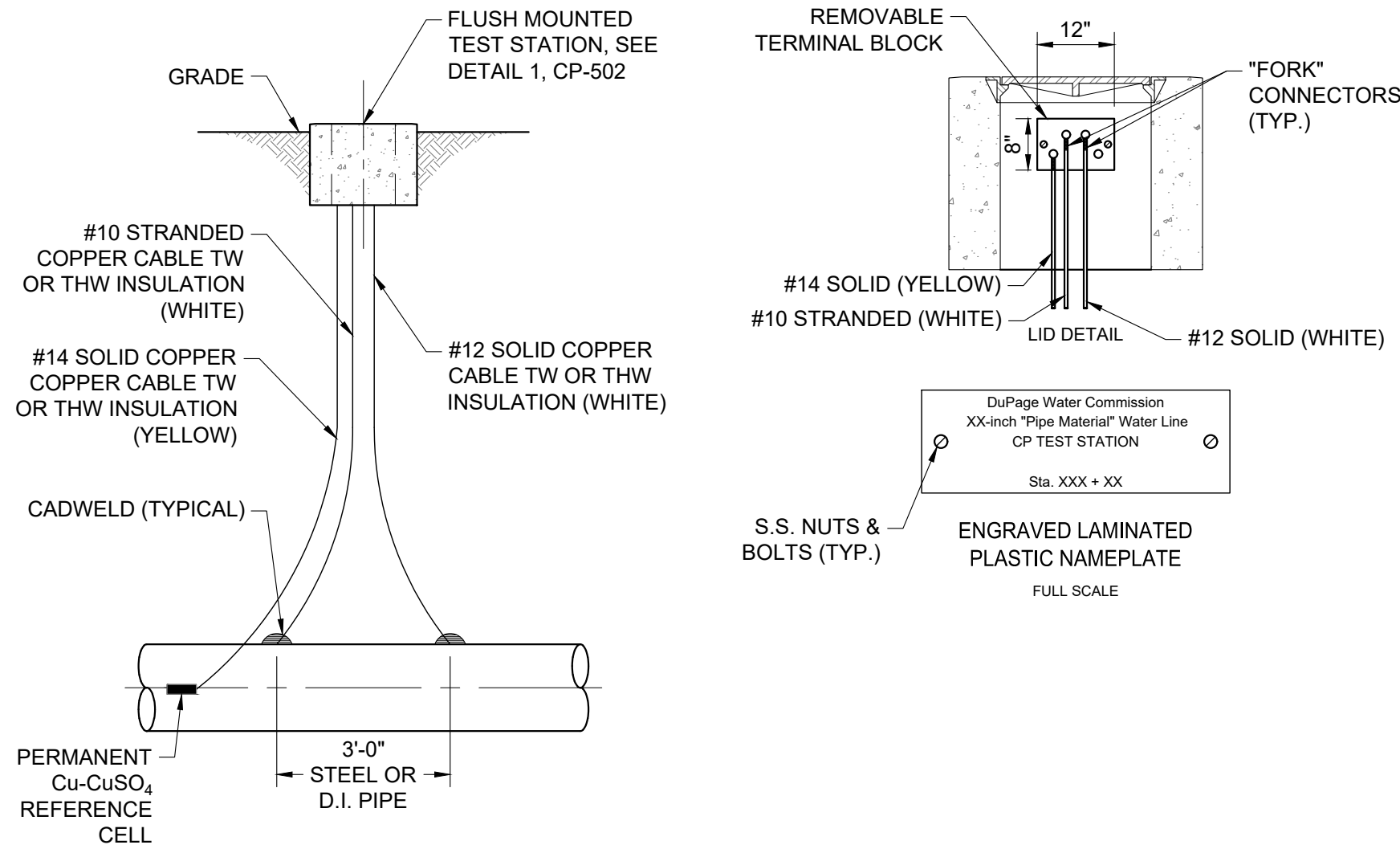
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WATERLINK EXTENSION
CONTRACT TW-6/25 SECTION 1 WEST TRANSMISSION MAIN

EROSION CONTROL
BOOK ROAD
PLANS
SHEET 7 OF 7



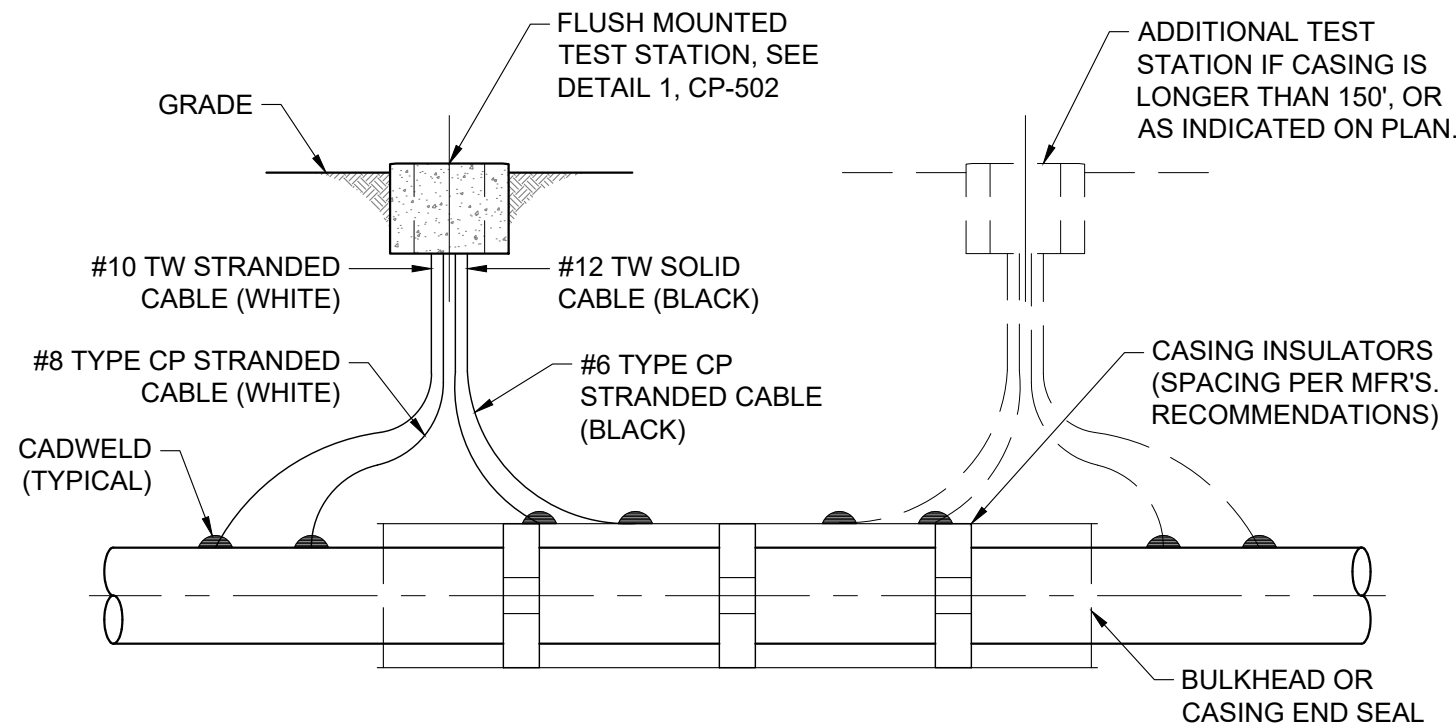
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DRAWING NO. EC-107	SHEET NO. 115 of 199

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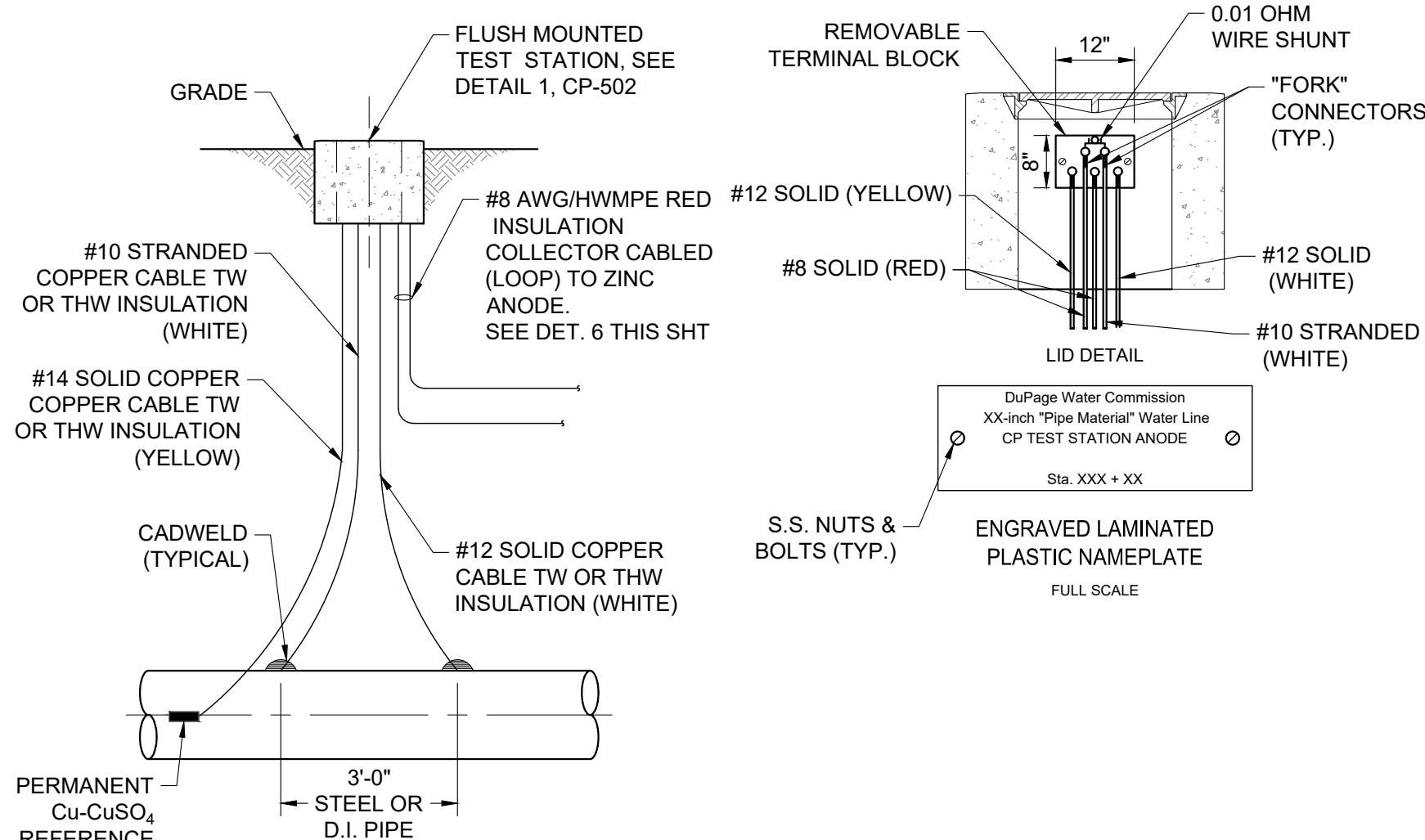
NOTE:
1. FOR CONCRETE PIPE, THE CADWELD CONNECTIONS MUST BE LOCATED AT THE JOINT ELECTRICAL BONDS.

1 CP-1 - FLUSH MOUNTED POTENTIAL TEST STATION
SCALE: N.T.S.



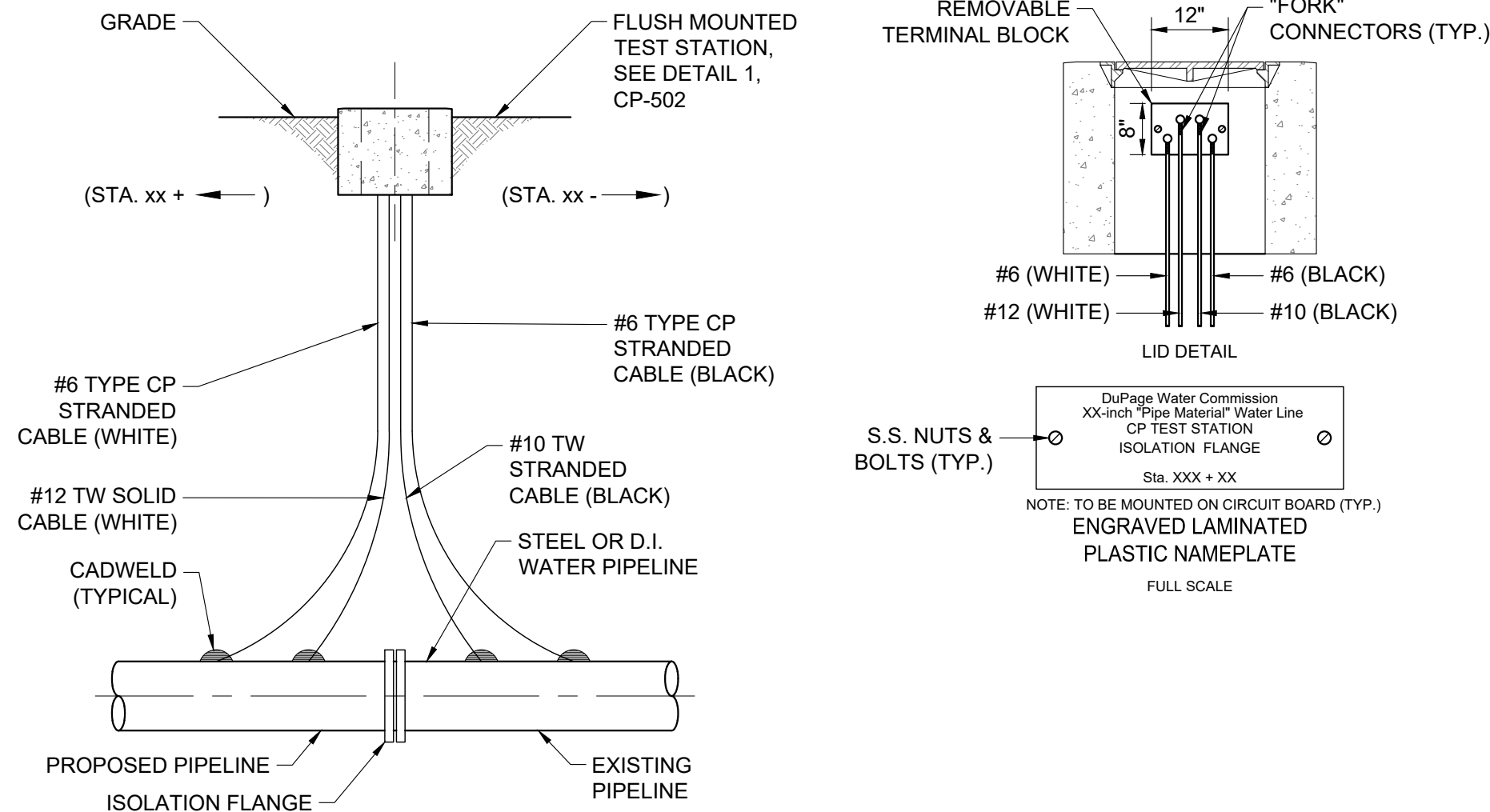
NOTE:
1. CADWELD CONNECTION ON CONCRETE PIPE MUST BE MADE AT THE JOINT ELECTRICAL BONDS.

3 CP-3 - FLUSH MOUNTED CASING TEST STATION
SCALE: N.T.S.



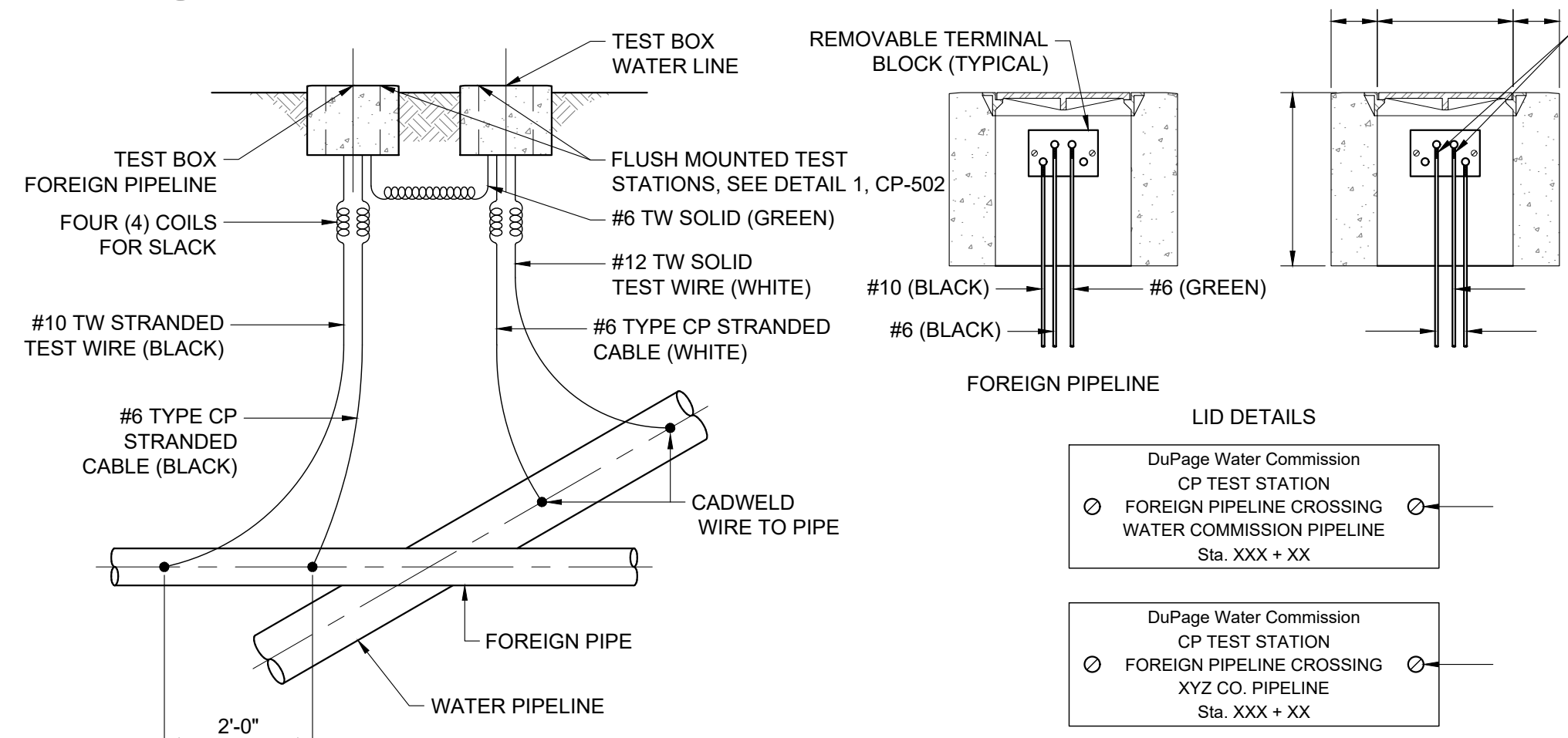
NOTE:
1. FOR CONCRETE PIPE, THE CADWELD CONNECTIONS MUST BE LOCATED AT THE JOINT ELECTRICAL BONDS.

5 CP-5 - FLUSH MOUNTED ANODE TEST STATION
SCALE: N.T.S.



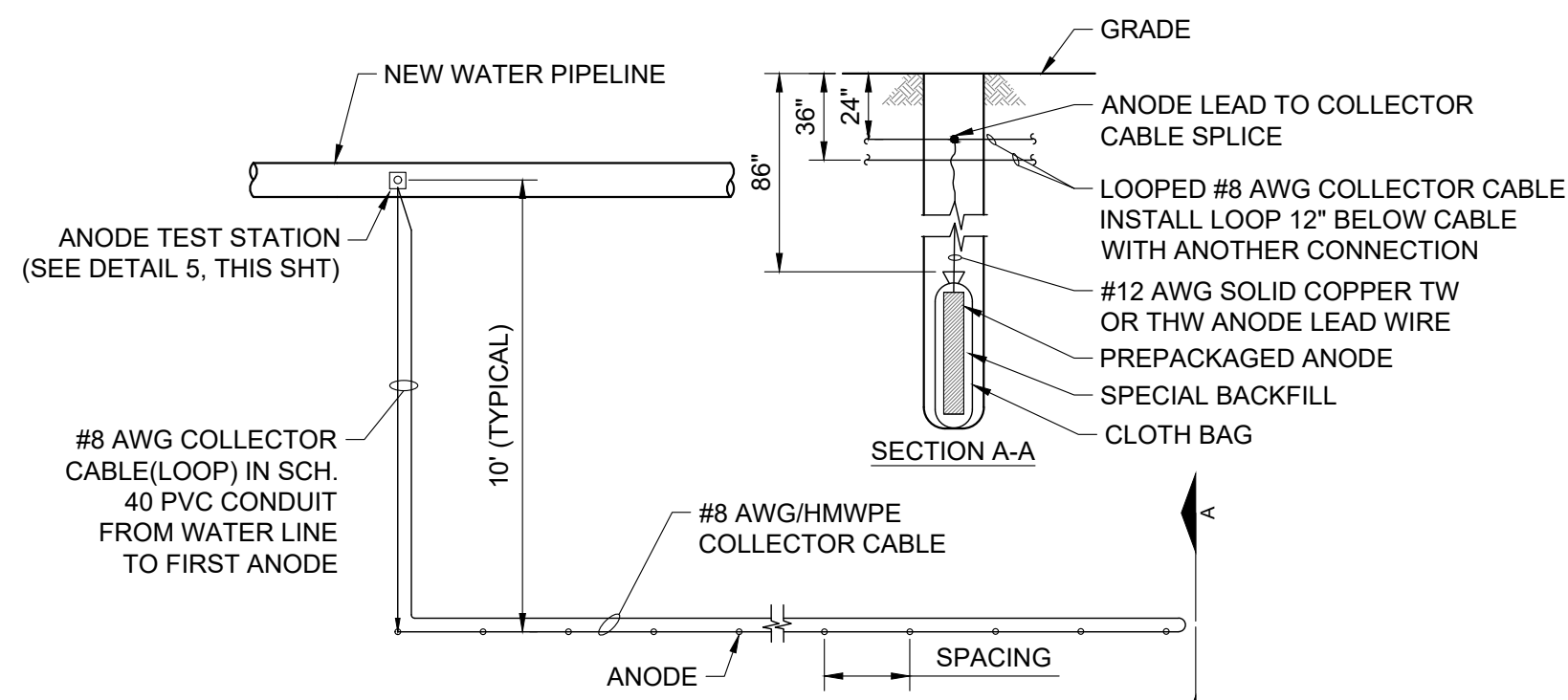
NOTE:
1. FOR CONCRETE PIPE, THE CADWELD CONNECTIONS MUST BE LOCATED AT THE JOINT BONDS OR ON THE FLANGE PROPER.

2 CP-2 - FLUSH MOUNTED ISOLATION TEST STATION
SCALE: N.T.S.



NOTE:
1. FOREIGN PIPELINE COMPANY MAY INSTALL TEST LEADS ON THEIR PIPING AND MAY REQUIRE A NON STANDARD TEST STATION. LEADS ATTACHED TO CONCRETE PIPE MUST BE CADWELDED AT ELECTRICAL JOINT BOND.

4 CP-4 - FOREIGN PIPELINE CROSSING TEST STATION
SCALE: N.T.S.



NOTE:
1. FOR ANODE SIZE AND SPACING REQUIREMENT, SEE 'DESIGN SUMMARY' SCHEDULE

6 ANODE TEST STATION PLAN
SCALE: N.T.S.

REV.	DATE	DESCRIPTION	BY	DATE	DESIGNED	GRS
1	06/29/25	ADDENDUM NO. 3	BM	MAY 2025	CHECKED	BM
				AS-SHOWN	DRAWN	GRS
				PROJECT NO = 128-10031-001	CHECKED	JW

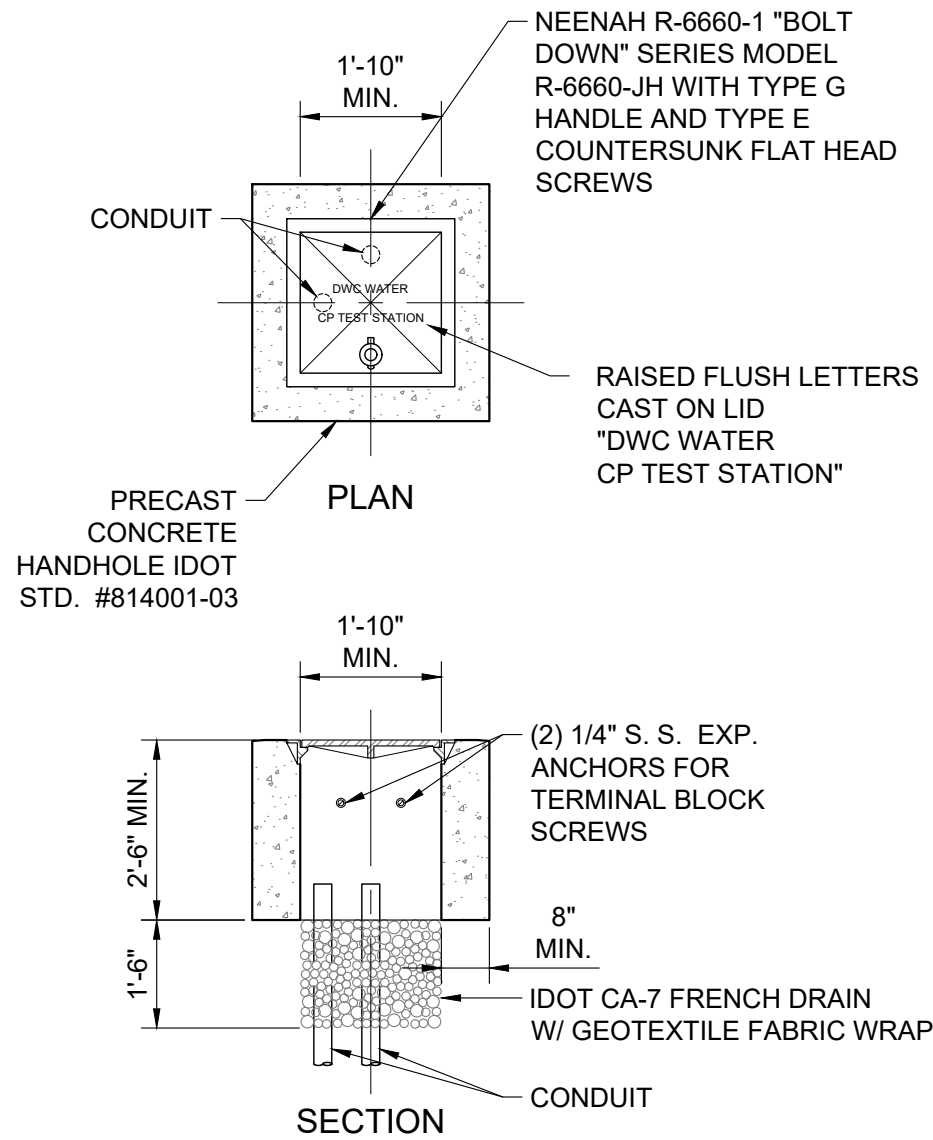


DUPAGE WATER COMMISSION
WATERLINK EXTENSION
CONTRACT TW-6/25 SECTION 1 WEST TRANSMISSION MAIN

CATHODIC PROTECTION
DETAILS
SHEET 1 OF 3



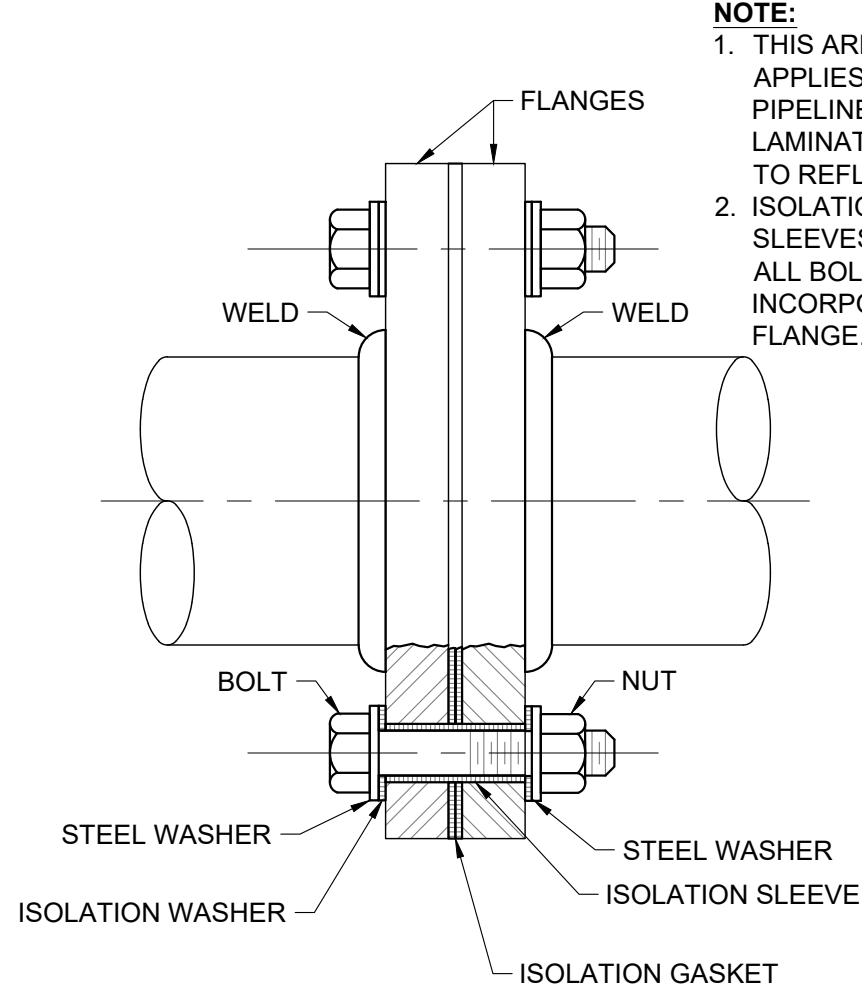




NOTE
1. ANY TEST STATION BOX LOCATED OVER 25 FT FROM PIPE CONNECTION SHOULD ENCASE CP STRANDED CABLES IN 2" PVC CONDUIT FOR UNDERGROUND ELECTRICAL SERVICES

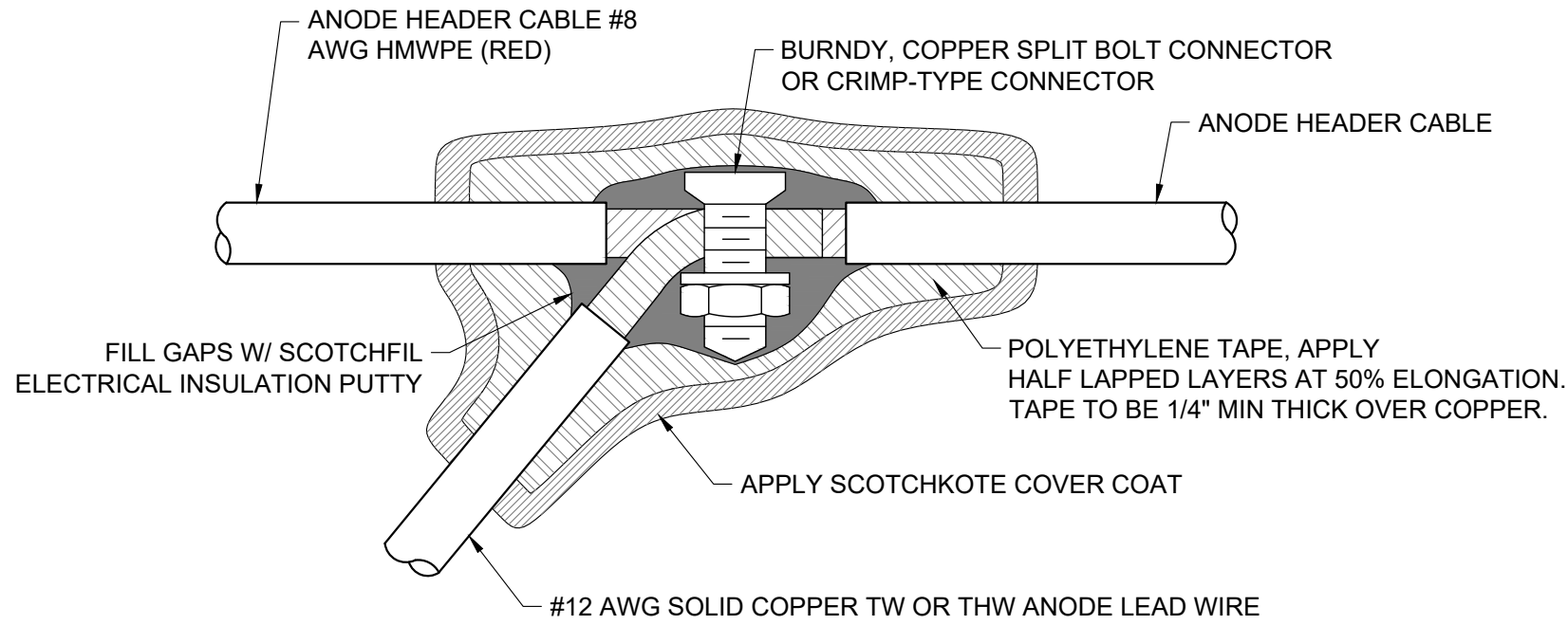
1 FLUSH MOUNTED TEST STATION HANDHOLE

SCALE: N.T.S.



2 PIPE ISOLATION FLANGE

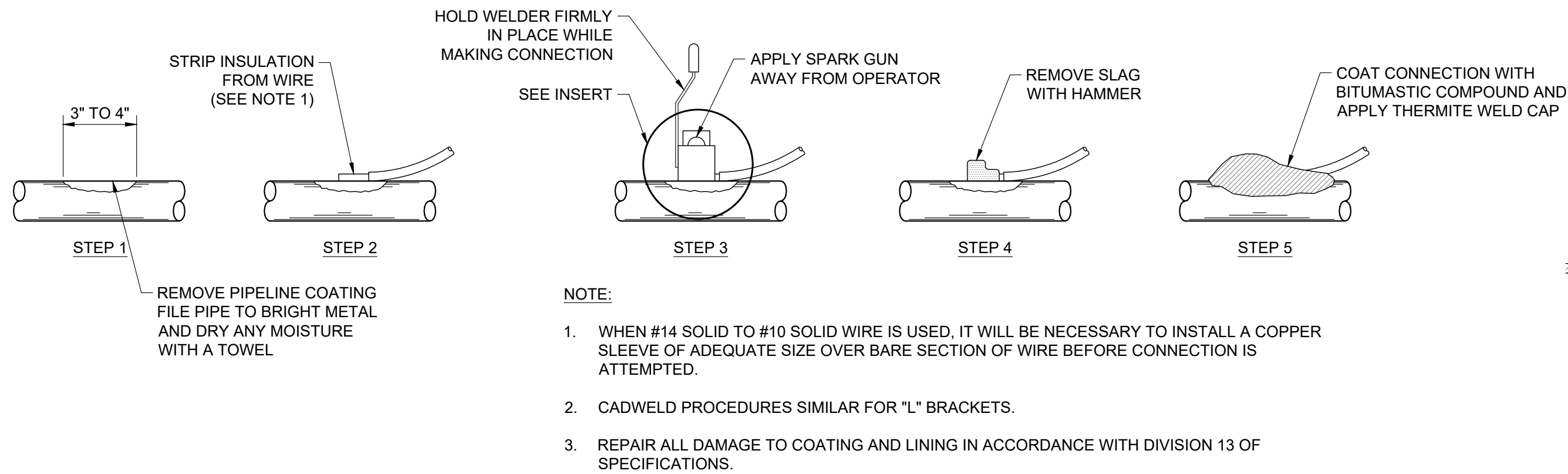
SCALE: N.T.S.



NOTES:
1. MAKE SPLICE WATERPROOF
A. SMOOTH ALL IRREGULAR SURFACES WITH ELECTRICAL INSULATION PUTTY.
B. APPLY 2 LAYERS OF HALF LAPPED RUBBER SPLICING TAPE.
C. APPLY 2 LAYERS OF HALF LAPPED VINYL ELECTRICAL TAPE.
2. NUMBER OF WIRES MAY VARY PER SPLICE

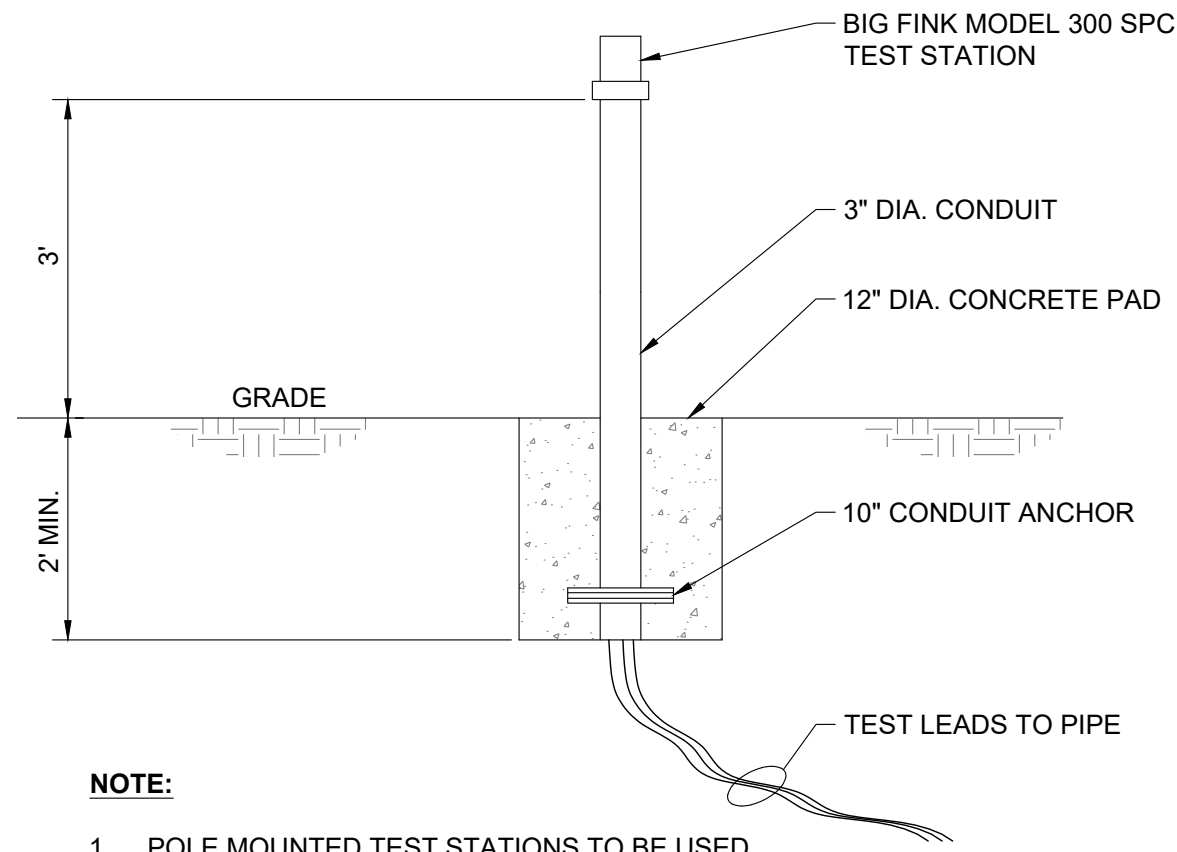
4 SPLICE DETAIL

SCALE: N.T.S.



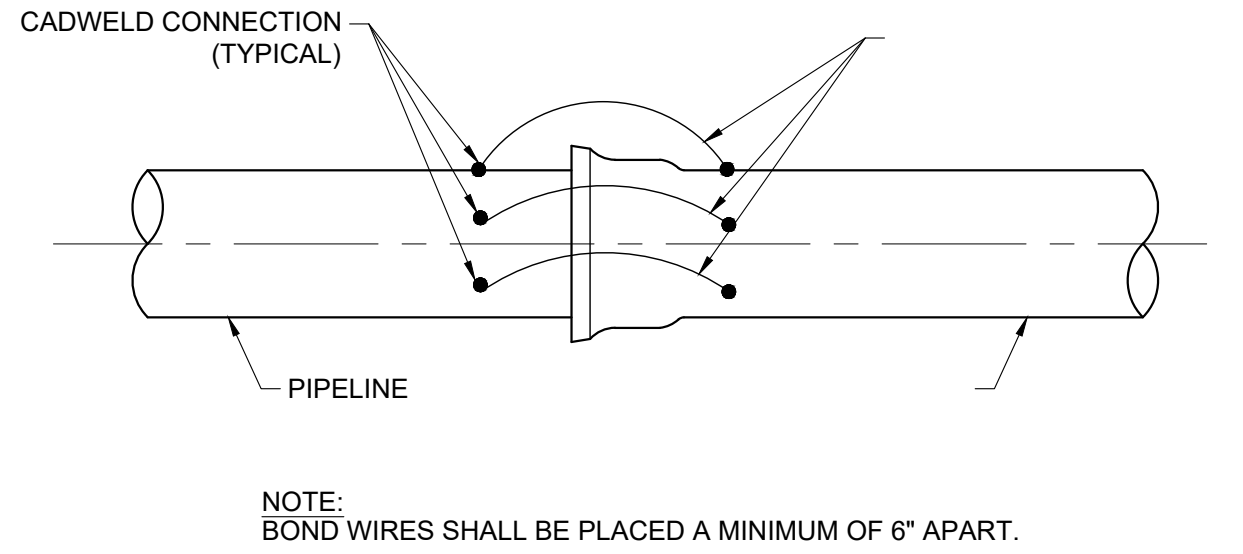
5 CADWELD CONNECTION DETAILS

SCALE: N.T.S.



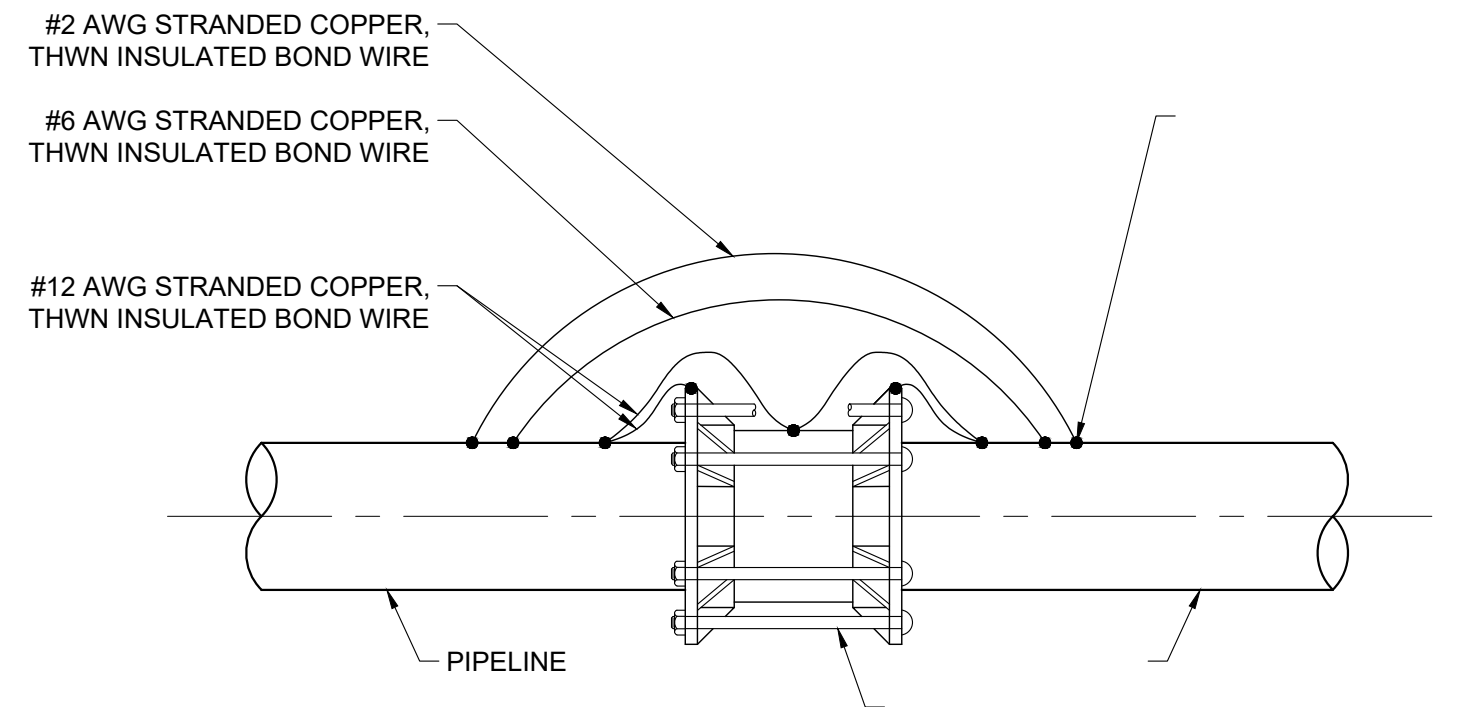
3 ABOVE GRADE TEST STATION

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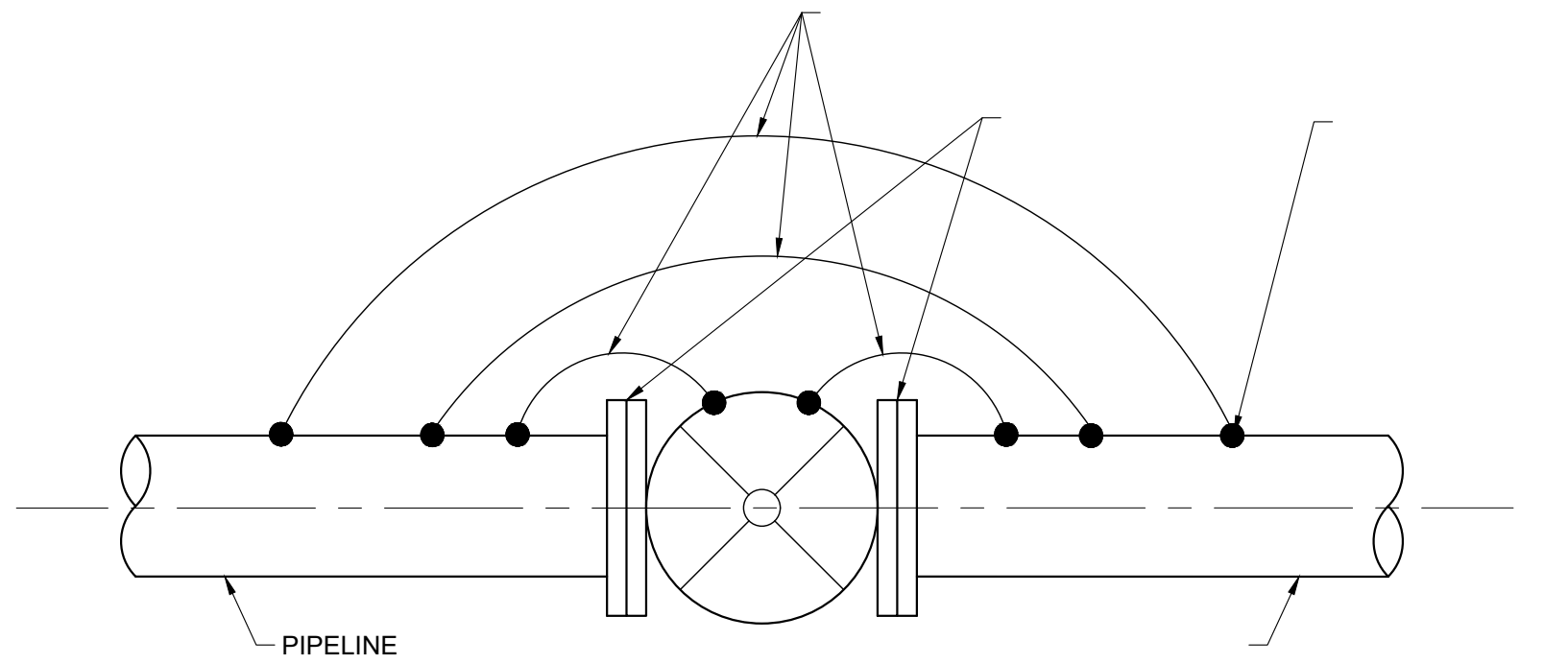
6 BELL & SPIGOT BONDING ARRANGEMENT

SCALE: N.T.S.



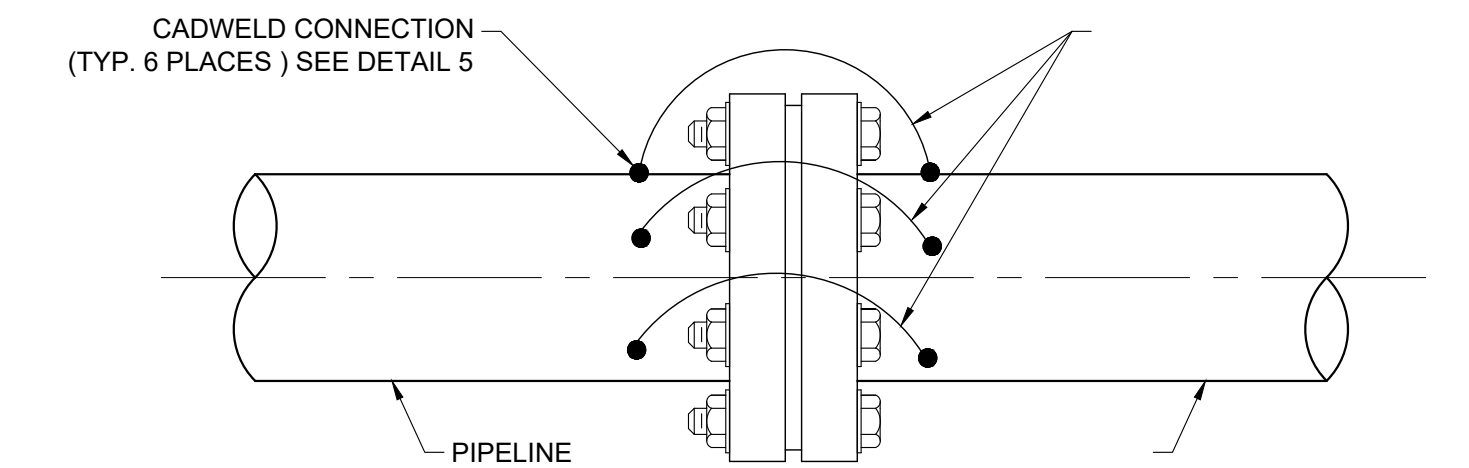
7 MECHANICAL COUPLING BONDING

SCALE: N.T.S.



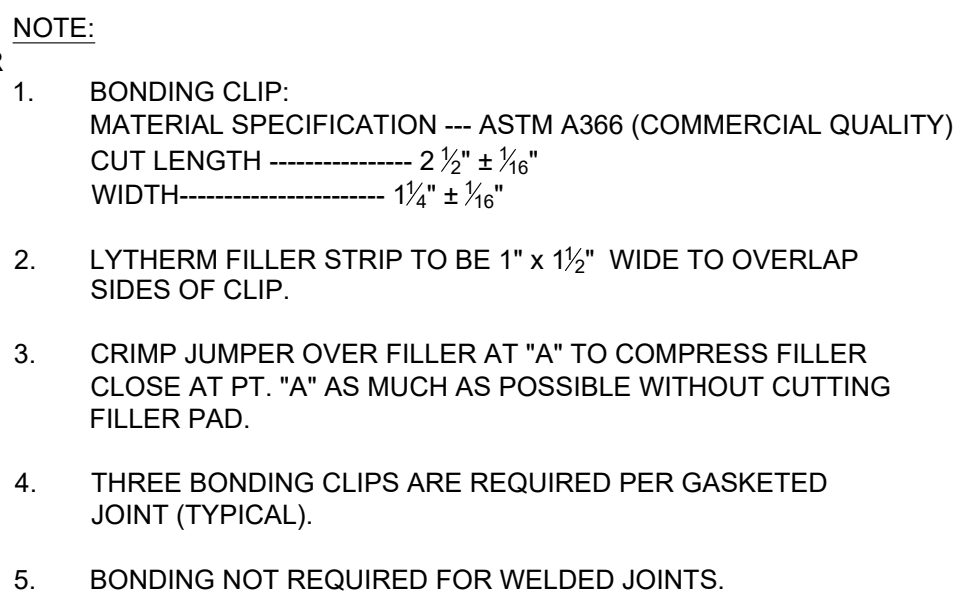
8 VALVE BONDING ARRANGEMENT

SCALE: N.T.S.



9 ELECTRICAL BONDING ACROSS FLANGE

SCALE: N.T.S.



#2 AWG STRANDED COPPER, THWN INSULATED BOND WIRE

CADWELD CONNECTION, (TYP. 4 PLACES) SEE DETAIL 5

PIPELINE

ISOLATION FLANGE SEE DETAIL

HEAT SHRINK TUBING WITH INTERFACE SEALANT

WIRE TO COIL CONNECTION IS CRIMPED AND SOLDERED USING 95/5 TIN ANTIMONY SOLDER

TWO PART URETHANE EPOXY

99.99% PURE COPPER ELEMENT

COPPER SULFATE CRYSTALS MIXED WITH DEIONIZED WATER

BARE CERAMIC JUNCTION POINT

3.29"

1.5"

TWO PART URETHANE EPOXY

100 PSI PVC PIPE 1" IN DIAMETER

BARE CERAMIC JUNCTION POINT

DOUBLE JUNCTION CERAMIC CAPSULE

3"

#14 AWG HMWPE .062 INSULATION (YELLOW) WIRE

NYLON CABLE TIE

BENTONITE/ COPPERSULFATE THIXOTROPIC GEL
50% BENTONITE
50% PLATING GRADE COPPER SULFATE CRYSTALS GELLED WITH COPPER SULFATE SATURATED DEIONIZED WATER

MICRO PORE GEOTEXTILE FILTRATION BAG

12"

STANDARD TEST STATIONS				
TEST STATION	STATION NO.	SEGMENT	TYPE OF TEST STATION	STRUCTURE
1	0406-58	TW6-SECTION 1	CP-2 - FLUSH MOUNTED ISOLATION	PROP BFV / PROP 30-INCH
2	6024-46	TW6-SECTION 1	CP-2 - FLUSH MOUNTED ISOLATION	REMOTE OPERATED BFV / PROP 54-INCH
3	6042-41	TW6-SECTION 1	CP-1 - FLUSH MOUNTED POTENTIAL	PROP 54-INCH
4	6194-25	TW6-SECTION 1	*CP-2 - FLUSH MOUNTED ISOLATION	PROP 54-INCH / PROP 54-INCH
5	6194-96	TW6-SECTION 1	CP-3- FLUSH MOUNTED CASED CROSSING	PROP 54-INCH / CASING
6	6224-99	TW6-SECTION 1	CP-3- FLUSH MOUNTED CASED CROSSING	PROP 54-INCH / CASING
7	6234-65	TW6-SECTION 1	*CP-2 - FLUSH MOUNTED ISOLATION	PROP 54-INCH / PROP 54-INCH
8	6344-90	TW6-SECTION 1	CP-1 - FLUSH MOUNTED POTENTIAL	PROP 54-INCH
9	6494-51	TW6-SECTION 1	CP-1 - FLUSH MOUNTED POTENTIAL	PROP 54-INCH
10	6764-80	TW6-SECTION 1	*CP-2 - FLUSH MOUNTED ISOLATION	PROP 54-INCH / PROP 54-INCH
11	6774-46	TW6-SECTION 1	CP-3- FLUSH MOUNTED CASED CROSSING	PROP 54-INCH / CASING
12	6794-30	TW6-SECTION 1	CP-3- FLUSH MOUNTED CASED CROSSING	PROP 54-INCH / CASING
13	6804-00	TW6-SECTION 1	*CP-2 - FLUSH MOUNTED ISOLATION	PROP 54-INCH / PROP 54-INCH
14	6994-95	TW6-SECTION 1	*CP-2 - FLUSH MOUNTED ISOLATION	PROP 54-INCH / PROP 54-INCH
15	7004-64	TW6-SECTION 1	CP-3- FLUSH MOUNTED CASED CROSSING	PROP 54-INCH / CASING
16	7084-05	TW6-SECTION 1	CP-3- FLUSH MOUNTED CASED CROSSING	PROP 54-INCH / CASING
17	7084-75	TW6-SECTION 1	*CP-2 - FLUSH MOUNTED ISOLATION	PROP 54-INCH / PROP 54-INCH
18	7244-50	TW6-SECTION 1	*CP-2 - FLUSH MOUNTED ISOLATION	PROP 54-INCH / PROP 54-INCH
19	7254-14	TW6-SECTION 1	CP-3- FLUSH MOUNTED CASED CROSSING	PROP 54-INCH / CASING
20	7264-55	TW6-SECTION 1	CP-3- FLUSH MOUNTED CASED CROSSING	PROP 54-INCH / CASING
21	7274-25	TW6-SECTION 1	*CP-2 - FLUSH MOUNTED ISOLATION	PROP 54-INCH / PROP 54-INCH
22	7524-20	TW6-SECTION 1	CP-1 - FLUSH MOUNTED POTENTIAL	PROP 54-INCH
23	7524-60	TW6-SECTION 1	*CP-2 - FLUSH MOUNTED ISOLATION	PROP 54-INCH / PROP 54-INCH
24	7564-64	TW6-SECTION 1	CP-3- FLUSH MOUNTED CASED CROSSING	PROP 48-INCH / CASING
25	7584-53	TW6-SECTION 1	CP-3- FLUSH MOUNTED CASED CROSSING	PROP 48-INCH / CASING
26	7584-79	TW6-SECTION 1	CP-2 - FLUSH MOUNTED ISOLATION	PROP 48-INCH / PROP 48-INCH

*ISOLATION TEST STATIONS TO BE INSTALLED IF PCPP IS SELECTED MATERIAL

PCCP PIPE MATERIAL - OPTION 1 (ZINC SACRIFICIAL ANODE)						
TEST STATION	STATION NO.	SEGMENT	TYPE OF TEST STATION	ANODE SPACING (FT)	NO. OF ANODES	ANODE MODEL
1	616+25	TW6-SECTION 1	CP-5- ANODE TEST STATION	10	10	ZUR-60
2	623+30	TW6-SECTION 1	CP-5- ANODE TEST STATION	10	10	ZUR-60
3	636+25	TW6-SECTION 1	CP-5- ANODE TEST STATION	10	10	ZUR-60
4	645+85	TW6-SECTION 1	CP-5- ANODE TEST STATION	10	10	ZUR-60
5	656+60	TW6-SECTION 1	CP-5- ANODE TEST STATION	10	10	ZUR-60
6	666+00	TW6-SECTION 1	CP-5- ANODE TEST STATION	10	10	ZUR-60
7	677+00	TW6-SECTION 1	CP-5- ANODE TEST STATION	10	10	ZUR-60
8	686+50	TW6-SECTION 1	CP-5- ANODE TEST STATION	10	10	ZUR-60
9	694+37	TW6-SECTION 1	CP-5- ANODE TEST STATION	10	10	ZUR-60
10	708+40	TW6-SECTION 1	CP-5- ANODE TEST STATION	10	10	ZUR-60
11	718+97	TW6-SECTION 1	CP-5- ANODE TEST STATION	10	10	ZUR-60
12	726+80	TW6-SECTION 1	CP-5- ANODE TEST STATION	10	10	ZUR-60
13	736+50	TW6-SECTION 1	CP-5- ANODE TEST STATION	10	10	ZUR-60
14	746+75	TW6-SECTION 1	CP-5- ANODE TEST STATION	10	10	ZUR-60
15	756+29	TW6-SECTION 1	CP-5- ANODE TEST STATION	10	10	ZUR-60
16	24+87	TW6-SECTION 1	CP-5- ANODE TEST STATION	10	2	ZUR-60
17	25+15	TW6-SECTION 1	CP-5- ANODE TEST STATION	10	2	ZUR-60
18	26+00	TW6-SECTION 1	CP-5- ANODE TEST STATION	10	4	ZUR-60
19	29+20	TW6-SECTION 1	CP-5- ANODE TEST STATION	10	2	ZUR-60
20	29+30	TW6-SECTION 1	CP-5- ANODE TEST STATION	10	2	ZUR-60

STEEL PIPE MATERIAL - OPTION 1 (HIGH POTENTIAL-MAGNESIUM SACRIFICIAL ANODE)						
TEST STATION	STATION NO.	SEGMENT	TYPE OF TEST STATION	ANODE SPACING (FT)	NO. OF ANODES	ANODE MODEL
1	616+25	TW6-SECTION 1	CP-5- ANODE TEST STATION	10	6	6054
2	623+30	TW6-SECTION 1	CP-5- ANODE TEST STATION	10	6	6054
3	636+25	TW6-SECTION 1	CP-5- ANODE TEST STATION	10	6	6054
4	645+85	TW6-SECTION 1	CP-5- ANODE TEST STATION	10	6	6054
5	656+60	TW6-SECTION 1	CP-5- ANODE TEST STATION	10	6	6054
6	666+00	TW6-SECTION 1	CP-5- ANODE TEST STATION	10	6	6054
7	677+00	TW6-SECTION 1	CP-5- ANODE TEST STATION	10	6	6054
8	686+50	TW6-SECTION 1	CP-5- ANODE TEST STATION	10	6	6054
9	694+37	TW6-SECTION 1	CP-5- ANODE TEST STATION	10	6	6054
10	708+40	TW6-SECTION 1	CP-5- ANODE TEST STATION	10	6	6054
11	718+97	TW6-SECTION 1	CP-5- ANODE TEST STATION	10	6	6054
12	726+80	TW6-SECTION 1	CP-5- ANODE TEST STATION	10	6	6054
13	736+50	TW6-SECTION 1	CP-5- ANODE TEST STATION	10	6	6054
14	746+75	TW6-SECTION 1	CP-5- ANODE TEST STATION	10	6	6054
15	756+29	TW6-SECTION 1	CP-5- ANODE TEST STATION	10	6	6054
16*	24+87	TW6-SECTION 1	CP-5- ANODE TEST STATION	10	2	ZUR-60
17*	25+15	TW6-SECTION 1	CP-5- ANODE TEST STATION	10	2	ZUR-60
18*	26+00	TW6-SECTION 1	CP-5- ANODE TEST STATION	10	4	ZUR-60
19*	29+20	TW6-SECTION 1	CP-5- ANODE TEST STATION	10	2	ZUR-60
20*	29+30	TW6-SECTION 1	CP-5- ANODE TEST STATION	10	2	ZUR-60

* ANODES TO BE ZUR-60 ZINC ANODES

STEEL ONLY		
619+25.00	623+65.00	440'
676+80.00	680+00.00	320'
699+95.00	708+75.00	880'
724+50.00	727+25.00	275'
752+60.00	758+80.00	620'

File: C:\Users\ogorzo\DC\ACCDocs\Leo A Daly\128-10031-001\Project Files\4-1-BIM-CAD\PROGRAM-WIDE\Civil\Details\STANDARD DETAILS - CATHODIC PROTECTION.dwg Plot Date: 6/19/2025 6:06 PM By: Garza, Ozzie

REV.	DATE	DESCRIPTION	BY	DATE	=	MAY 2025	DESIGNED	—	GRS
1	06/23/25	ADDENDUM NO. 3	BM	SCALE	=	AS-SHOWN	CHECKED	—	BM
				SCALE	=		DRAWN	—	BRS
				PROJECT NO	=	128-10031-001	CHECKED	—	JW



DUPAGE WATER COMMISSION
WATERLINK EXTENSION
CONTRACT TW-6/25 SECTION 1 WEST TRANSMISSION MAIN

CATHODIC PROTECTION
DETAILS
SHEET 3 OF 3



00 91 13 ADDENDUM NO. 4

PART 1 - G E N E R A L

1.01 ADDENDUM

- A. Project Information:
 - 1. To: PROSPECTIVE BIDDERS
 - 2. Project Title: CONTRACT TW-6/25 SECTION 1 (BOOK ROAD)
 - 3. Date of Addendum: JUNE 25, 2025
 - 4. Owner: DUPAGE WATER COMMISSION
 - 5. Engineer: LOCKWOOD, ANDREWS & NEWNAM, INC.
- B. This Addendum forms a part of the Contract Documents and modifies the original documents dated May 23, 2025.
- C. Acknowledge receipt of this Addendum in the space provided in the Bidder's Proposal documents included with Bidding Documents Failure to do so may disqualify the Bidder.

1.02 CHANGES TO PROJECT MANUAL

- A. Bidding Documents – Section 00 42 22 – BID FORM
 - 1. Remove Section 00 42 22 in its entirety and replace with the attached revised Section 00 42 22.
 - a. Bid Item 18 Air Release and Access Manhole (Type 1) revised from 6 to 5.
 - b. Bid Item 19 Air Release and Access Manhole (Type 2) revised from 8 to 9.
 - c. Bid Item 39 48-Inch Steel Water Main By Open-Cut (Book Road STA 752+60.00 to 756+64.30) revised from 425 to 430 LF.
 - d. Bid item 178 Replace 15-Inch Storm Sewer (With AWWA C900 DR 25 PVC Pipe) revised from 160 to 191 LF.
 - e. Add Bid item 195 Remove and Replace Inlet
- B. Bidding Documents – Section 01 22 00 – Unit Prices
 - 1. Remove Section 01 22 00 in its entirety and replace with the attached revised Section 01 22 00.
 - a. Add Bid item 195 Remove and Replace Inlet
 - 1) *Bid item 195 Remove and Replace Inlet*
 - 1. *Measurement and payment per each inlet replaced.*
 - 2. *Material, labor, excavation, sheeting, shoring, dewatering, bedding, backfill, compaction, utility repair, testing, and associated miscellaneous work required to remove existing inlet and furnish and install replacement catch basin and frame and grate, to match existing conditions, including adaptors, couplings, and boots as necessary to connect to existing. Includes removal, transporting, and disposal of removed material and excess excavated material.*

1.03 CHANGES TO TECHNICAL SPECIFICATIONS

A. Section 34 20 00 – IDOT District One Special Provisions

1. Revise subsection 1.09. L. Restoration of Work Area with the following:

“Removal, Disposal, and Salvage of Existing Traffic Signal Equipment.

The removal, disposal, and/or salvage of existing traffic signal equipment shall become the property of the Contractor and disposed of by the Contractor outside the State’s right-of-way, unless otherwise noted. No additional compensation shall be provided to the Contractor for removal, disposal or salvage expense for the work in the Contract.”

1.04 CHANGES TO DRAWINGS

- A. Replace Sheet 118 of 199 (Drawing MOT-000) to address comments from IDOT Permits for use of IL Route 59 for Detour Routes. Updated General Notes to revised lettering on D3-1 signs to 5” and added 3 additional General Notes. Revised Detour Route Timing Impacts Table to remove timing for Stage 2B and 3A for IL Route 59 at 75th Street and IL Route 59 at Beebe Drive.
- B. Replace Sheet 119 of 199 (Drawing MOT-001) to address comments from IDOT Permits for use of IL Route 59 for Detour Routes. Updated Sign Legends to clarify panels are Orange by adding (O) after sign codes. Added Additional Detour Signs “V” and “W” to sign legend. Added Legend Item to note Temporary Traffic Signal Timing locations to supplement Table on Sheet MOT-000. Revised Sign locations and types at various locations as clouded on the sheet.
- C. Replace Sheet 120 of 199 (Drawing MOT-002) to address comments from IDOT Permits for use of IL Route 59 for Detour Routes. Updated Sign Legends to clarify panels are Orange by adding (O) after sign codes. Added Additional Detour Signs “V” and “W” to sign legend. Added Legend Item to note Temporary Traffic Signal Timing locations to supplement Table on Sheet MOT-000. Revised Sign locations and types at various locations as clouded on the sheet.
- D. Replace Sheet 121 of 199 (Drawing MOT-003) to address comments from IDOT Permits for use of IL Route 59 for Detour Routes. Updated Sign Legends to clarify panels are Orange by adding (O) after sign codes. Added Additional Detour Signs “V” and “W” to sign legend. Added Legend Item to note Temporary Traffic Signal Timing locations to supplement Table on Sheet MOT-000. Revised Sign locations and types at various locations as clouded on the sheet.
- E. Replace Sheet 122 of 199 (Drawing MOT-004) to address comments from IDOT Permits for use of IL Route 59 for Detour Routes. Updated Sign Legends to clarify panels are Orange by adding (O) after sign codes. Added Additional Detour Signs “V” and “W” to sign legend. Added Legend Item to note Temporary Traffic Signal Timing locations to supplement Table on Sheet MOT-000. Revised Sign locations and types at various locations as clouded on the sheet.
- F. Replace Sheet 123 of 199 (Drawing MOT-005) to address comments from IDOT Permits for use of IL Route 59 for Detour Routes. Updated Sign Legends to clarify panels are Orange by adding (O) after sign codes. Added Additional Detour Signs “V” and “W” to sign legend. Added Legend Item to note Temporary Traffic Signal Timing locations to supplement Table on Sheet MOT-000. Revised Sign locations and types at various locations as clouded on the sheet.
- G. Replace Sheet 124 of 199 (Drawing MOT-006) to address comments from IDOT Permits for use of IL Route 59 for Detour Routes. Updated Sign Legends to clarify panels are Orange by adding (O) after sign codes. Added Additional Detour Signs “V” and “W” to sign legend. Added Legend Item to note Temporary Traffic Signal Timing locations to supplement Table on Sheet MOT-000. Revised Sign locations and types at various locations as clouded on the sheet.
- H. Replace Sheet 125 of 199 (Drawing MOT-007) to address comments from IDOT Permits for use of IL Route 59 for Detour Routes. Updated Sign Legends to clarify panels are Orange by adding (O) after sign codes. Added Additional Detour Signs “V” and “W” to sign legend. Added Legend Item to note Temporary Traffic Signal Timing locations to supplement Table on Sheet MOT-000. Revised Sign locations and types at various locations as clouded on the sheet.
- I. Replace Sheet 126 of 199 (Drawing MOT-008) to address comments from IDOT Permits for use of IL Route 59 for Detour Routes. Updated Sign Legends to clarify panels are Orange by adding

(O) after sign codes. Added Additional Detour Signs “V” and “W” to sign legend. Added Legend Item to note Temporary Traffic Signal Timing locations to supplement Table on Sheet MOT-000. Revised Sign locations and types at various locations as clouded on the sheet.

- J. Replace Sheet 127 of 199 (Drawing MOT-009) to address comments from IDOT Permits for use of IL Route 59 for Detour Routes. Updated Sign Legends to clarify panels are Orange by adding (O) after sign codes. Added Additional Detour Signs “V” and “W” to sign legend. Added Legend Item to note Temporary Traffic Signal Timing locations to supplement Table on Sheet MOT-000. Revised Sign locations and types at various locations as clouded on the sheet.
- K. Replace Sheet 128 of 199 (Drawing MOT-010) to address comments from IDOT Permits for use of IL Route 59 for Detour Routes. Updated Sign Legends to clarify panels are Orange by adding (O) after sign codes. Added Additional Detour Signs “V” and “W” to sign legend. Added Legend Item to note Temporary Traffic Signal Timing locations to supplement Table on Sheet MOT-000. Revised Sign locations and types at various locations as clouded on the sheet.

1.05 QUESTIONS AND CLARIFICATIONS

Q: UPDATE TO RESPONSE TO QUESTIONS AND CLARIFICATIONS PROVIDED IN ADDENDUM NO 3 TO QUESTION #7:

In the Naperville Standard Specification 103 Developer/Contractor Responsibilities 103.2 Bonding and Licensing stats that “all contactors must provide a surety bond or letter of credit equal to 110 percent of the value of the proposed improvements...” Is that applicable to this project, or is that just added as part of Naperville’s standard specs? Also, would we need a bond for DuPage County? Will County?

A: IDOT has confirmed that there will be no bond required for the use of IL Route 59 as a Detour Route. Contractor will be required to fill out and submit an IDOT Traffic Control Authorization Request, form BSPE 725, which is typical and required for any traffic control placed within an IDOT ROW. Contractor will have to provide a Certificate of Insurance naming IDOT as an additional insured since there is no active contract with IDOT associated with this DWCC Contract.

END OF ADDENDUM NO. 4

Stanley Consultants, Inc.



6/25/2025
Expires 11/30/2025

00 42 22 BID FORM

PART 1 GENERAL

1.01 SUMMARY

A. See Special Instructions to Bidders.

TW-6/25 SECTION 1					
No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
ALTERNATES TABLE					
A1	54-INCH STEEL WATER MAIN BY OPEN-CUT	LF	14,840		
A2	54-INCH STEEL WATER MAIN BY TRENCHLESS CONSTRUCTION	LF	1,400		
A3	ALTERNATE A SUBTOTAL (A1 + A2)				
B1	54-INCH PCCP WATER MAIN BY OPEN-CUT	LF	14,840		
B2	54-INCH STEEL WATER MAIN BY TRENCHLESS CONSTRUCTION	LF	1,400		
B3	ALTERNATE B SUBTOTAL (B1 + B2)				
C1	48-INCH STEEL WATER MAIN BY OPEN-CUT	LF	14,840		
C2	48-INCH STEEL WATER MAIN BY TRENCHLESS CONSTRUCTION	LF	1,400		
C3	ALTERNATE C SUBTOTAL (C1 + C2)				
D1	48-INCH PCCP WATER MAIN BY OPEN-CUT	LF	14,840		
D2	48-INCH STEEL WATER MAIN BY TRENCHLESS CONSTRUCTION	LF	1,400		
D3	ALTERNATE D SUBTOTAL (D1 + D2)				
BASE BID TABLE					
1	MOBILIZATION	LS	1		
2	TEMPORARY FIELD OFFICE	MNTH	18		
3	16-INCH BUTTERFLY VALVE IN VAULT	EA			

TW-6/25 SECTION 1					
No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
4	20-INCH BUTTERFLY VALVE IN VAULT	EA			
5	24-INCH BUTTERFLY VALVE IN VAULT	EA			
6	24-INCH REMOTE OPERATED BUTTERFLY VALVE WITH VAULT	EA			
7	30-INCH BUTTERFLY VALVE WITH ACTUATOR MANHOLE	EA			
8	36-INCH BUTTERFLY VALVE WITH ACTUATOR MANHOLE	EA			
9	36-INCH REMOTE OPERATED BUTTERFLY VALVE WITH VAULT	EA			
10	48-INCH BUTTERFLY VALVE WITH ACTUATOR MANHOLE (75 TH STREET – STA 25+00) (OWNER-FURNISHED VALVE)	LS	1		
11	48-INCH BUTTERFLY VALVE WITH ACTUATOR MANHOLE (75 TH STREET – STA 29+25) (OWNER-FURNISHED VALVE)	LS	1		
12	48-INCH BUTTERFLY VALVE WITH ACTUATOR MANHOLE AND DISINFECTION BYPASS ASSEMBLY (BOOK ROAD) (OWNER-FURNISHED VALVE)	LS	1		
13	54-INCH BUTTERFLY VALVE WITH ACTUATOR MANHOLE (OWNER-FURNISHED VALVE)	EA	2		
14	54-INCH REMOTE OPERATED BUTTERFLY VALVE WITH VAULT (OWNER-FURNISHED VALVE)	EA	1		
15	54-INCH BUTTERFLY VALVE WITH ACTUATOR MANHOLE	EA			
16	54-INCH REMOTE OPERATED BUTTERFLY VALVE WITH VAULT	EA			
17	AIR RELEASE VALVE MANHOLE (24-INCH DIA. AND SMALLER PIPE)	EA			
18	AIR RELEASE AND ACCESS MANHOLE (TYPE 1)	EA	<u>5</u>		

TW-6/25 SECTION 1					
No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
19	AIR RELEASE AND ACCESS MANHOLE (TYPE 2)	EA	9		
20	BLOW-OFF VALVE WITH MANHOLE (30-INCH DIA. AND SMALLER PIPE)	EA			
21	BLOW-OFF VALVE WITH MANHOLE (36-INCH DIA. AND LARGER PIPE)	EA	5		
22	16-INCH DUCTILE IRON WATER MAIN BY OPEN-CUT	LF			
23	16-INCH DUCTILE IRON WATER MAIN BY TRENCHLESS CONSTRUCTION	LF			
24	20-INCH DUCTILE IRON WATER MAIN BY OPEN-CUT	LF			
25	20-INCH DUCTILE IRON WATER MAIN BY TRENCHLESS CONSTRUCTION	LF			
26	24-INCH DUCTILE IRON WATER MAIN BY OPEN-CUT	LF			
27	24-INCH DUCTILE IRON WATER MAIN BY TRENCHLESS CONSTRUCTION	LF			
28	30-INCH DUCTILE IRON WATER MAIN BY OPEN-CUT	LF			
29	36-INCH DUCTILE IRON WATER MAIN BY OPEN-CUT	LF			
30	36-INCH DUCTILE IRON WATER MAIN BY TRENCHLESS CONSTRUCTION	LF			
31	36-INCH PCCP WATER MAIN BY OPEN-CUT	LF			
32	36-INCH PCCP WATER MAIN BY TRENCHLESS CONSTRUCTION	LF			
33	36-INCH STEEL WATER MAIN BY OPEN-CUT	LF			
34	36-INCH STEEL WATER MAIN BY TRENCHLESS CONSTRUCTION	LF			
35	48-INCH PCCP WATER MAIN BY OPEN-CUT	LF			

TW-6/25 SECTION 1					
No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
36	48-INCH PCCP WATER MAIN BY TRENCHLESS CONSTRUCTION	LF			
37	48-INCH STEEL WATER MAIN BY OPEN-CUT	LF			
38	48-INCH STEEL WATER MAIN BY TRENCHLESS CONSTRUCTION	LF			
39	48-INCH STEEL WATER MAIN BY OPEN-CUT (BOOK ROAD STA 752+60.00 TO 756+64.30)	LF	430		
40	48-INCH STEEL WATER MAIN BY TRENCHLESS CONSTRUCTION (BOOK ROAD STA 756+64.30 TO 758+52.24)	LF	188		
41	54-INCH PCCP WATER MAIN BY OPEN-CUT	LF			
42	54-INCH PCCP WATER MAIN BY TRENCHLESS CONSTRUCTION	LF			
43	54-INCH STEEL WATER MAIN BY OPEN-CUT	LF			
44	54-INCH STEEL WATER MAIN BY TRENCHLESS CONSTRUCTION	LF			
45	60-INCH STEEL WATER MAIN BY OPEN-CUT	LF			
46	60-INCH STEEL WATER MAIN BY TRENCHLESS CONSTRUCTION	LF			
47	75 TH STREET CONNECTION TO EXISTING DWC 48-INCH PCCP (STA 25+00)	LS	1		
48	75 TH STREET CONNECTION TO EXISTING DWC 48-INCH PCCP (STA 26+22)	LS	1		
49	75 TH STREET CONNECTION TO EXISTING DWC 48-INCH PCCP (STA 29+25)	LS	1		
50	30-INCH STUB FOR FUTURE CONNECTION	LS	1		
51	REMOVE 36-INCH TEST PLUG AND CONNECT TO 36-INCH WATER MAIN (ADJACENT CONTRACT)	EA			

PROPOSAL

TW-6/25 SECTION 1					
No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
52	REMOVE 54-INCH TEST PLUG AND CONNECT TO 54-INCH WATER MAIN (ADJACENT CONTRACT)	EA	1		
53	TRENCH BACKFILL (SELECT MATERIAL)	CY	39,240		
54	TRENCH BACKFILL (NATIVE MATERIAL)	CY			
55	CATHODIC PROTECTION SYSTEM	LS	1		
56	EARTH EXCAVATION	CY	4,210		
57	AGGREGATE BASE COURSE, TYPE B 2-INCH	SY	760		
58	AGGREGATE BASE COURSE, TYPE B 4-INCH	SY	70		
59	AGGREGATE BASE COURSE, TYPE B 6-INCH	SY	25,100		
60	PORTLAND CEMENT CONCRETE BASE COURSE, 8-INCH	SY			
61	BITUMINOUS MATERIALS (PRIME COAT)	LB	53,000		
62	BITUMINOUS MATERIALS (TACK COAT)	LB	25,220		
63	HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50	TON	13,590		
64	HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N70	TON			
65	HOT-MIX ASPHALT SURFACE COURSE, IL-9.5, MIX D, N50	TON	6,470		
66	HOT-MIX ASPHALT SURFACE COURSE, IL-9.5, MIX D, N70	TON			
67	HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 8-INCH	SY			
68	HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 12-INCH	SY			
69	PORTLAND CEMENT CONCRETE PAVEMENT, 12-INCH	SY			

PROPOSAL

TW-6/25 SECTION 1					
No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
70	PROTECTIVE COAT	SY			
71	PORTLAND CEMENT CONCRETE DRIVEWAY PAVEMENT, 6-INCH	SY			
72	PORTLAND CEMENT CONCRETE DRIVEWAY PAVEMENT, 8-INCH	SY	70		
73	PORTLAND CEMENT CONCRETE SIDEWALK, 5-INCH	SF			
74	PORTLAND CEMENT CONCRETE SIDEWALK, 6-INCH	SF			
75	DETECTABLE WARNINGS	SF	400		
76	PAVEMENT REMOVAL	SY	24,290		
77	HOT-MIX ASPHALT SURFACE REMOVAL, 1 1/2-INCH	SY			
78	HOT-MIX ASPHALT SURFACE REMOVAL, 1 3/4-INCH	SY			
79	DRIVEWAY PAVEMENT REMOVAL	SY	430		
80	COMBINATION CURB AND GUTTER REMOVAL	LF	3,630		
81	SIDEWALK REMOVAL	SF	6,590		
82	MEDIAN REMOVAL	SF			
83	COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.12	LF			
84	COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.18	LF			
85	COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.24	LF			
86	COMBINATION CONCRETE CURB AND GUTTER, TYPE M-4.12	LF			
87	CONCRETE MEDIAN, TYPE SB-6.18	SF			

TW-6/25 SECTION 1					
No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
88	STEEL PLATE BEAM GUARDRAIL, TYPE A, 6-FOOT POSTS	LF	50		
89	LONG-SPAN GUARDRAIL OVER CULVERT, 12-FOOT 6-INCH SPAN	LF	30		
90	TRAFFIC BARRIER TERMINAL, TYPE 1B	EA	2		
91	TRAFFIC BARRIER TERMINAL, TYPE 2	EA	2		
92	GUARDRAIL REMOVAL	LF	160		
93	PAVEMENT MARKING BLACKOUT TAPE, 6-INCH	LF	1,220		
94	CHANGEABLE MESSAGE SIGN	CAL DAY	2,920		
95	SHORT TERM PAVEMENT MARKING	LF	9,190		
96	SHORT TERM PAVEMENT MARKING REMOVAL	SF	3,610		
97	TEMPORARY PAVEMENT MARKING LETTERS AND SYMBOLS – PAINT	SF	190		
98	TEMPORARY PAVEMENT MARKING – LINE 4-INCH – PAINT	LF	23,150		
99	TEMPORARY PAVEMENT MARKING – LINE 6-INCH – PAINT	LF			
100	TEMPORARY PAVEMENT MARKING – LINE 24-INCH – PAINT	LF	100		
101	TEMPORARY PAVEMENT MARKING – LINE 4-INCH – TYPE IV TAPE	LF	6,230		
102	TEMPORARY PAVEMENT MARKING – LINE 6-INCH – TYPE IV TAPE	LF			
103	TEMPORARY CONCRETE BARRIER	LF	2,170		
104	IMPACT ATTENUATORS, TEMPORARY (FULLY REDIRECTIVE, NARROW), TEST LEVEL 2	EA	4		

TW-6/25 SECTION 1					
No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
105	RELOCATE SIGN PANEL ASSEMBLY – TYPE A	EA	21		
106	THERMOPLASTIC PAVEMENT MARKING – LETTERS AND SYMBOLS	SF	1,040		
107	THERMOPLASTIC PAVEMENT MARKING – LINE 4-INCH	LF	64,350		
108	THERMOPLASTIC PAVEMENT MARKING – LINE 6-INCH	LF	4,910		
109	THERMOPLASTIC PAVEMENT MARKING – LINE 12-INCH	LF	2,460		
110	THERMOPLASTIC PAVEMENT MARKING – LINE 24-INCH	LF	300		
111	PAVEMENT MARKING REMOVAL – GRINDING	SF	16,010		
112	UNDERGROUND CONDUIT, GALVANIZED STEEL, 2-INCH DIA.	LF	1,380		
113	HANDHOLE	EA	3		
114	MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION	EA	6		
115	ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14, ONE PAIR	LF	820		
116	DRILL EXISTING HANDHOLE	EA	2		
117	DETECTOR LOOP, TYPE I	LF	320		
118	DETECTOR LOOP REPLACEMENT	LF	1,770		
119	TEMPORARY TRAFFIC SIGNAL INSTALLATION	EA	5		
120	MODIFY EXISTING CONTROLLER	EA	6		
121	REBUILD EXISTING HANDHOLE	EA			
122	REMOVE EXISTING HANDHOLE	EA	3		
123	CLASS D PATCHES, 12-INCH	SY	1,630		

PROPOSAL

TW-6/25 SECTION 1					
No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
124	BIKE PATH REMOVAL	SY			
125	MAILBOX REMOVE AND REPLACE	EA	2		
126	FENCE REMOVAL AND REINSTALLATION	LF			
127	TEMPORARY ACCESS (PRIVATE ENTRANCE)	EA	12		
128	TEMPORARY ACCESS (COMMERCIAL ENTRANCE)	EA	2		
129	TEMPORARY ACCESS (ROAD)	EA	10		
130	TRAFFIC CONTROL AND PROTECTION, (SPECIAL)	LS	1		
131	HOT-MIX ASPHALT DRIVEWAY PAVEMENT, 4-INCH	SY	330		
132	HOT-MIX ASPHALT DRIVEWAY PAVEMENT, 10-INCH	SY			
133	DRAINAGE AND UTILITY STRUCTURES TO BE ADJUSTED	EA	10		
134	DRAINAGE AND UTILITY STRUCTURES TO BE RECONSTRUCTED	EA	1		
135	TEMPORARY INFORMATION SIGNING	SF	160		
136	TEMPORARY PAVEMENT	SY	740		
137	TEMPORARY TRAFFIC SIGNAL TIMING	EA	27		
138	HOT-MIX ASPHALT SURFACE REMOVAL – BUTT JOINT	SY	740		
139	TELESCOPING STEEL SIGN SUPPORT	LF	25		
140	METAL POST – TYPE A	LF	25		
141	EROSION CONTROL SEEDING, LAWN MIXTURE (CLASS 1)	LB	830		
142	EROSION CONTROL SEEDING, ROADSIDE MIXTURE (CLASS 2)	LB	660		

PROPOSAL

TW-6/25 SECTION 1					
No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
143	EROSION CONTROL SEEDING – PASTURE MIXTURE	LB			
144	EROSION CONTROL SEEDING – SPORTS TURF MIXTURE	LB			
145	HIGH VISIBILITY SAFETY FENCE	LF	30,100		
146	TREE AND SHRUBBERY PROTECTION	EA	130		
147	TREE REMOVAL (6- TO 15-UNIT DIAMETER)	EA			
148	TREE REMOVAL (OVER 15-UNIT DIAMETER)	EA			
149	TREE REMOVAL (AREA)	AC			
150	DUAL FENCE BARRIER (HIGH-VISIBILITY GEOTEXTILE OUTER FENCE)	LF	3,830		
151	SILT FENCE	LF	11,000		
152	INLET PROTECTION, CURB	EA	15		
153	INLET PROTECTION, AREA	EA	40		
154	ROLLED EROSION CONTROL PRODUCTS	LF			
155	UTILITY RELOCATION/IMPROVEMENT	EA			
156	REMOVE AND REPLACE COMMUNICATIONS LINE	LF			
157	LIGHT POLE RELOCATION	EA			
158	WATER MAIN RELOCATION	LS			
159	REMOVE AND REPLACE 2-INCH GAS MAIN	LF			
160	REMOVE AND REPLACE 4-INCH GAS MAIN	LF			
161	REMOVE AND REPLACE 6-INCH GAS MAIN	LF			
162	REMOVE AND REPLACE 6-INCH SANITARY SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF			
163	REMOVE AND REPLACE 8-INCH SANITARY SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF	130		

TW-6/25 SECTION 1					
No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
164	REMOVE AND REPLACE 12-INCH SANITARY SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF			
165	REMOVE AND REPLACE 15-INCH SANITARY SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF			
166	REMOVE AND REPLACE 16-INCH SANITARY SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF			
167	REMOVE AND REPLACE 18-INCH SANITARY SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF			
168	REMOVE AND REPLACE 24-INCH SANITARY SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF			
169	REMOVE AND REPLACE 12-INCH FES	EA			
170	REMOVE AND REPLACE 15-INCH FES	EA			
171	REMOVE AND REPLACE 18-INCH FES	EA	1		
172	REMOVE AND REPLACE 24-INCH FES	EA			
173	REPLACE 4-INCH STORM SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF			
174	REPLACE 6-INCH STORM SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF			
175	REPLACE 8-INCH STORM SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF			
176	REPLACE 10-INCH STORM SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF	240		
177	REPLACE 12-INCH STORM SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF	630		
178	REPLACE 15-INCH STORM SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF	191		
179	REPLACE 16-INCH STORM SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF			
180	REPLACE 18-INCH STORM SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF	260		

PROPOSAL

TW-6/25 SECTION 1					
No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
181	REPLACE 20-INCH STORM SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF			
182	REPLACE 24-INCH STORM SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF	270		
183	REPLACE 30-INCH STORM SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF			
184	REPLACE 36-INCH STORM SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF			
185	REPLACE 42-INCH STORM SEWER (WITH AWWA C900 DR 25 PVC PIPE)	LF			
186	REMOVE AND REPLACE HEADWALL OF 36-INCH RCP CULVERT	LS			
187	REMOVE AND REPLACE 12-INCH STORM CULVERT WITH 12-INCH CMP CULVERT	LF			
188	REMOVE AND REPLACE 15-INCH STORM CULVERT WITH 15-INCH CMP CULVERT	LF			
189	REMOVE AND REPLACE 24-INCH STORM CULVERT WITH 24-INCH CMP CULVERT	LF			
190	REMOVE AND REPLACE 30-INCH STORM CULVERT WITH 30-INCH CMP CULVERT	LF	60		
191	REMOVE AND REPLACE 48-INCH BY 48-INCH REINFORCED CONCRETE BOX CULVERT	LF			
192	REMOVE AND REPLACE HEADWALL OF 65-INCH BY 65-INCH BOX CULVERT	LS			
193	REMOVE AND REPLACE CATCH BASIN	EA	21		
194	REMOVE AND REPLACE STORM MANHOLE	EA			
195	REMOVE AND REPLACE INLET	EA	1		
196	CONNECTION TO EXISTING SEWER STRUCTURE	EA	42		
197	REMOVE AND REPLACE DUAL STORM CULVERTS 36-INCH AND HEADWALLS	LS	1		

PROPOSAL

TW-6/25 SECTION 1					
No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
198	CROSSING EXISTING 58-INCH BY 91-INCH ELLIPTICAL CONCRETE PIPE (BOOK ROAD)	LS	1		
199	STEEL SHEET PILING COFFERDAM	SF			
200	STRUCTURAL LINER FOR WATER MAIN	LF			
201	STRUCTURAL LINER FOR SEWERS	LF			
202	MS 31A METERING STATION (MONTGOMERY 1)	LS			
203	MS 31B METERING STATION (MONTGOMERY 2)	LS			
204	MS 32A METERING STATION (OSWEGO 1)	LS			
205	MS 32B METERING STATION (OSWEGO 2)	LS			
206	MS 32C METERING STATION (OSWEGO 3)	LS			
207	MS 33A METERING STATION (YORKVILLE 1)	LS			
208	MS 33B METERING STATION (YORKVILLE 2)	LS			
209	CHEMICAL FEED BUILDING	LS			
210	VERTICAL DROP STRUCTURES (STA 619+71 AND STA 623+24)	LS	1		
211	VERTICAL DROP STRUCTURES (STA 677+21 AND STA 679+55)	LS	1		
212	VERTICAL DROP STRUCTURES (STA 700+39 AND STA 708+30)	LS	1		
213	VERTICAL DROP STRUCTURES (STA 724+89 AND STA 726+79)	LS	1		
IND1	EXPLORATORY EXCAVATION	CF	1,000		
IND2	EXPLORATORY EXCAVATION, VACUUM	EA	12		

PROPOSAL

TW-6/25 SECTION 1					
No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
IND3	ADJUST WATER SERVICE LINE	LF	100		
IND4	ADJUST SEWER SERVICE LINE	LF	100		
IND5	REMOVE AND REPLACE DRAIN TILE	LS			
ALL1	ALLOWANCE: CITY OF NAPERVILLE DPU-E ELECTRIC SERVICES	LS	1	\$25,000	\$25,000
BB1	BASE BID SUBTOTAL (SUM OF BID PRICE FOR ITEMS 1-213 + IND 1-5 + ALL1)				

Steel Pipe Manufacturer: _____

PCCP Manufacturer: _____

TOTAL BID PRICE TABLE
ALTERNATE A (54-INCH STEEL) TOTAL BID PRICE (A3 +BB1)
TOTAL BID PRICE (\$ Figures)
TOTAL BID PRICE (Words)
ALTERNATE B (54-INCH PCCP) TOTAL BID PRICE (B3 +BB1)
TOTAL BID PRICE (\$ Figures)
TOTAL BID PRICE (Words)
ALTERNATE C (48-INCH STEEL) TOTAL BID PRICE (C3 + BB1)
TOTAL BID PRICE (\$ Figures)
TOTAL BID PRICE (Words)
ALTERNATE D (48-INCH PCCP) TOTAL BID PRICE (D3 +BB1)
TOTAL BID PRICE (\$ Figures)
TOTAL BID PRICE (Words)

PROPOSAL**VALUE ENGINEERING PROPOSAL NO. _____****BIDDER NAME: _____**

Item No.	Plan Quantity	Plan Unit Price	Plan Bid Price	Revised Quantity	Revised Unit Price	Revised Bid Price	Deductions/Additions (Plan Bid Price – Revised Bid Price, or Price of New Item)
TOTAL DEDUCTIONS (SUM OF ROWS ABOVE)							\$
TOTAL APPLIED DEDUCTIONS ¹ (50% TOTAL DEDUCTIONS)							\$
ALTERNATE A REVISED TOTAL BID PRICE (A3 + BB1 – 50% TOTAL APPLIED DEDUCTIONS)							\$
ALTERNATE B REVISED TOTAL BID PRICE (B3 + BB1 – 50% TOTAL APPLIED DEDUCTIONS)							\$
ALTERNATE C REVISED TOTAL BID PRICE (C3 + BB1 – 50% TOTAL APPLIED DEDUCTIONS)							\$
ALTERNATE D REVISED TOTAL BID PRICE (D3 + BB1 – 50% TOTAL APPLIED DEDUCTIONS)							\$

1. Total applied deductions calculated in accordance with VE Incentive formula provided in Special Instructions to Bidders. Actual final approved Total Applied Deductions will be calculated based on final Owner's costs, as described in the Special Instructions to Bidders.

Reduction in schedule (calendar days): _____

Description of Value Engineering Proposal (provide attachments or additional pages as necessary):

VALUE ENGINEERING SUMMARY TABLE	
Alternates Total Bid Prices from Total Bid Price Table	
Alternate A Total Bid Price	\$
Alternate B Total Bid Price	\$
Alternate C Total Bid Price	\$
Alternate D Total Bid Price	\$
Value Engineering Proposals 50% Deductions from VE Proposal Table(s), as Applicable	
Value Engineering Proposal #1 Deductions (50% Total)	\$
Value Engineering Proposal #2 Deductions (50% Total)	\$
Value Engineering Proposal #3 Deductions (50% Total)	\$
Value Engineering Proposal #4 Deductions (50% Total)	\$
Value Engineering Proposal #5 Deductions (50% Total)	\$
Value Engineering Proposal #6 Deductions (50% Total)	\$
Value Engineering Proposal #7 Deductions (50% Total)	\$
POTENTIAL TOTAL VALUE ENGINEERING DEDUCTIONS IF ALL VE PROPOSALS ARE APPROVED:	\$
Reduced Total Bid Prices (Total Bid Price – Potential Total VE Deductions)	
Alternate A Reduced Total Bid Price	\$
Alternate B Reduced Total Bid Price	\$
Alternate C Reduced Total Bid Price	\$
Alternate D Reduced Total Bid Price	\$

01 22 00 UNIT PRICES

PART 1 - GENERAL

1.01 SUMMARY

- A. This Section includes the following requirements:
 - 1. Items of Work described herein are specifically listed in Agreement for separate measurement and payment.
 - 2. No other items of Work required by Contract Documents shall be measured or paid for as a separate item, but shall be included as part of listed Unit Price item to which Work pertains. Failure to list all such related Work in the following descriptions of Unit Price items shall not invalidate this stipulation.
 - 3. Measure Unit Price quantities for payment and submit to Owner's Representative.

1.02 REFERENCES

- A. IDOT Standard Specifications for Road and Bridge Construction 2022, as modified by IDOT Supplemental Specifications and Recurring Special Provisions 2025.

1.03 DESCRIPTION OF UNIT PRICE ITEMS

- A. The following paragraphs describe measurement and payment for items of work to be completed under each Unit Price item listed in Schedule of Prices. Each item includes all associated costs.

Bid Item No. A1: 54-Inch Steel Water Main by Open-Cut (LF)

- 1. Payment will be made per horizontal linear foot of installed 54-inch steel water main.
- 2. Payment includes all labor, equipment, and materials necessary for complete in-place installation of water main in open-cut trenches as shown on Drawings and in accordance with Specifications herein.
 - a. Includes excavation, trench safety, dewatering, bedding, pipe embedment, pipe fittings, appurtenances, butt straps, restrained joints, thrust blocks, buried warning/locating tape, test plugs/caps, hydrostatic testing, disinfection, support of existing utilities, and associated miscellaneous materials and work required. Includes removal, transport, and disposal of excess excavated material.
- 3. Measurement will be taken horizontally along centerline of water main installed, with no deductions for fittings or valves.

Bid Item No. A2: 54-Inch Steel Water Main by Trenchless Construction (LF)

- 1. Payment will be made per horizontal linear foot of trenchless construction.

2. Payment includes all labor, equipment, and materials necessary for complete in-place installation of water main and casing pipe/liner plate by trenchless construction as shown on Drawings and in accordance with Specifications herein.
 - a. Includes all related work such as construction of launch/receiving shafts ground support systems, dewatering activities, steel casing pipe or liner plate installation, CLSM backfill, trench backfill, instrumentation and monitoring, and restoration. Includes removal, transport, and disposal of excess excavated material.
 - b. Includes installation of steel water main in casing/liner plate and associated casing spacers, guide rails, invert, end seals/bulkheads, grouting, hydrostatic testing, disinfection, and associated miscellaneous materials and work required.
 - c. No separate payment will be made for trenchless construction exceeding length shown on Drawings, unless proposed modifications are submitted for review as part of Contractor's shop drawing submittals and accepted by Owner's Representative.
 - d. Payment for water main through shaft areas that do not require vertical drop structures will be made as part of associated open-cut bid item.
3. Measurement will be taken horizontally along centerline of steel casing/liner plate installed.

Bid Item No. B1: 54-Inch PCCP Water Main by Open-Cut (LF)

1. Payment will be made per horizontal linear foot of installed 54-inch PCCP water main.
2. Payment includes all labor, equipment, and materials necessary for complete in-place installation of water main in open-cut trenches as shown on Drawings and in accordance with Specifications herein.
 - a. Includes excavation, trench safety, dewatering, bedding, pipe embedment, pipe fittings, shorts, bevel adapters, appurtenances, closures, restrained joints, thrust blocks, buried warning/locating tape, test plugs/caps, hydrostatic testing, disinfection, support of existing utilities, and associated miscellaneous materials and work required. Includes removal, transport, and disposal of excess excavated material.
3. Measurement will be taken horizontally along centerline of water main installed, with no deductions for fittings or valves.

Bid Item No. B2: 54-Inch Steel Water Main by Trenchless Construction (LF)

1. See Bid Item No. A2 above for description.

Bid Item No. C1: 48-Inch Steel Water Main by Open-Cut (LF)

1. Payment will be made per horizontal linear foot of installed 48-inch steel water main.

2. Payment includes all labor, equipment, and materials necessary for complete in-place installation of water main in open-cut trenches as shown on Drawings and in accordance with Specifications herein.
 - a. Includes excavation, trench safety, dewatering, bedding, pipe embedment, pipe fittings, appurtenances, butt straps, restrained joints, thrust blocks, buried warning/locating tape, test plugs/caps, hydrostatic testing, disinfection, support of existing utilities, and associated miscellaneous materials and work required. Includes removal, transport, and disposal of excess excavated material.
3. Measurement will be taken horizontally along centerline of water main installed, with no deductions for fittings or valves.

Bid Item No. C2: 48-Inch Steel Water Main by Trenchless Construction (LF)

1. Payment will be made per horizontal linear foot of trenchless construction.
2. Payment includes all labor, equipment, and materials necessary for complete in-place installation of water main and casing pipe/liner plate by trenchless construction as shown on Drawings and in accordance with Specifications herein.
 - a. Includes all related work such as construction of launch/receiving shafts ground support systems, dewatering activities, steel casing pipe or liner plate installation, CLSM backfill, trench backfill, instrumentation and monitoring, and restoration. Includes removal, transport, and disposal of excess excavated material.
 - b. Includes installation of steel water main in casing/liner plate and associated casing spacers, guide rails, inverters, end seals/bulkheads, grouting, hydrostatic testing, disinfection, and associated miscellaneous materials and work required.
 - c. No separate payment will be made for trenchless construction exceeding length shown on Drawings, unless proposed modifications are submitted for review as part of Contractor's shop drawing submittals and accepted by Owner's Representative.
 - d. Payment for water main through shaft areas that do not require vertical drop structures will be made as part of associated open-cut bid item.
3. Measurement will be taken horizontally along centerline of steel casing/liner plate installed.

Bid Item No. D1: 48-Inch PCCP Water Main by Open-Cut (LF)

1. Payment will be made per horizontal linear foot of installed 48-inch PCCP water main.
2. Payment includes all labor, equipment, and materials necessary for complete in-place installation of water main in open-cut trenches as shown on Drawings and in accordance with Specifications herein.
 - a. Includes excavation, trench safety, dewatering, bedding, pipe embedment, pipe fittings, shorts, bevel adapters, appurtenances, closures, restrained joints, thrust blocks, buried warning/locating tape, test plugs/caps, hydrostatic testing, disinfection, support of existing utilities, and associated miscellaneous materials and work required. Includes removal, transport, and disposal of excess excavated material.
3. Measurement will be taken horizontally along centerline of water main installed, with no deductions for fittings or valves.

Bid Item No. D2: 48-Inch Steel Water Main by Trenchless Construction (LF)

1. See Bid Item No. C2 above for description.

Bid Item No. 1: Mobilization (LS)

1. Measurement and payment in lump sum for mobilization.
2. Payment limited to six percent of Total Bid Price.
3. Preparatory work and operations necessary for movement of personnel, equipment, supplies, and incidentals to Project Site for establishment of offices, buildings, and other facilities necessary for Work on Project, and for all other work or operations which must be performed, or costs incurred when beginning Project Work.

Bid Item No. 2: Temporary Field Office (MNTH)

1. Measurement and payment per month that temporary field office is supplied.
2. Mobile units or temporary buildings with potable water, sanitary facilities, electrical power, and parking facilities for use of Owner's Representative in administering Contract. Field office shall be situated in or near Work area at a location approved by Owner's Representative and Authority Having Jurisdiction, adjacent to Contractor's field office.

Bid Item No. 10: 48-Inch Butterfly Valve with Actuator Manhole (75th Street – STA 25+00) (Owner-Furnished Valve) (LS)

1. Payment will be made on a lump sum basis.
2. Payment includes all labor, equipment, and materials necessary for complete in place installation of 48-inch butterfly valve with actuator manhole as shown on Drawings and in accordance with Specifications herein.
3. Includes excavation, trench safety, support of existing utilities, dewatering, bedding, CLSM pipe embedment, pipe fittings, valves, appurtenances, pipe supports, structural concrete, precast manhole, sump pump with piping, and associated miscellaneous materials and work required. Includes removal, transport, and disposal of excess excavated material.
4. Includes installation of Owner-furnished 48-inch butterfly valve and manual actuator.
5. Includes Contractor-furnished and installed Limitorque L120 electric actuator.
6. Includes copper lines, fittings, valves and pressure transducer assemblies.
7. Includes all associated electrical equipment and improvements, telemetry antenna, Valmont steel pole, mast pole foundation, and SCADA controls.

Bid Item No. 11: 48-Inch Butterfly Valve with Actuator Manhole (75th Street – STA 29+25) (Owner-Furnished Valve) (LS)

1. Payment will be made on a lump sum basis.
2. Payment includes all labor, equipment, and materials necessary for complete in place installation of 48-inch butterfly valve with actuator manhole as shown on Drawings and in accordance with Specifications herein.
3. Includes excavation, trench safety, support of existing utilities, dewatering, bedding, CLSM pipe embedment, pipe fittings, valves, appurtenances, pipe supports, cast in-place structural concrete, precast manhole, sump pump with piping, and associated miscellaneous materials and work required. Includes removal, transport, and disposal of excess excavated material.

4. Includes installation of Owner-furnished 48-inch butterfly valve and manual actuator.
5. Includes Contractor-furnished and installed Limitorque L120 electric actuator.
6. Includes copper lines, fittings, valves and pressure transducer assemblies.
7. Includes all associated electrical equipment and improvements, telemetry antenna, Valmont steel pole, mast pole foundation, and SCADA controls.

Bid Item No. 12: 48-Inch Butterfly Valve with Actuator Manhole and Disinfection Bypass Assembly (Book Road) (Owner-Furnished Valve) (LS)

1. Payment will be made on a lump sum basis.
2. Payment includes all labor, equipment, and materials necessary for complete in place installation of 48-inch butterfly valve with actuator manhole, chemical vault, and disinfection bypass assembly as shown on Drawings and in accordance with Specifications herein.
3. Includes excavation, trench safety, support of existing utilities, dewatering, bedding, CLSM pipe embedment, pipe fittings, valves, appurtenances, pipe supports, cast-in-place structural concrete, two (2) precast manholes, and associated miscellaneous materials and work required. Includes removal, transport, and disposal of excess excavated material.
4. Includes installation of Owner-furnished 48-inch butterfly valve and actuator.
5. Includes injection quill assembly.

Bid Item No. 13: 54-Inch Butterfly Valve with Actuator Manhole (Owner-Furnished Valve) (EA)

1. Payment will be made for each valve with manhole installed.
2. Payment includes all labor, equipment, and materials necessary for complete in-place installation of 54-inch butterfly valve with actuator manhole as shown on Drawings and in accordance with Specifications herein.
3. Includes excavation, trench safety, support of existing utilities, dewatering, bedding, CLSM pipe embedment, pipe fittings, valves, appurtenances, pipe supports, cast-in-place structural concrete, precast manhole, and associated miscellaneous materials and work required. Includes removal, transport, and disposal of excess excavated material.
4. Includes installation of Owner-furnished 54-inch butterfly valve and manual actuator.

Bid Item No. 14: 54-Inch Remote Operated Butterfly Valve with Vault (Owner-Furnished Valve) (EA)

1. Payment will be made for each remote operated valve with vault installed.
2. Payment includes all labor, equipment, and materials necessary for complete in-place installation of 54-inch butterfly valve with actuator manhole as shown on Drawings and in accordance with Specifications herein.
3. Includes excavation, trench safety, support of existing utilities, dewatering, bedding, CLSM pipe embedment, pipe fittings, dismantling joint, valves, appurtenances, pipe supports, cast-in-place structural concrete, precast manhole, sump pump with piping, and associated miscellaneous materials and work required. Includes removal, transport, and disposal of excess excavated material.

4. Includes installation of Owner-furnished 54-inch butterfly valve and manual actuator.
5. Includes Contractor-furnished and installed Limitorque L120 electric actuator.
6. Includes copper lines, fittings, valves and pressure transducer assemblies.
7. Includes all associated electrical equipment and improvements, telemetry antenna, Valmont steel pole, mast pole foundation, and SCADA controls.

Bid Item No. 18: Air Release and Access Manhole (Type 1) (EA)

1. Payment will be made for each Type 1 air release & access manhole installed.
2. Payment includes all labor, equipment, and materials necessary for complete in-place installation of Type 1 air release and access manhole as shown on Drawings and in accordance with Specifications herein.
3. Includes excavation, trench safety, support of existing utilities, dewatering, bedding, concrete fill pipe encasement, pipe fittings, valves, appurtenances, precast manhole, and associated miscellaneous materials and work required. Includes removal, transport, and disposal of excess excavated material.

Bid Item No. 19: Air Release and Access Manhole (Type 2) (EA)

1. Payment will be made for each Type 2 air release & access manhole installed.
2. Payment includes all labor, equipment, and materials necessary for complete in-place installation of Type 2 air release and access manhole as shown on Drawings and in accordance with Specifications herein.
3. Includes excavation, trench safety, support of existing utilities, dewatering, bedding, concrete fill pipe encasement, pipe fittings, valves, appurtenances, precast manhole, and associated miscellaneous materials and work required. Includes removal, transport, and disposal of excess excavated material.

Bid Item No. 21: Blow-Off Valve with Manhole (36-Inch Dia. And Larger Pipe) (EA)

1. Payment will be made for each blow-off valve with manhole installed.
2. Payment includes all labor, equipment, and materials necessary for complete in-place installation of blow-off valve with manhole as shown on Drawings and in accordance with Specifications herein.
3. Includes excavation, trench safety, support of existing utilities, dewatering, bedding, CLSM pipe embedment, pipe fittings, valves, appurtenances, precast manhole, and associated miscellaneous materials and work required. Includes removal, transport, and disposal of excess excavated material.

**Bid Item No. 39: 48-Inch Steel Water Main by Open-Cut
(Book Road STA 752+60.00 to 756+64.30) (LF)**

1. Payment will be made per horizontal linear foot of installed 48-inch steel water main.
2. Payment includes all labor, equipment, and materials necessary for complete in-place installation of water main in open-cut trenches as shown on Drawings and in accordance with Specifications herein.
3. Includes excavation, trench safety, dewatering, bedding, pipe embedment, pipe fittings, appurtenances, butt straps, restrained joints, thrust blocks, buried warning/locating tape, test plugs/caps, hydrostatic testing, disinfection, support of existing utilities, and associated miscellaneous materials and work required. Includes removal, transport, and disposal of excess excavated material.

4. Measurement will be taken horizontally along centerline of water main installed, with no deductions for fittings or valves.

Bid Item No. 40: 48-Inch Steel Water Main by Trenchless Construction
(Book Road STA 756+64.30 to 758+52.24) (LF)

1. Payment will be made per horizontal linear foot of trenchless construction.
2. Payment includes all labor, equipment, and materials necessary for complete in-place installation of water main and casing pipe/liner plate by trenchless construction as shown on Drawings and in accordance with Specifications herein.
3. Includes all related work such as construction of launch/receiving shafts ground support systems, dewatering activities, steel casing pipe or liner plate installation, CLSM backfill, trench backfill, instrumentation and monitoring, and restoration. Includes removal, transport, and disposal of excess excavated material.
4. Includes installation of steel water main in casing/liner plate and associated casing spacers, guide rails, inverts, end seals/bulkheads, grouting, hydrostatic testing, disinfection, and associated miscellaneous materials and work required.
5. No separate payment will be made for trenchless construction exceeding length shown on Drawings, unless proposed modifications are submitted for review as part of Contractor's shop drawing submittals and accepted by Owner's Representative.
6. Payment for water main through shaft areas that do not require vertical drop structures will be made as part of associated open-cut bid item.
7. Measurement will be taken horizontally along centerline of steel casing/liner plate installed.

Bid Item No. 47: 75th Street Connection to Existing DWC 48-Inch PCCP
(STA 25+00) (LS)

1. Payment will be made on a lump sum basis.
2. Payment includes all labor, equipment, and materials necessary for complete in-place installation of steel water main connection to existing 48-inch PCCP line in open-cut trench as shown on Drawings and in accordance with Specifications herein.
3. Includes excavation, trench safety, dewatering, bedding, CLSM pipe embedment, pipe fittings, appurtenances, butt straps, PCCP bell/spigot adapters, restrained joints, thrust blocks, buried warning/locating tape, test plugs/caps, hydrostatic testing, disinfection, support of existing utilities, and associated miscellaneous materials and work required. Includes removal, transport, and disposal of excess excavated material. See Section 01 11 00 – SUMMARY OF WORK for phasing and schedule requirements.
4. Includes installation of 48-inch steel water main pipe and fittings.
5. Includes cutting and removal of existing 48-inch PCCP water main, connections to 48-inch PCCP, as well as repair of cement mortar lining on remaining pipe damaged during removal.

Bid Item No. 48: 75th Street Connection to Existing DWC 48-Inch PCCP (STA 26+22) (LS)

1. Payment will be made on a lump sum basis.

2. Payment includes all labor, equipment, and materials necessary for complete in-place installation of steel water main connection to existing 48-inch PCCP line in open-cut trench as shown on Drawings and in accordance with Specifications herein.
3. Includes excavation, trench safety, dewatering, bedding, CLSM pipe embedment, pipe fittings, appurtenances, butt straps, PCCP bell/spigot adapters, restrained joints, thrust blocks, buried warning/locating tape, test plugs/caps, hydrostatic testing, disinfection, support of existing utilities, and associated miscellaneous materials and work required. Includes removal, transport, and disposal of excess excavated material. See Section 01 11 00 – SUMMARY OF WORK for phasing and schedule requirements.
4. Includes installation of 48-inch steel water main pipe and fittings.
5. Includes cutting and removal of existing 48-inch PCCP water main, connections to 48-inch PCCP, as well as repair of cement mortar lining on remaining pipe damaged during removal.

Bid Item No. 49: 75th Street Connection to Existing DWC 48-Inch PCCP (STA 29+25) (LS)

1. Payment will be made on a lump sum basis.
2. Payment includes all labor, equipment, and materials necessary for complete in-place installation of steel water main connection to existing 48-inch PCCP line in open-cut trench as shown on Drawings and in accordance with Specifications herein.
3. Includes excavation, trench safety, dewatering, bedding, CLSM pipe embedment, pipe fittings, appurtenances, butt straps, PCCP bell/spigot adapters, restrained joints, thrust blocks, buried warning/locating tape, test plugs/caps, hydrostatic testing, disinfection, support of existing utilities, and associated miscellaneous materials and work required. Includes removal, transport, and disposal of excess excavated material. See Section 01 11 00 – SUMMARY OF WORK for phasing and schedule requirements.
4. Includes installation of 48-inch cement mortar coated steel water main pipe and fittings.
5. Includes cutting and removal of existing 48-inch PCCP water main, connections to 48-inch PCCP, as well as repair of cement mortar lining on remaining pipe damaged during removal.
6. Includes cutting, removal, and replacement of existing 34-inch x 53-inch elliptical RCP storm culvert, connections to existing culvert, bypass pumping (as required), CLSM embedment, and regrading of storm ditches.

Bid Item No. 50: 30-Inch Stub for Future Connection (LS)

1. Measurement and payment by lump sum per installed 30-inch stub for future connection.

2. Includes 30-inch pipe (ductile iron pipe, steel pipe, or prestressed concrete cylinder pipe at Contractor's option) installed in open-cut trench, connection to reducer on main water line, 30-inch butterfly valve with actuator manhole, and 30-inch dished head plug at location shown in Drawings. All materials (including fittings and joint restraint), labor, equipment, excavation, sheeting, shoring, dewatering, bedding, backfill, compaction, pipe embedment, utility repair, welding, testing, disinfection, polyethylene encasement (if DI pipe is selected), gaskets, underground warning tape, restrained mechanical joints, valve with operator, associated joint restraints inside vault, restrained joints on water main bell, spigot slip joints external to valve vault, valve vault with frame and lid, steps, appurtenances shown in Detail, and associated miscellaneous materials and work required to furnish and install 30-inch stub for future connection.
3. Trench backfill and compaction above pipe embedment is also included as shown on Drawings. Does not include reducer. Includes removal, transporting, and disposal of excess excavated material.

Bid Item No. 52: Remove 54-Inch Test Plug and Connect to 54-Inch Water Main (Adjacent Contract) (EA)

1. Payment will be made for each test plug removed with water main connection.
2. Payment includes all labor, equipment, and materials necessary for test plug removal and connection as shown on Drawings and in accordance with Specifications herein.
3. Includes pipe fittings, appurtenances, dewatering of adjacent pipe, repair of damaged linings, connection to water main on adjacent contract, disinfection, hydrostatic testing of connection, and associated miscellaneous materials and work required.
4. No separate payment for removal of intermediate test plugs used on this Contract for hydrostatic testing.

Bid Item No. 53: Trench Backfill (Select Material) (CY)

1. Payment will be made per cubic yard of trench backfill placed.
2. Payment includes all labor, equipment, and materials necessary for complete placement and compaction of trench backfill above pipe embedment zone as shown on Drawings and in accordance with Specifications herein.
3. Includes compacted IDOT CA-6, FA-6, or CLSM material and removal, transport, and disposal of excess excavated material.
4. Measurement will be subject to maximum trench width for payment shown on Drawings.

Bid Item No. 55: Cathodic Protection System (LS)

1. Payment will be made on a lump sum basis.
2. Payment includes all labor, equipment, materials, and supervision for the installation of the cathodic protection system, complete in-place, including sacrificial anodes, test stations, junction boxes, power feed hookups, excavation, backfill, field welding, connections, adjustments, testing, commissioning, cleanup, and other related work necessary for construction as shown on Drawings and in accordance with Specifications herein.

Bid Item No. 56: Earth Excavation (CY)

1. Measurement and payment per cubic yard of earth excavated.

2. Work under this item to be completed according to IDOT Section 202. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 57: Aggregate Base Course, Type B 2-Inch (SY)

1. Measurement and payment per square yard of aggregate base course, Type B, 2-inch applied.
2. Work under this item to be completed according to IDOT Section 351. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 58: Aggregate Base Course, Type B 4-Inch (SY)

1. Measurement and payment per square yard of aggregate base course, Type B, 4-inch applied.
2. Work under this item to be completed according to IDOT Section 351. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 59: Aggregate Base Course, Type B 6-Inch (SY)

1. Measurement and payment per square yard of aggregate base course, Type B, 6-inch applied.
2. Work under this item to be completed according to IDOT Section 351. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 61: Bituminous Materials (Prime Coat) (LB)

1. Measurement and payment per pound of bituminous materials, prime coat, applied.
2. Work under this item to be completed according to IDOT Section 406.

Bid Item No. 62: Bituminous Materials (Tack Coat) (LB)

1. Measurement and payment per pound of bituminous materials, tack coat, applied.
2. Work under this item to be completed according to IDOT Section 406.

Bid Item No. 63: Hot-Mix Asphalt Binder Course, IL-19.0, N50 (TON)

1. Measurement and payment per ton of hot-mix asphalt binder course applied.
2. Work under this item to be completed according to IDOT Section 406. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 65: Hot-Mix Asphalt Surface Course, IL-9.5, Mix D, N50 (TON)

1. Measurement and payment per ton of hot-mix asphalt surface course applied.
2. Work under this item to be completed according to IDOT Section 406. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 72: Portland Cement Concrete Driveway Pavement, 8-Inch (SY)

1. Measurement and payment per square yard of driveway pavement installed.

2. Work under this item to be completed according to IDOT Section 423. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 74: Portland Cement Concrete Sidewalk, 6-Inch (SF)

1. Measurement and payment per square foot of sidewalk installed.
2. Work under this item to be completed according to IDOT Section 424. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 75: Detectable Warnings (SF)

1. Measurement and payment per square foot of detectable warnings installed.
2. Work under this item to be completed according to IDOT Section 424. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 76: Pavement Removal (SY)

1. Measurement and payment per square yard of pavement removal.
2. Work under this item to be completed according to IDOT Section 440. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 78: Hot-Mix Asphalt Surface Removal, 1 3/4-Inch (SY)

1. Measurement and payment per square yard of asphalt surface removal.
2. Work under this item to be completed according to IDOT Section 440. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 79: Driveway Pavement Removal (SY)

1. Measurement and payment per square yard of driveway pavement removal.
2. Work under this item to be completed according to IDOT Section 440. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 80: Combination Curb and Gutter Removal (LF)

1. Measurement and payment per foot of combination curb and gutter removal.
2. Work under this item to be completed according to IDOT Section 440. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 81: Sidewalk Removal (SF)

1. Measurement and payment per square foot of sidewalk removal.
2. Work under this item to be completed according to IDOT Section 440. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 83: Combination Concrete Curb and Gutter, Type B-6.12 (LF)

1. Measurement and payment per foot of combination curb and gutter installed.
2. Work under this item to be completed according to IDOT Section 606. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 88: Steel Plate Beam Guardrail, Type A, 6-Foot Posts (LF)

1. Measurement and payment per foot of guardrail installed.
2. Work under this item to be completed according to IDOT Section 630.

Bid Item No. 89: Long-Span Guardrail over Culvert, 12-Foot 6-Inch Span (LF)

1. Measurement and payment per foot of guardrail installed.
2. Work under this item to be completed according to IDOT Section 630.

Bid Item No. 90: Traffic Barrier Terminal, Type 1B (EA)

1. Measurement and payment per each traffic barrier terminal, Type 1B installed.
2. Work under this item to be completed according to IDOT Section 631.

Bid Item No. 91: Traffic Barrier Terminal, Type 2 (EA)

1. Measurement and payment per each traffic barrier terminal, Type 2 installed.
2. Work under this item to be completed according to IDOT Section 631.

Bid Item No. 92: Guardrail Removal (LF)

1. Measurement and payment per foot of guardrail removed.
2. Work under this item to be completed according to IDOT Section 632.

Bid Item No. 93: Pavement Marking Blackout Tape, 6-Inch (LF)

1. Measurement and payment per foot of 6-inch pavement marking tape applied
2. Work under this item to be completed according to IDOT Section 701. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 94: Changeable Message Sign (CAL DAY)

1. Measurement and payment per calendar day changeable message sign is supplied.
2. Work under this item to be completed according to IDOT Section 701.

Bid Item No. 95: Short Term Pavement Marking (LF)

1. Measurement and payment per foot of short term pavement marking applied.
2. Work under this item to be completed according to IDOT Section 703. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 96: Short Term Pavement Marking Removal (SF)

1. Measurement and payment per square foot of short term pavement marking removal.
2. Work under this item to be completed according to IDOT Section 703. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 97: Temporary Pavement Marking Letters and Symbols – Paint (SF)

1. Measurement and payment per square foot of pavement marking applied.
2. Work under this item to be completed according to IDOT Section 703.

Bid Item No. 98: Temporary Pavement Marking – Line 4-Inch – Paint (LF)

1. Measurement and payment per foot of pavement marking applied.

2. Work under this item to be completed according to IDOT Section 703.

Bid Item No. 100: Temporary Pavement Marking – Line 24-Inch – Paint (LF)

1. Measurement and payment per foot of pavement marking applied.
2. Work under this item to be completed according to IDOT Section 703.

Bid Item No. 101: Temporary Pavement Marking – Line 4-Inch – Type IV Tape (LF)

1. Measurement and payment per foot of pavement marking applied
2. Work under this item to be completed according to IDOT Section 703. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 103: Temporary Concrete Barrier (LF)

1. Measurement and payment per foot temporary concrete barrier placed.
2. Work under this item to be completed according to IDOT Section 704. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 104: Impact Attenuators, Temporary (Fully Redirective, Narrow), Test Level 2 (EA)

1. Measurement and payment per each impact attenuator placed.
2. Work under this item to be completed according to IDOT Section 706.

Bid Item No. 105: Relocate Sign Panel Assembly – Type A (EA)

1. Measurement and payment per each sign panel relocated.
2. Work under this item to be completed according to IDOT Section 724. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 106: Thermoplastic Pavement Marking - Letters and Symbols (SF)

1. Measurement and payment per square foot of thermoplastic pavement marking applied.
2. Work under this item to be completed according to IDOT Section 780.

Bid Item No. 107: Thermoplastic Pavement Marking – Line 4-Inch (LF)

1. Measurement and payment per foot of thermoplastic pavement marking applied.
2. Work under this item to be completed according to IDOT Section 780.

Bid Item No. 108: Thermoplastic Pavement Marking – Line 6-Inch (LF)

1. Measurement and payment per foot of thermoplastic pavement marking applied.
2. Work under this item to be completed according to IDOT Section 780.

Bid Item No. 109: Thermoplastic Pavement Marking – Line 12-Inch (LF)

1. Measurement and payment per foot of thermoplastic pavement marking applied.
2. Work under this item to be completed according to IDOT Section 780.

Bid Item No. 110: Thermoplastic Pavement Marking – Line 24-Inch (LF)

1. Measurement and payment per foot of thermoplastic pavement marking applied.
2. Work under this item to be completed according to IDOT Section 780.

Bid Item No. 111: Pavement Marking Removal –Grinding (SF)

1. Measurement and payment per square foot of pavement marking removal.
2. Work under this item to be completed according to IDOT Section 783.

Bid Item No. 112: Underground Conduit, Galvanized Steel, 2-Inch Dia. (LF)

1. Measurement and payment per foot of underground conduit installed.
2. Work under this item to be completed according to IDOT Section 810. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 113: Handhole (EA)

1. Measurement and payment per each handhole installed.
2. Work under this item to be completed according to IDOT Section 814. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 114: Maintenance of Existing Traffic Signal Installation (EA)

1. Measurement and payment per each maintenance of existing traffic signal installation.
2. Work under this item to be completed according to IDOT Section 850. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 115: Electric Cable in Conduit, Lead-In, No. 14, One Pair (LF)

1. Measurement and payment per foot of cable in conduit installed.
2. Work under this item to be completed according to IDOT Section 873. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 116: Drill Existing Handhole (EA)

1. Measurement and payment per each existing handhole drilled.
2. Work under this item to be completed according to IDOT Section 879.

Bid Item No. 117: Detector Loop, Type 1 (LF)

1. Measurement and payment per foot of detector loop Type 1 installed.
2. Work under this item to be completed according to IDOT Section 886. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 118: Detector Loop Replacement (LF)

1. Measurement and payment per foot of detector loop replacement.
2. Work under this item to be completed according to IDOT Section 886. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 119: Temporary Traffic Signal Installation (EA)

1. Measurement and payment per each temporary traffic signal installation.
2. Work under this item to be completed according to IDOT Section 890. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 120: Modify Existing Controller (EA)

1. Measurement and payment per each Existing Controller modified.
2. Work under this item to be completed according to IDOT Section 895. See full requirements as specified in Division 34, General Civil Special Provisions.

Bid Item No. 122: Remove Existing Handhole (EA)

1. Measurement and payment per each existing handhole removed.
2. Work under this item to be completed according to IDOT Section 895.

Bid Item No. 123: Class D Patches, 12-Inch (SY)

1. Measurement and payment per square yard of Class D patches installed.
2. Work under this item to be completed according to IDOT Section 442. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 125: Mailbox Remove and Replace (EA)

1. Measurement and payment per each mailbox removed and replaced.
2. Work under this item to be completed according to IDOT Section 107. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 127: Temporary Access (Private Entrance) (EA)

1. Measurement and payment per each private entrance with temporary access.
2. Work under this item to be completed according to IDOT Section 402. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 128: Temporary Access (Commercial Entrance) (EA)

1. Measurement and payment per each commercial entrance with temporary access.
2. Work under this item to be completed according to IDOT Section 402. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 129: Temporary Access (Road) (EA)

1. Measurement and payment per each road with temporary access.
2. Work under this item to be completed according to IDOT Section 402. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 130: Traffic Control and Protection, (Special) (LS)

1. Measurement and payment by lump sum for traffic control and protection.
2. Work under this item to be completed according to IDOT Section 701. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 131: Hot-Mix Asphalt Driveway Pavement, 4-Inch (SY)

1. Measurement and payment per square yard of driveway pavement installed.

2. Work under this item to be completed according to IDOT Section 406. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 133: Drainage and Utility Structures to be Adjusted (EA)

1. Measurement and payment per each adjusted drainage and utility structure.
2. Work under this item to be completed according to IDOT Section 602. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 134: Drainage and Utility Structures to be Reconstructed (EA)

1. Measurement and payment per each reconstructed drainage and utility structure.
2. Work under this item to be completed according to IDOT Section 602. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 135: Temporary Information Signing (SF)

1. Measurement and payment per square foot of temporary information signing.
2. Work under this item to be completed according to IDOT Sections 701 and 720. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 136: Temporary Pavement (SY)

1. Measurement and payment per square yard of temporary pavement.
2. Work under this item to be completed according to IDOT Sections 355, 356, 406, and 440. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 137: Temporary Traffic Signal Timing (EA)

1. Measurement and payment per each temporary traffic signal timing.
2. Work under this item to be completed according to IDOT Section 701. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 138: Hot-Mix Asphalt Surface Removal –Butt Joint (SY)

1. Measurement and payment per square yard of butt joint surface removal.
2. Work under this item to be completed according to IDOT Section 406.

Bid Item No. 139: Telescoping Steel Sign Support (LF)

1. Measurement and payment per foot of sign support.
2. Work under this item to be completed according to IDOT Section 728. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 140: Metal Post – Type A (LF)

1. Measurement and payment per foot of Type A metal post installed.
2. Work under this item to be completed according to IDOT Section 729. See full requirements as specified in Division 34 – GENERAL CIVIL SPECIAL PROVISIONS.

Bid Item No. 141: Erosion Control Seeding, Lawn Mixture (Class 1) (LB)

1. Payment per pound of seed placed as required by area.
2. Measurement per area shown on Drawings, measured by Contractor survey On-site.
3. Material, equipment, labor, and associated miscellaneous work required for installation and removal (if necessary) of temporary erosion control seeding as shown on Drawings. See full requirements as specified in Section 01 45 33-13 – STORM WATER POLLUTION PREVENTION PLAN.

Bid Item No. 142: Erosion Control Seeding, Roadside Mixture (Class 2) (LB)

1. Payment per pound of seed placed as required by area.
2. Measurement per area shown on Drawings, measured by Contractor On-site.
3. Material, equipment, labor, and associated miscellaneous work required for installation and removal (if necessary) of temporary erosion control seeding as shown on Drawings. See full requirements as specified in 01 45 33-13 – STORM WATER POLLUTION PREVENTION PLAN.

Bid Item No. 145: High Visibility Safety Fence (LF)

1. Measurement and payment per foot of safety fence placed as shown on Drawings, measured by Contractor on Site.
2. Material, equipment, labor, and associated miscellaneous work required for installation of temporary fence as shown on Drawings. See full requirements as specified in 01 45 33-13 – STORM WATER POLLUTION PREVENTION PLAN.

Bid Item No. 146: Tree and Shrubbery Protection (EA)

1. Measurement and payment per each tree trunk protection installed.
2. Material, equipment, labor, and associated miscellaneous work required for installation and removal of tree trunk protection as shown on Drawings. See full requirements as specified in 01 45 33-13 – STORM WATER POLLUTION PREVENTION PLAN.

Bid Item No. 150: Dual Fence Barrier (High-Visibility Geotextile Outer Fence) (LF)

1. Measurement and payment per foot of dual fence placed as shown on Drawings, measured by Contractor on Site.
2. Material, equipment, labor, and associated miscellaneous work required for installation of dual layer silt fence in accordance with DuPage County Stormwater Ordinance Article VII. See full requirements as specified in 01 45 33-13 – STORM WATER POLLUTION PREVENTION PLAN.

Bid Item No. 151: Silt Fence (LF)

1. Measurement and payment per foot of dual fence placed as shown on Drawings, measured by Contractor on Site.
2. Material, equipment, labor, and associated miscellaneous work required for installation of silt fence in accordance with DuPage County Stormwater Ordinance Article VII. See full requirements as specified in 01 45 33-13 – STORM WATER POLLUTION PREVENTION PLAN.

Bid Item No. 152: Inlet Protection, Curb (EA)

1. Measurement and payment per each curb inlet protected.
2. Material, equipment, labor, and miscellaneous work required for installation of curb inlet protection for stormwater inlets located in existing curb and gutter. See full requirements as specified in 01 45 33-13 – STORM WATER POLLUTION PREVENTION PLAN.

Bid Item No. 153: Inlet Protection, Area (EA)

1. Measurement and payment per each inlet protected.
2. Material, equipment, labor, and miscellaneous work required for installation of inlet protection for stormwater inlets not located in existing curb and gutter. See full requirements as specified in 01 45 33-13 – STORM WATER POLLUTION PREVENTION PLAN.

Bid Item No. 163: Remove and Replace 8-Inch Sanitary Sewer (with AWWA C900 DR 25 PVC Pipe) (LF)

1. Measurement and payment per foot of installed 8-inch sanitary sewer. Length will be measured along centerline of pipe with no deduction for manholes. Sewer connections to existing sewer structures will be paid for under Bid Item No. 192.
2. Material, labor, excavation, sheeting, shoring, dewatering, bedding, backfill, compaction, utility repair, testing, and associated miscellaneous work required to remove existing sanitary sewer and furnish and install replacement water main quality sanitary sewer of same size. Includes removal, transporting, and disposal of removed sewer material and excess excavated material, piping and pumping for bypassing sewage flow as necessary to maintain service, and connections to existing sewer piping, including adaptors and couplings as necessary to connect to existing.

Bid Item No. 171: Remove and Replace 18-Inch FES (EA)

1. Measurement and payment per each flared end section (FES) removed and replaced.
2. Material, labor, excavation, sheeting, shoring, dewatering, bedding, trench backfill, compaction, and associated miscellaneous work required to remove flared end section and furnish and install replacement flared end section to match existing conditions. Includes removal, transporting, and disposal of removed flared end section material and excess excavated material.

Bid Item No. 176: Replace 10-Inch Storm sewer (with AWWA C900 DR 25 PVC Pipe) (LF)

1. Measurement and payment per foot of installed 10-inch storm sewer. Length will be measured along centerline of pipe with no deduction for manholes. Sewer connections to existing sewer structures will be paid for under Connection to Existing Structure.
2. Material, labor, excavation, sheeting, shoring, dewatering, bedding, backfill, compaction, utility repair, testing, and associated miscellaneous work required to remove existing storm sewer and furnish and install replacement water main quality storm sewer of same size. Includes removal, transporting, and disposal of removed sewer material and excess excavated material, piping and pumping for bypassing sewage flow as necessary to maintain service, and connections to existing sewer piping, including adaptors and couplings as necessary to connect to existing.

Bid Item No. 177: Replace 12-Inch Storm Sewer (with AWWA C900 DR 25 PVC Pipe) (LF)

1. Measurement and payment per foot of installed 12-inch storm sewer. Length will be measured along centerline of pipe with no deduction for manholes. Sewer connections to existing sewer structures will be paid for under Connection to Existing Structure.
2. Material, labor, excavation, sheeting, shoring, dewatering, bedding, backfill, compaction, utility repair, testing, and associated miscellaneous work required to remove existing storm sewer and furnish and install replacement water main quality storm sewer of same size. Includes removal, transporting, and disposal of removed sewer material and excess excavated material, piping and pumping for bypassing sewage flow as necessary to maintain service, and connections to existing sewer piping, including adaptors and couplings as necessary to connect to existing.

Bid Item No. 178: Replace 15-Inch Storm Sewer (with AWWA C900 DR 25 PVC Pipe) (LF)

1. Measurement and payment per foot of installed 15-inch storm sewer. Length will be measured along centerline of pipe with no deduction for manholes. Sewer connections to existing sewer structures will be paid for under Connection to Existing Structure.
2. Material, labor, excavation, sheeting, shoring, dewatering, bedding, backfill, compaction, utility repair, testing, and associated miscellaneous work required to remove existing storm sewer and furnish and install replacement water main quality storm sewer of same size. Includes removal, transporting, and disposal of removed sewer material and excess excavated material, piping and pumping for bypassing sewage flow as necessary to maintain service, and connections to existing sewer piping, including adaptors and couplings as necessary to connect to existing.

Bid Item No. 180: Replace 18-Inch Storm Sewer (with AWWA C900 DR 25 PVC Pipe) (LF)

1. Measurement and payment per foot of installed 18-inch storm sewer. Length will be measured along centerline of pipe with no deduction for manholes. Sewer connections to existing sewer structures will be paid for under Connection to Existing Structure.
2. Material, labor, excavation, sheeting, shoring, dewatering, bedding, backfill, compaction, utility repair, testing, and associated miscellaneous work required to remove existing storm sewer and furnish and install replacement water main quality storm sewer of same size. Includes removal, transporting, and disposal of removed sewer material and excess excavated material, piping and pumping for bypassing sewage flow as necessary to maintain service, and connections to existing sewer piping, including adaptors and couplings as necessary to connect to existing.

Bid Item No. 182: Replace 24-Inch Storm Sewer (with AWWA C900 DR 25 PVC Pipe) (LF)

1. Measurement and payment per foot of installed 24-inch storm sewer. Length will be measured along centerline of pipe with no deduction for manholes. Sewer connections to existing sewer structures will be paid for under Connection to Existing Structure.

2. Material, labor, excavation, sheeting, shoring, dewatering, bedding, backfill, compaction, utility repair, testing, and associated miscellaneous work required to remove existing storm sewer and furnish and install replacement water main quality storm sewer of same size. Includes removal, transporting, and disposal of removed sewer material and excess excavated material, piping and pumping for bypassing sewage flow as necessary to maintain service, and connections to existing sewer piping, including adaptors and couplings as necessary to connect to existing.

Bid Item No. 190: Remove and Replace 30-Inch Storm Culvert with 30-Inch CMP Culvert (LF)

1. Measurement and payment per foot of installed culvert. Length will be measured along centerline of pipe.
2. Material, labor, excavation, sheeting, shoring, dewatering, bedding, trench backfill, compaction, utility repair, testing, and associated miscellaneous work required to furnish and install replacement storm culvert of class, type, and size specified. Includes removal, transporting, and disposal of excess excavated material.

Bid Item No. 191: Remove and Replace Catch Basin (EA)

1. Measurement and payment per each catch basin replaced.
2. Material, labor, excavation, sheeting, shoring, dewatering, bedding, backfill, compaction, utility repair, testing, and associated miscellaneous work required to remove existing catch basin and furnish and install replacement catch basin and frame and grate, to match existing conditions, including adaptors, couplings, and boots as necessary to connect to existing. Includes removal, transporting, and disposal of removed catch basin material and excess excavated material.

Bid Item No. 195: Remove and Replace Inlet (EA)

1. Measurement and payment per each inlet replaced.
2. Material, labor, excavation, sheeting, shoring, dewatering, bedding, backfill, compaction, utility repair, testing, and associated miscellaneous work required to remove existing inlet and furnish and install replacement catch basin and frame and grate, to match existing conditions, including adaptors, couplings, and boots as necessary to connect to existing. Includes removal, transporting, and disposal of removed material and excess excavated material.

Bid Item No. 196: Connection to Existing Sewer Structure (EA)

1. Measurement and payment per each connection to existing structure.
2. Material, labor, excavation, sheeting, shoring, dewatering, bedding, backfill, compaction, utility repair, testing, and associated miscellaneous work required to furnish and install connection to existing structure at locations as shown on Drawings including adaptors, couplings, watertight boots, concrete collars, and waterstops as necessary to connect to existing. Includes removal, transporting, and disposal of excess excavated material.

Bid Item No. 197: Remove and Replace Dual Storm Culverts 36-Inch and Headwalls (LS)

1. Measurement and payment by lump sum for the culverts and headwalls removal and replacement.
2. Material, labor, excavation, sheeting, shoring, dewatering, bedding, trench backfill, compaction, utility repair, testing, replacement of concrete headwalls, riprap, and associated miscellaneous work required to remove existing culvert and furnish and install replacement storm culvert of class, type, and size specified. Includes removal, transporting, and disposal of excess excavated material.

Bid Item No. 198: Crossing Existing 58-Inch by 91-Inch Elliptical Concrete Pipe (Book Road) (LS)

1. Measurement and payment by lump sum for completed crossing.
2. All material, equipment, labor, and associated miscellaneous materials and work required to furnish and install 54-inch water main under an existing crossing existing 58- by 91-inch elliptical concrete pipe. Labor and materials required will vary based on the option selected for the crossing, but could include 84-inch steel casing, replacement elliptical O-ring gasket RCP, or structural liner for the elliptical pipe, additional excavation, sheeting, shoring, dewatering, bedding, backfill, compaction, and all associated miscellaneous materials and labor. This item does not include the cost of the 54-inch water main pipe or associated items paid under 54-Inch Water Main by Open Cut Bid Item description of chosen material. Includes removal, transporting, and disposal of excess excavated material.

Bid Item No. 210: Vertical Drop Structures (STA 619+71 and STA 623+24) (LS)

1. Payment will be made on a lump sum basis.
2. Payment includes all labor, equipment, and materials necessary for complete in-place installation of water main vertical drop piping within two trenchless shafts (launch and receiving) as shown on Drawings and in accordance with Specifications herein.
3. Includes all related work such as vertical steel pipe, tees, fittings, appurtenances, butt straps, dished head plug, concrete fill, pipe support foundation, thrust blocks, fall protection, hydrostatic testing, disinfection, and associated miscellaneous materials and work required.
4. Includes blind flange, flanged outlet, gate valve, appurtenances, and precast concrete access structure.
5. Payment for pipe beyond the end of the tee branch and outside of trenchless liner will be made as part of associated open-cut bid items.

Bid Item No. 211: Vertical Drop Structures (STA 677+21 and STA 679+55) (LS)

1. Payment will be made on a lump sum basis.
2. Payment includes all labor, equipment, and materials necessary for complete in-place installation of water main vertical drop piping within two trenchless shafts (launch and receiving) as shown on Drawings and in accordance with Specifications herein.
3. Includes all related work such as vertical steel pipe, tees, fittings, appurtenances, butt straps, dished head plug, concrete fill, pipe support foundation, thrust blocks, fall protection, hydrostatic testing, disinfection, and associated miscellaneous materials and work required.

4. Includes blind flange, flanged outlet, gate valve, appurtenances, and precast concrete access structure.
5. Payment for pipe beyond the end of the tee branch and outside of trenchless liner will be made as part of associated open-cut bid items.

Bid Item No. 212: Vertical Drop Structures (STA 700+39 and STA 708+30) (LS)

1. Payment will be made on a lump sum basis.
2. Payment includes all labor, equipment, and materials necessary for complete in-place installation of water main vertical drop piping within two trenchless shafts (launch and receiving) as shown on Drawings and in accordance with Specifications herein.
3. Includes all related work such as vertical steel pipe, tees, fittings, appurtenances, butt straps, dished head plug, concrete fill, pipe support foundation, thrust blocks, fall protection, hydrostatic testing, disinfection, and associated miscellaneous materials and work required.
4. Includes blind flange, flanged outlet, gate valve, appurtenances, and precast concrete access structure.
5. Payment for pipe beyond the end of the tee branch and outside of trenchless liner will be made as part of associated open-cut bid items.

Bid Item No. 213: Vertical Drop Structures (STA 724+89 and STA 726+79) (LS)

1. Payment will be made on a lump sum basis.
2. Payment includes all labor, equipment, and materials necessary for complete in-place installation of water main vertical drop piping within two trenchless shafts (launch and receiving) as shown on Drawings and in accordance with Specifications herein.
3. Includes all related work such as vertical steel pipe, tees, fittings, appurtenances, butt straps, dished head plug, concrete fill, pipe support foundation, thrust blocks, fall protection, hydrostatic testing, disinfection, and associated miscellaneous materials and work required.
4. Includes blind flange, flanged outlet, gate valve, appurtenances, and precast concrete access structure.
5. Payment for pipe beyond the end of the tee branch and outside of trenchless liner will be made as part of associated open-cut bid items.

Bid Item No. IND1: Exploratory Excavation (CF)

1. Measurement and payment per cubic foot of exploratory excavation.
2. Material, labor, excavation, sheeting, shoring, dewatering, backfill, compaction, utility repair, and associated miscellaneous work required to excavate for underground investigation by traditional excavation means, as directed by Owner's Representative. Includes removal, transporting, and disposal of excavated material.

Bid Item No. IND2: Exploratory Excavation, Vacuum (EA)

1. Measurement and payment for each vacuum exploratory excavation.
2. Material, labor, excavation, sheeting, shoring, dewatering, backfill, compaction, utility repair, and associated miscellaneous work required to excavate for underground investigation by vacuum excavation, as directed by Owner's Representative. Includes removal, transporting, and disposal of excavated material.

Bid Item No. IND3: Adjust Water Service Line (LF)

1. Measurement and payment per linear foot of water service line adjusted. Length will be measured along centerline of pipe.
2. Material, labor, excavation, sheeting, shoring, dewatering, bedding, backfill, compaction, utility repair, testing, disinfection, pipe, fittings, couplings, connections to remaining existing service line, and additional miscellaneous work required to adjust water service line, as directed by Owner's Representative. Includes removal, transporting, and disposal of excess excavated material.

Bid Item No. IND4: Adjust Sewer Service Line (LF)

1. Measurement and payment per linear foot of sewer service line adjusted. Length will be measured along centerline of pipe.
2. Material, labor, excavation, sheeting, shoring, dewatering, bedding, backfill, compaction, utility repair, testing, disinfection, pipe, fittings, couplings, connections to remaining existing service line, and additional miscellaneous work required to adjust sewer service line, as directed by Owner's Representative. Includes removal, transporting, and disposal of excess excavated material.

Bid Item No. ALL1: Allowance: City of Naperville DPU-E Electric Services

1. Allowance for payment to City of Naperville DPU-E for providing new 100A electrical services to:
 - a. Two Contractor-furnished and installed free standing meter pedestals at Book Road and 75th Street intersection.
 - b. One Contractor-furnished and installed panel mounted meter along Book Road (STA 602+46).
 - 1) City of Naperville to furnish and install 25kVA transformer (120/240V, 1P) at this location.
2. Allowance is for City of Naperville charges for electrical service only. Payment for all other Contractor-furnished materials, labor, and equipment and overhead/profit shall be made under applicable remote operated valve bid items.
3. Any unused portion of allowance will be credited back to Owner. Any additional cost shall be reimbursed to Contractor by Final Change Order.

PART 2 - P R O D U C T S

NOT USED

PART 3 - E X E C U T I O N

NOT USED

END OF SECTION

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- ALL SIGNS, BARRICADES, SIGN LIGHTS & FLAGS SHALL BE IN ACCORDANCE WITH CONDITIONS INDICATED IN TRAFFIC CONTROL STANDARDS FOR MUTCD & STANDARD SPECIFICATIONS.
- THE DUPAGE COUNTY DEPARTMENT OF TRANSPORTATION & HIGHWAYS, ILLINOIS DEPARTMENT OF TRANSPORTATION, CITY OF NAPERVILLE AND THE NAPERVILLE TOWNSHIP ROAD DISTRICT SHALL BE NOTIFIED TWO (2) WEEKS IN ADVANCE PRIOR TO THE OPERATION OF THE DETOUR ROUTES FOR THE SUBJECT CONSTRUCTION.
- "D3-1" SIGNS SHALL HAVE 5" BLACK LETTERING ON FLUORESCENT ORANGE BACKGROUND.
- TRAFFIC CONTROL AND PROTECTION, INCLUDING DETOUR PLAN/ROUTING, SHALL BE PERFORMED IN ACCORDANCE WITH THE SPECIAL PROVISIONS FOR THIS PROJECT, SECTION 701 OF THE IDOT "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", APPLICABLE GUIDELINES IN THE "ILLINOIS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS", AND APPLICABLE HIGHWAY STANDARDS FOR TRAFFIC CONTROL.
- PRIOR TO THE START OF CONSTRUCTION, REQUIRED TRAFFIC CONTROL DEVICES SHALL BE IN PLACE.
- IDOT TRAFFIC CONTROL STANDARDS LISTED BY REFERENCE IN THE SPECIAL PROVISIONS SHALL BE USED AS GUIDES IN IMPLEMENTING TRAFFIC CONTROL, INCLUDING SIGN LOCATIONS, FOR THIS PROJECT.
- THE CONTRACTOR SHALL PROVIDE THE OWNER'S REPRESENTATIVE WITH THE NAMES AND PHONE NUMBERS OF HIS REPRESENTATIVES ON THE CONSTRUCTION SITE AND HIS REPRESENTATIVE RESPONSIBLE FOR THE DETOUR SIGNING, PRIOR TO THE START OF WORK.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FIELD LOCATION OF ALL DETOUR AND CONSTRUCTION SIGNING. THE CONTRACTOR MAY REQUEST THE OWNER'S REPRESENTATIVE TO FIELD VERIFY THE POSITIONS OF ANY SIGNS.
- ALL EXISTING SIGNING THAT IS NOT APPLICABLE WHILE THE DETOUR IS IN EFFECT SHALL BE COMPLETELY COVERED, OR REMOVED, BY THE CONTRACTOR IN A MANNER MEETING THE APPROVAL OF THE OWNER'S REPRESENTATIVE.
- CHANGEABLE MESSAGE SIGNS SHALL BE INSTALLED TWO WEEKS PRIOR TO ALL TRAFFIC STAGE CHANGES ON EACH APPROACH OF THE AFFECTED ROADWAY TO WARN MOTORISTS OF THE UPCOMING EVENT. THE SIGN MESSAGE SHALL BE REVISED TWO WEEKS THEREAFTER WITH MESSAGES WARNING TRAFFIC OF POTENTIAL TRAFFIC DELAYS, QUEUING AND/OR WITH MESSAGE NOTIFYING TRAFFIC TO USE ALTERNATE ROUTES. THE SIGN LOCATIONS AND MESSAGE SHALL BE DETERMINED BY THE OWNER'S REPRESENTATIVE.
- RESIDENTIAL DRIVEWAY ACCESS TO BE MAINTAINED AT ALL TIMES. IF ACCESS IS TO BE IMPACTED, THE CONTRACTOR SHALL NOTIFY THE RESIDENT FORTY-EIGHT (48) HOURS IN ADVANCE OF CLOSING AND ACCESS SHALL BE RESTORED BY THE END OF THE WORKING DAY.
- CROSS STREET ACCESS TO BE MAINTAINED AT ALL TIMES. IF ACCESS IS TO BE IMPACTED, THE STREET SHALL BE BLOCKED OFF NO LONGER THAN TWENTY-FOUR (24) HOURS. TWO (2) OR MORE TYPE III BARRICADES SHALL BE USED TO BLOCK PEDESTRIAN ACCESS AT THESE CROSS STREETS.
- THE CONTRACTOR'S ATTENTION IS CALLED OUT TO PERKINS COURT. SINCE THERE IS NO OTHER ACCESS TO THIS CUL-DE-SAC, ACCESS MUST BE MAINTAINED AS MUCH AS POSSIBLE. EVERY RESIDENT ON THE STREET SHALL BE NOTIFIED FORTY-EIGHT (48) HOURS IN ADVANCE OF CLOSURE AND ACCESS SHALL BE RESTORED BY THE END OF EACH WORKING DAY.
- THE CONTRACTOR'S ATTENTION IS CALLED OUT TO SUTTON CIRCLE. THE COMMUNITY HAS ONLY TWO ENTRANCES AND BOTH ARE ON BOOK ROAD. AT LEAST ONE ENTRANCE TO SUTTON CIRCLE MUST REMAIN OPEN AT ALL TIMES.
- THE CONTRACTOR SHALL COMPLETE ROADWAY RESTORATION AND PAVEMENT MARKINGS AS DETAILED IN THE PLANS WITHIN THE ACTIVE CONSTRUCTION ZONE PRIOR TO MOVING INTO A SUBSEQUENT CONSTRUCTION STAGE WHICH UTILIZES THAT PAVEMENT FOR DETOUR TRAFFIC.

- ESTABLISH AND MAINTAIN THE BOOK ROAD DETOUR ROUTE UTILIZING RICKERT DRIVE, 75TH STREET, 83RD STREET, 87TH STREET, ROUTE 59 & PLAINFIELD-NAPERVILLE ROAD.
- BAG AND DISCONNECT DESIGNATED TRAFFIC SIGNAL HEADS AT 75TH STREET INTERSECTION AND 83RD STREET INTERSECTION ACCORDING TO TEMPORARY TRAFFIC SIGNAL PLANS. IMPLEMENT TEMPORARY TRAFFIC SIGNAL TIMING ALONG DETOUR ROUTE.
- INSTALL TEMPORARY CONCRETE BARRIER, CLOSE DESIGNATED TURN LANES AND INSTALL TEMPORARY PAVEMENT MARKING TAPE AT 75TH STREET INTERSECTION AND 83RD STREET INTERSECTION ACCORDING TO STAGE 1A MAINTENANCE OF TRAFFIC PLANS.
- MAINTAIN EASTBOUND AND WESTBOUND THRU TRAFFIC ON 75TH STREET IN EXISTING TRAVEL LANES.
- CLOSE BOOK ROAD FROM THREE FARMS AVENUE TO 75TH STREET AND FROM 75TH STREET TO 83RD STREET.
- ESTABLISH AND MAINTAIN TWO-WAY LOCAL TRAFFIC UTILIZING EXISTING TRAVEL LANES ON BOOK ROAD FROM RICKERT DRIVE TO THREE FARMS AVENUE.
- INSTALL TEMPORARY EAST-WEST CROSSWALK NORTH OF 75TH STREET FOR PEDESTRIAN TRAFFIC AS SHOWN ON STAGE 1A MAINTENANCE OF TRAFFIC PLANS.

- INSTALLATION OF BORE PITS AND TRENCHLESS WATER MAIN INSTALLATION SHALL BE PERFORMED TO CROSS UNDER 75TH STREET.
- CONTRACTOR TO MAKE WATER MAIN CONNECTION ON THE NORTH SIDE OF 75TH STREET.
- ALL PAVEMENT RESTORATION NORTH OF 75TH STREET SHALL BE COMPLETED PRIOR TO OPENING BOOK ROAD TO TRAFFIC BETWEEN THREE FARMS AVENUE AND 75TH STREET.

- ESTABLISH AND MAINTAIN THE BOOK ROAD DETOUR ROUTE UTILIZING 75TH STREET, 83RD STREET, 87TH STREET, ROUTE 59 & PLAINFIELD-NAPERVILLE ROAD.
- BAG AND DISCONNECT DESIGNATED TRAFFIC SIGNAL HEADS AT 75TH STREET INTERSECTION AND 83RD STREET INTERSECTION ACCORDING TO TEMPORARY TRAFFIC SIGNAL PLANS. IMPLEMENT TEMPORARY TRAFFIC SIGNAL TIMING ALONG DETOUR ROUTE.
- CLOSE DESIGNATED TURN LANES AND INSTALL TEMPORARY PAVEMENT MARKING TAPE AT 75TH STREET INTERSECTION AND 83RD STREET INTERSECTION ACCORDING TO STAGE 1B MAINTENANCE OF TRAFFIC PLANS.
- RE-ESTABLISH TWO WAY TRAFFIC ALONG BOOK ROAD BETWEEN 75TH STREET AND RICKET DRIVE UTILIZING EXISTING TRAVEL LANES.
- MAINTAIN ROAD CLOSURE OF BOOK ROAD FROM 75TH STREET TO 83RD STREET.

- OPEN-CUT TRENCH WATER MAIN INSTALLATION AND TRENCHLESS WATER MAIN INSTALLATION ALONG BOOK ROAD BETWEEN 75TH STREET AND 83RD STREET.
- FULL-DEPTH PAVEMENT RECONSTRUCTION OF THE NORTHBOUND LANE AND PAVEMENT IMPACTED BY WATER MAIN INSTALLATION ALONG BOOK ROAD BETWEEN 75TH STREET AND 83RD STREET ACCORDING TO ROADWAY PLANS.

- ESTABLISH AND MAINTAIN THE BOOK ROAD DETOUR ROUTE UTILIZING 75TH STREET, 87TH STREET, ROUTE 59 & PLAINFIELD-NAPERVILLE ROAD.
- BAG AND DISCONNECT DESIGNATED TRAFFIC SIGNAL HEADS AT 75TH STREET INTERSECTION, 83RD STREET INTERSECTION AND 87TH STREET INTERSECTION ACCORDING TO TEMPORARY TRAFFIC SIGNAL PLANS. IMPLEMENT TEMPORARY TRAFFIC SIGNAL TIMING ALONG DETOUR ROUTE.
- CLOSE DESIGNATED TURN LANES AND INSTALL TEMPORARY PAVEMENT MARKING TAPE AT 75TH STREET INTERSECTION AND 87TH STREET INTERSECTION ACCORDING TO STAGE 2A MAINTENANCE OF TRAFFIC PLANS.
- CLOSE BOOK ROAD FROM 75TH STREET TO 87TH STREET AND CLOSE 83RD STREET FROM 2120 83RD STREET TO BOOK ROAD.
- MAINTAIN TWO-WAY LOCAL TRAFFIC UTILIZING EXISTING TRAVEL LANES ON 83RD STREET FROM ROUTE 59 TO 2120 83RD STREET.

- INSTALLATION OF BORE PITS AND TRENCHLESS WATER MAIN INSTALLATION SHALL BE PERFORMED TO CROSS UNDER 83RD STREET AND DITCH/CREEK CROSSINGS.
- ALL PAVEMENT RESTORATION SHALL BE COMPLETED NORTH OF 83RD STREET PRIOR TO OPENING BOOK ROAD TO TRAFFIC BETWEEN 75TH STREET AND 83RD STREET.

- ESTABLISH AND MAINTAIN THE BOOK ROAD DETOUR ROUTE UTILIZING 75TH STREET, 83RD STREET, 87TH STREET, ROUTE 59 & PLAINFIELD-NAPERVILLE ROAD.
- BAG AND DISCONNECT DESIGNATED TRAFFIC SIGNAL HEADS AT 83RD STREET INTERSECTION AND 87TH STREET INTERSECTION ACCORDING TO TEMPORARY TRAFFIC SIGNAL PLANS. IMPLEMENT TEMPORARY TRAFFIC SIGNAL TIMING ALONG DETOUR ROUTE.
- CLOSE DESIGNATED TURN LANES AND INSTALL TEMPORARY PAVEMENT MARKING TAPE AT 83RD STREET INTERSECTION AND 87TH STREET INTERSECTION ACCORDING TO STAGE 2B MAINTENANCE OF TRAFFIC PLANS.
- RE-ESTABLISH TWO WAY TRAFFIC ALONG BOOK ROAD BETWEEN 75TH STREET AND 83RD STREET UTILIZING EXISTING TRAVEL LANES.
- CLOSE BOOK ROAD FROM 83RD STREET TO 87TH STREET.

- OPEN-CUT TRENCH WATER MAIN INSTALLATION ALONG BOOK ROAD BETWEEN 83RD STREET AND 87TH STREET.
- FULL-DEPTH PAVEMENT RECONSTRUCTION OF THE NORTHBOUND LANE AND PAVEMENT IMPACTED BY WATER MAIN INSTALLATION ALONG BOOK ROAD BETWEEN 83RD STREET AND 87TH STREET ACCORDING TO ROADWAY PLANS.

- ESTABLISH AND MAINTAIN THE BOOK ROAD DETOUR ROUTE UTILIZING 75TH STREET, 83RD STREET, 87TH STREET, 95TH STREET, ROUTE 59 & PLAINFIELD-NAPERVILLE ROAD.
- BAG AND DISCONNECT DESIGNATED TRAFFIC SIGNAL HEADS AT 83RD STREET INTERSECTION AND 87TH STREET INTERSECTION ACCORDING TO TEMPORARY TRAFFIC SIGNAL PLANS. IMPLEMENT TEMPORARY TRAFFIC SIGNAL TIMING ALONG DETOUR ROUTE.
- CLOSE DESIGNATED TURN LANES AND INSTALL TEMPORARY PAVEMENT MARKING TAPE AT 83RD STREET INTERSECTION AND 87TH STREET INTERSECTION ACCORDING TO STAGE 3A MAINTENANCE OF TRAFFIC PLANS.
- MAINTAIN EASTBOUND AND WESTBOUND THRU TRAFFIC ON 87TH STREET IN EXISTING TRAVEL LANES.
- CLOSE BOOK ROAD FROM 83RD STREET TO 87TH STREET AND FROM 87TH STREET TO 105049 BOOK ROAD.
- ESTABLISH AND MAINTAIN TWO-WAY LOCAL TRAFFIC UTILIZING EXISTING TRAVEL LANES ON BOOK ROAD FROM 105049 BOOK ROAD TO 95TH STREET.

- INSTALLATION OF BORE PITS AND TRENCHLESS WATER MAIN INSTALLATION SHALL BE PERFORMED TO CROSS UNDER 87TH STREET. OPEN CUT WATER MAIN INSTALLATION NORTH OF 105049 BOOK ROAD.
- ALL PAVEMENT RESTORATION SHALL BE COMPLETED NORTH OF 105049 BOOK ROAD PRIOR TO OPENING BOOK ROAD TO TRAFFIC BETWEEN 83RD STREET AND 87TH STREET AND ENTERING STAGE 3B TRAFFIC CONFIGURATION.

- ESTABLISH AND MAINTAIN THE BOOK ROAD DETOUR ROUTE UTILIZING 87TH STREET, 95TH STREET, ROUTE 59 & PLAINFIELD-NAPERVILLE ROAD. IMPLEMENT TEMPORARY TRAFFIC SIGNAL TIMING ALONG DETOUR ROUTE.
- RE-ESTABLISH TWO WAY TRAFFIC ALONG BOOK ROAD BETWEEN 83RD STREET AND 87TH STREET UTILIZING EXISTING TRAVEL LANES.
- ESTABLISH AND MAINTAIN TWO-WAY LOCAL TRAFFIC UTILIZING 10' TEMPORARY TRAVEL LANES ON EXISTING AND TEMPORARY PAVEMENT ALONG WEST SIDE OF BOOK ROAD FROM 87TH STREET TO 95TH STREET.
- INSTALL TEMPORARY PAVEMENT MARKING PAINT ON BOOK ROAD BETWEEN 87TH STREET AND 95TH STREET ACCORDING TO STAGE 3B MAINTENANCE OF TRAFFIC PLANS.
- TWO-WAY LOCAL TRAFFIC ON BOOK ROAD BETWEEN JOYCE LANE AND 95TH STREET TO BE MAINTAINED VIA FLAGGING OPERATIONS WHEN CONSTRUCTION IS ACTIVE UTILIZING IDOT HIGHWAY STANDARD 701501.
- WHEN FULL WIDTH CLOSURES ARE NECESSARY, TWO-WAY LOCAL TRAFFIC SHALL BE RESTORED BY END OF EACH WORKING DAY.

- INSTALL TEMPORARY PAVEMENT ON BOOK ROAD BETWEEN 87TH STREET AND 95TH STREET ACCORDING TO STAGE 3B MAINTENANCE OF TRAFFIC PLANS.
- OPEN-CUT TRENCH WATER MAIN INSTALLATION, UTILITY ADJUSTMENTS AND FULL-DEPTH PAVEMENT PATCHING FOR UTILITY CROSSINGS ALONG BOOK ROAD BETWEEN 87TH STREET AND 95TH STREET.

- ESTABLISH AND MAINTAIN THE BOOK ROAD ONE-WAY LOCAL TRAFFIC ONLY DETOUR ROUTE UTILIZING 87TH STREET, 95TH STREET, ROUTE 59 & PLAINFIELD-NAPERVILLE ROAD.
- BAG AND DISCONNECT DESIGNATED TRAFFIC SIGNAL HEADS AT 87TH STREET AND 95TH STREET INTERSECTIONS ACCORDING TO TEMPORARY TRAFFIC SIGNAL PLANS. IMPLEMENT TEMPORARY TRAFFIC SIGNAL TIMING ALONG DETOUR ROUTE.
- CLOSE DESIGNATED TURN AND THRU LANES AND INSTALL TEMPORARY PAVEMENT MARKING TAPE AT 87TH STREET AND 95TH STREET INTERSECTIONS ACCORDING TO STAGE 3C MAINTENANCE OF TRAFFIC PLANS.
- ESTABLISH AND MAINTAIN SOUTHBOUND ONE-WAY LOCAL TRAFFIC UTILIZING 10' TEMPORARY TRAVEL LANES ON EXISTING AND TEMPORARY PAVEMENT ALONG WEST SIDE OF BOOK ROAD FROM 87TH STREET TO 95TH STREET.
- INSTALL TEMPORARY PAVEMENT MARKING PAINT ON BOOK ROAD BETWEEN 87TH STREET AND 95TH STREET ACCORDING TO STAGE 3C MAINTENANCE OF TRAFFIC PLANS.

- FULL-DEPTH PAVEMENT RECONSTRUCTION OF THE NORTHBOUND LANE AND PAVEMENT IMPACTED BY WATER MAIN INSTALLATION ALONG BOOK ROAD BETWEEN 87TH STREET AND 95TH STREET ACCORDING TO ROADWAY PLANS.

- ESTABLISH AND MAINTAIN THE BOOK ROAD DETOUR ROUTE UTILIZING 87TH STREET, 95TH STREET, 103RD STREET, 104TH STREET, ROUTE 59 & PLAINFIELD-NAPERVILLE ROAD.
- BAG AND DISCONNECT DESIGNATED TRAFFIC SIGNAL HEADS AT 95TH STREET INTERSECTION ACCORDING TO TEMPORARY TRAFFIC SIGNAL PLANS. IMPLEMENT TEMPORARY TRAFFIC SIGNAL TIMING ALONG DETOUR ROUTE.
- CLOSE DESIGNATED TURN LANES AND INSTALL TEMPORARY PAVEMENT MARKING TAPE AT 95TH STREET INTERSECTION ACCORDING TO STAGE 4A MAINTENANCE OF TRAFFIC PLANS.
- MAINTAIN EASTBOUND AND WESTBOUND THRU TRAFFIC ON 95TH STREET IN EXISTING TRAVEL LANES.
- CLOSE BOOK ROAD FROM TAMAHAWK LANE TO 95TH STREET AND FROM 95TH STREET TO 3075 BOOK ROAD.
- ESTABLISH AND MAINTAIN TWO-WAY LOCAL TRAFFIC UTILIZING EXISTING TRAVEL LANES ON BOOK ROAD FROM 87TH STREET TO TAMAHAWK LANE AND FROM 3075 BOOK ROAD TO 103RD STREET.

- INSTALLATION OF BORE PITS AND TRENCHLESS WATER MAIN INSTALLATION SHALL BE PERFORMED TO CROSS UNDER 95TH STREET. OPEN CUT WATER MAIN INSTALLATION NORTH OF 3075 BOOK ROAD.
- ALL PAVEMENT RESTORATION SHALL BE COMPLETED NORTH OF 3075 BOOK ROAD PRIOR TO OPENING OF BOOK ROAD TO ALL TRAFFIC BETWEEN 87TH STREET AND 95TH STREET, AND ENTERING STAGE 4B TRAFFIC CONFIGURATION.
- WHEN FULL WIDTH CLOSURES ARE NECESSARY, TWO-WAY LOCAL TRAFFIC SHALL BE RESTORED BY END OF EACH WORKING DAY.

- ESTABLISH AND MAINTAIN THE BOOK ROAD DETOUR ROUTE UTILIZING 95TH STREET, 103RD STREET, 104TH STREET, ROUTE 59 & PLAINFIELD-NAPERVILLE ROAD.
- RE-ESTABLISH TWO WAY TRAFFIC ALONG BOOK ROAD BETWEEN 87TH STREET AND 95TH STREET UTILIZING EXISTING TRAVEL LANES.
- BAG AND DISCONNECT DESIGNATED TRAFFIC SIGNAL HEADS AT CONAN DOYLE ROAD INTERSECTION ACCORDING TO TEMPORARY TRAFFIC SIGNAL PLANS. IMPLEMENT TEMPORARY TRAFFIC SIGNAL TIMING ALONG DETOUR ROUTE.

- ### STAGE 4B CONSTRUCTION

- OPEN-CUT TRENCH WATER MAIN INSTALLATION, UTILITY ADJUSTMENTS AND FULL-DEPTH PAVEMENT PATCHING FOR UTILITY CROSSINGS ALONG BOOK ROAD BETWEEN 95TH STREET AND CONAN DOYLE ROAD.

- ESTABLISH AND MAINTAIN THE BOOK ROAD DETOUR ROUTE UTILIZING 95TH STREET, 103RD STREET, 104TH STREET, ROUTE 59 & PLAINFIELD-NAPEVILLE ROAD.
- BAG AND DISCONNECT DESIGNATED TRAFFIC SIGNAL HEADS AT 95TH STREET AND CONAN DOYLE ROAD INTERSECTIONS ACCORDING TO TEMPORARY TRAFFIC SIGNAL PLANS. IMPLEMENT TEMPORARY TRAFFIC SIGNAL TIMING ALONG DETOUR ROUTE
- CLOSE DESIGNATED TURN AND THRU LANES AND INSTALL TEMPORARY PAVEMENT MARKING TAPE AT CONAN DOYLE ROAD INTERSECTION ACCORDING TO MAINTENANCE OF TRAFFIC PLANS.
- CLOSE BOOK ROAD FROM CONAN DOYLE ROAD TO WAGNER ROAD.
- ESTABLISH AND MAINTAIN ONE-WAY LOCAL TRAFFIC UTILIZING 10' TEMPORARY TRAVEL LANES ON EXISTING PAVEMENT ALONG WEST SIDE OF BOOK ROAD FROM 95TH STREET TO CONAN DOYLE ROAD AND TWO-WAY LOCAL TRAFFIC IN EXISTING TRAVEL LANES FROM WAGNER ROAD TO 103RD STREET.
- INSTALL TEMPORARY PAVEMENT MARKING PAINT ON BOOK ROAD BETWEEN 95TH STREET AND CONAN DOYLE ROAD ACCORDING TO STAGE 4C MAINTENANCE OF TRAFFIC PLANS.
- UPON COMPLETION OF PAVEMENT RESTORATION NORTH OF CONAN DOYLE ROAD, AND PRIOR TO COMPLETION OF WATER MAIN INSTALLATION AND PAVEMENT RESTORATION SOUTH OF CONAN DOYLE ROAD, RE-ESTABLISH TWO-WAY LOCAL TRAFFIC UTILIZING EXISTING TRAVEL LANES NORTH OF CONAN DOYLE ROAD.

- OPEN-CUT TRENCH WATER MAIN INSTALLATION AND UTILITY ADJUSTMENTS AND FULL-DEPTH PAVEMENT PATCHING FOR UTILITY CROSSINGS ALONG BOOK ROAD BETWEEN CONAN DOYLE ROAD AND COMED EASEMENT.
- FULL-DEPTH PAVEMENT RECONSTRUCTION OF NORTHBOUND LANE AND PAVEMENT IMPACTED BY WATER MAIN INSTALLATION ALONG BOOK ROAD BETWEEN 95TH STREET AND COMED EASEMENT ACCORDING TO ROADWAY PLANS.

DETOUR ROUTE SIGNAL TIMING IMPACTS	
INTERSECTION	
N-S ROUTE	E-W ROUTE
BOOK ROAD	RICKERT DRIVE
IL ROUTE 59	75TH STREET
BEEBE DRIVE	75TH STREET
FORT HILL DRIVE	75TH STREET
BOOK ROAD	75TH STREET
PLAINFIELD- NAPERVILLE ROAD	75TH STREET
IL ROUTE 59	BEEBE DRIVE
IL ROUTE 59	83RD STREET
BOOK ROAD	83RD STREET
IL ROUTE 59	87TH STREET
BOOK ROAD	87TH STREET
PLAINFIELD- NAPERVILLE ROAD	87TH STREET
PLAINFIELD- NAPERVILLE ROAD	LEVERENZ ROAD
PLAINFIELD- NAPERVILLE ROAD	GATESHEAD DRIVE
IL ROUTE 59	CANTORE ROAD
IL ROUTE 59	95TH STREET
CEDAR GLADE ROAD	95TH STREET
WILD CAT WAY	95TH STREET
SKYLANE DRIVE	95TH STREET
BOOK ROAD	95TH STREET
PLAINFIELD- NAPERVILLE ROAD	95TH STREET
IL ROUTE 59	LACROSE LANE
BOOK ROAD	CONAN DOYLE ROAD
IL ROUTE 59	103RD STREET
BOOK ROAD	103RD STREET
BOOK ROAD	104TH STREET
PLAINFIELD- NAPERVILLE ROAD	104TH STREET

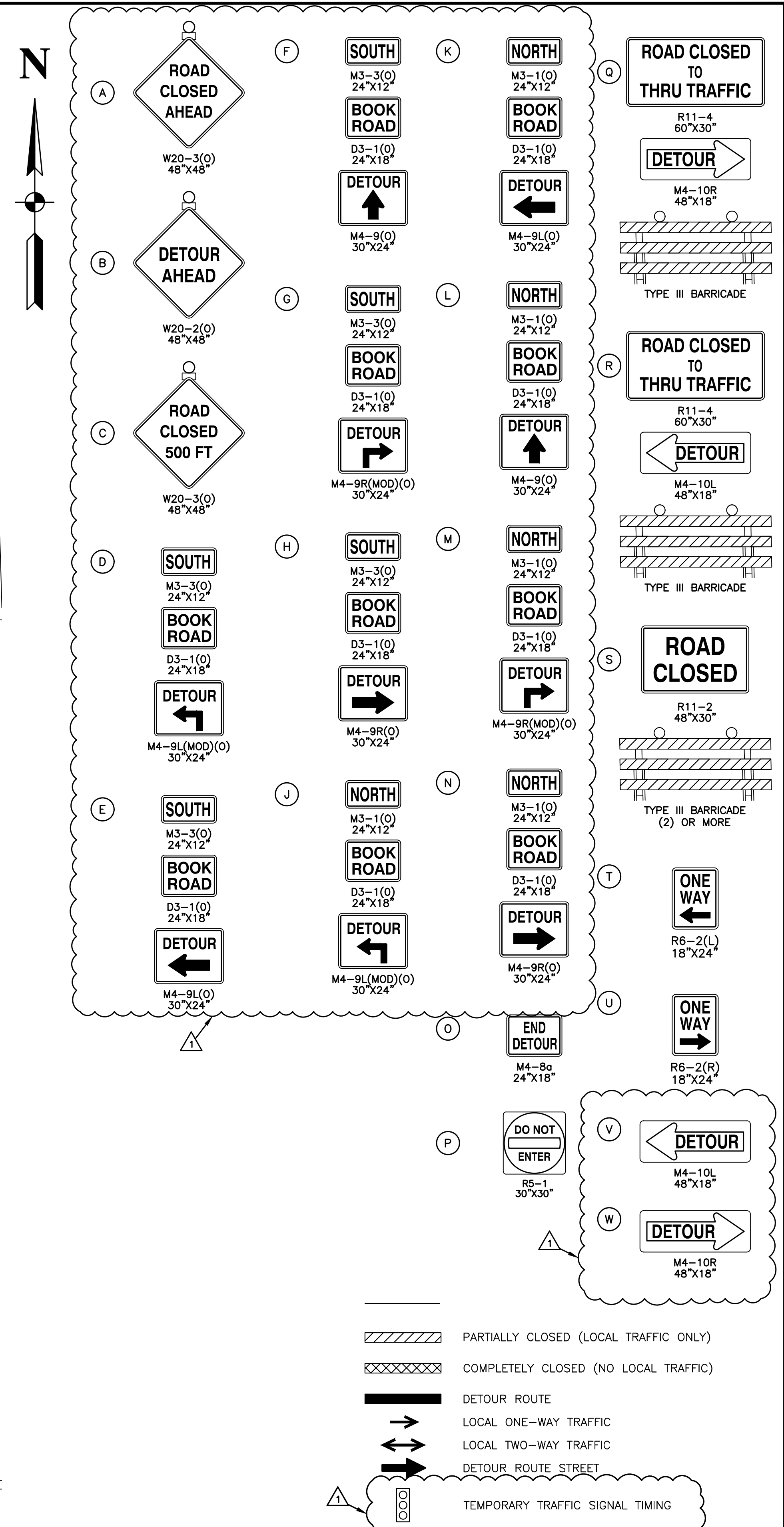
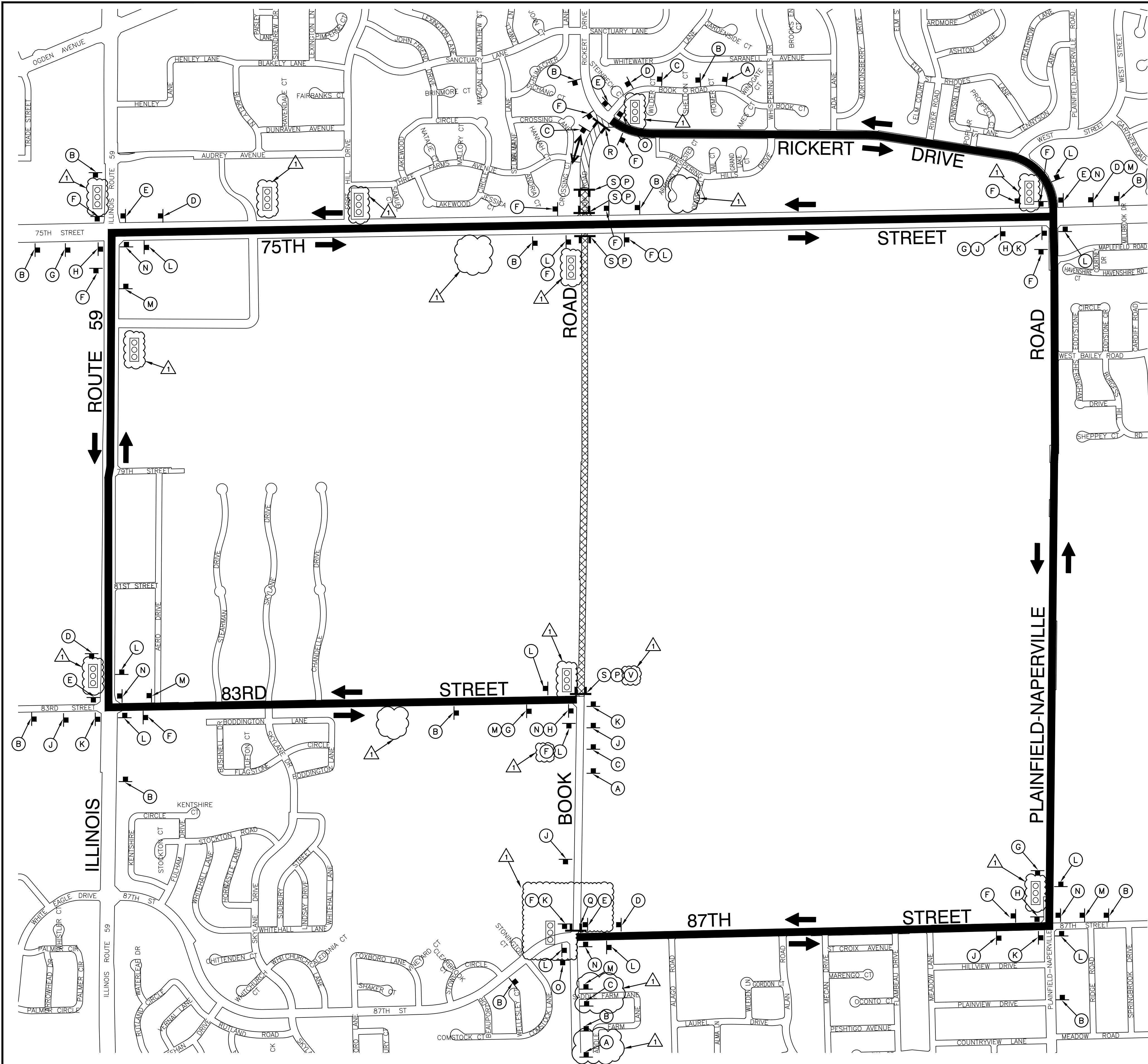


CONTRACT TW-6/25 SECTION 1 WEST TRANSMISSION MAIN

MAINTENANCE OF TRAFFIC
BOOK ROAD
SUGGESTED TRAFFIC CONTROL
STAGING NOTES



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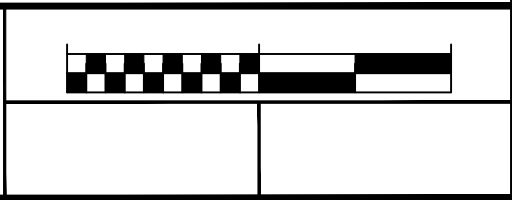


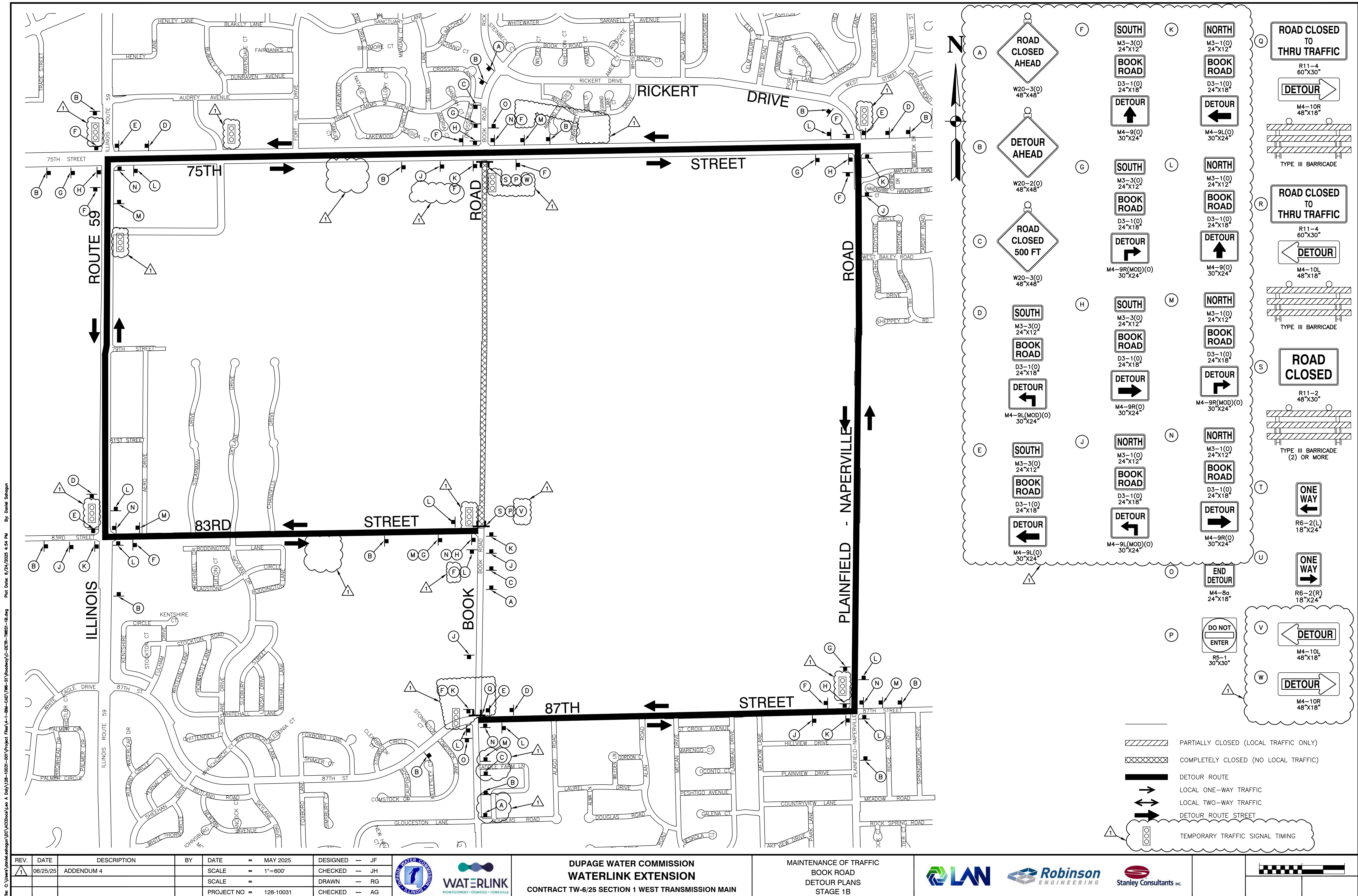
REV.	DATE	DESCRIPTION	BY	DATE	DESIGNED
1	06/25/25	ADDENDUM 4			JF
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				SCALE =	DRAWN — RG
				PROJECT NO = 128-10031	CHECKED — AG

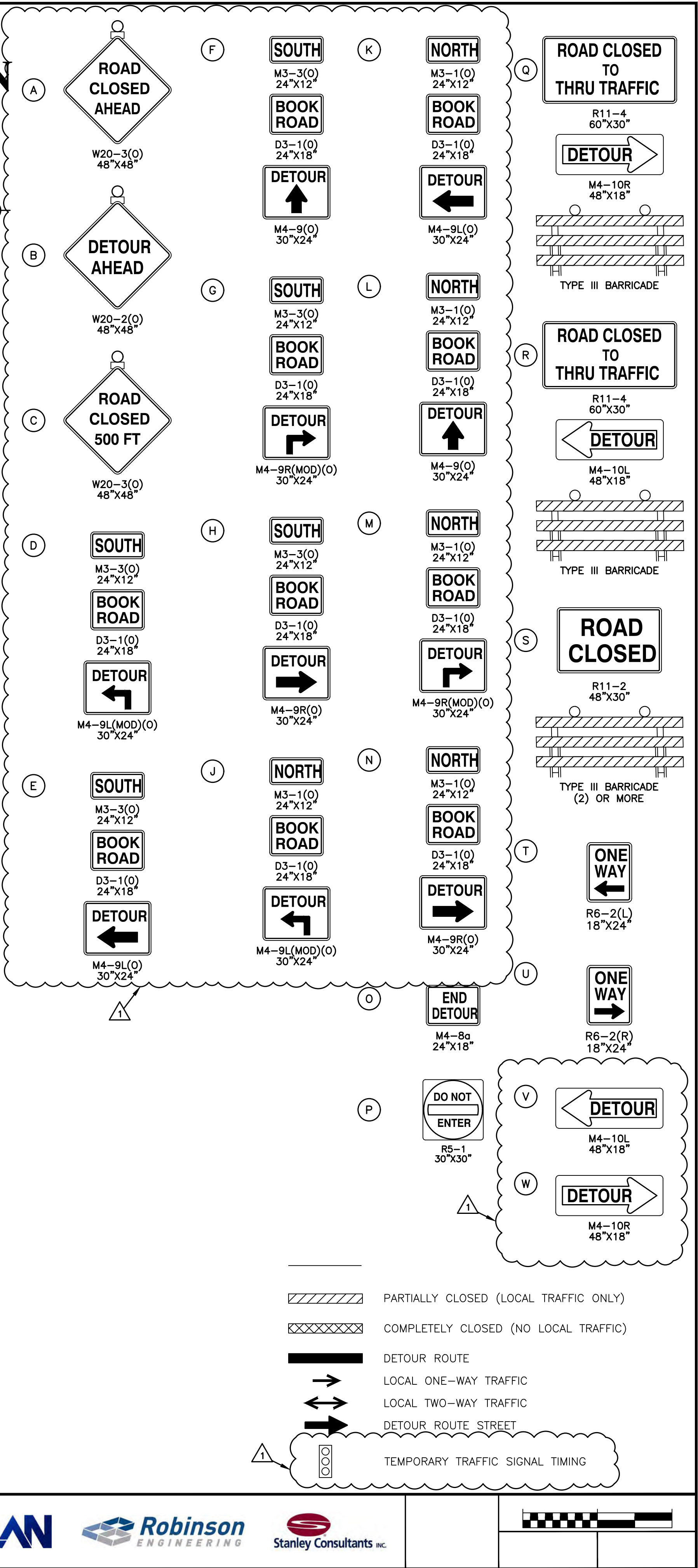
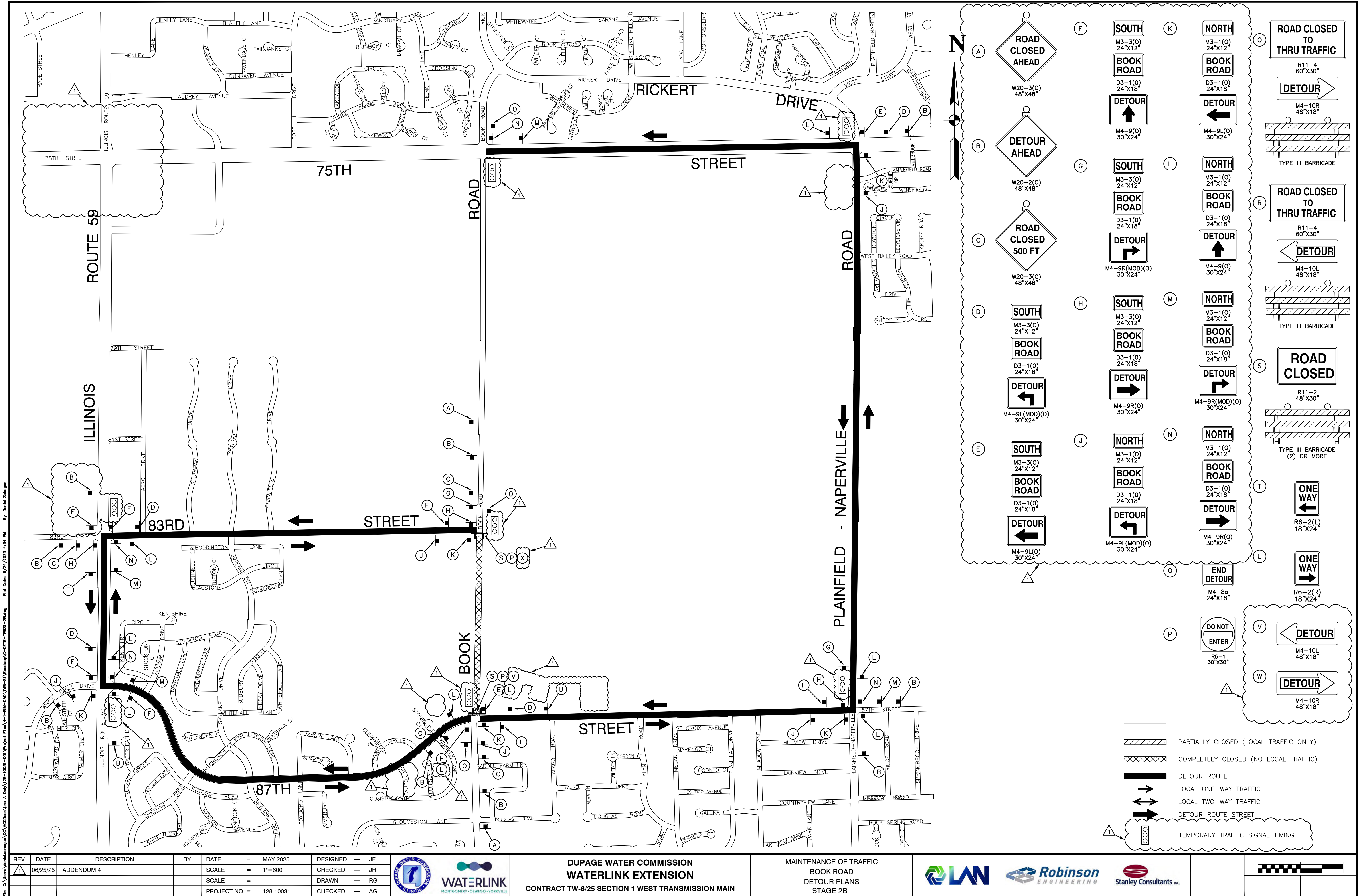


DUPAGE WATER COMMISSION
WATERLINK EXTENSION
CONTRACT TW-6/25 SECTION 1 WEST TRANSMISSION MAIN

MAINTENANCE OF TRAFFIC
BOOK ROAD
DETOUR PLANS
STAGE 1A





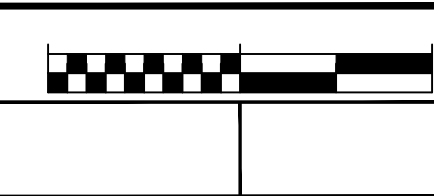
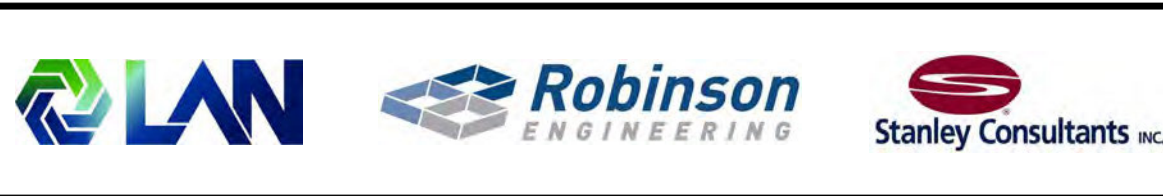


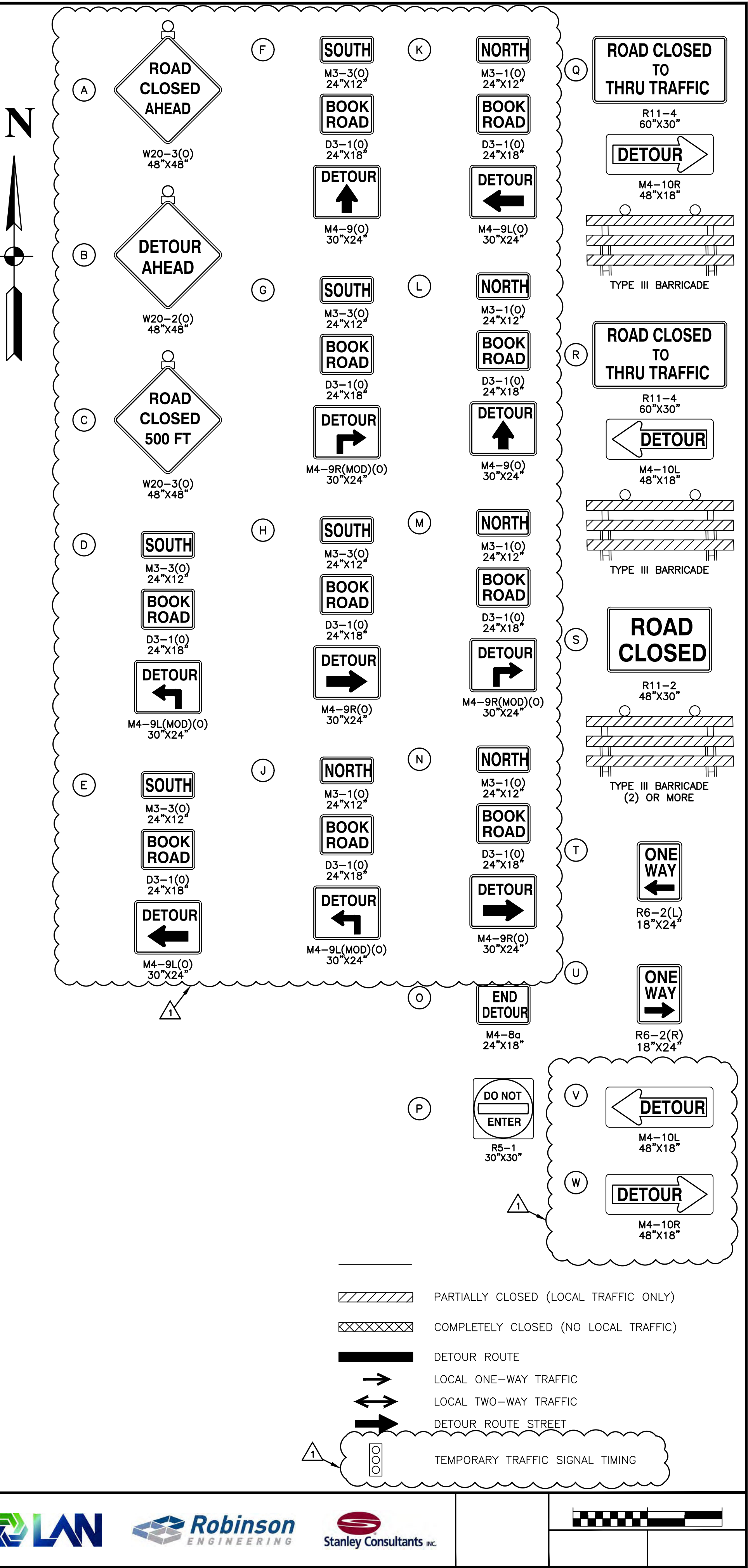
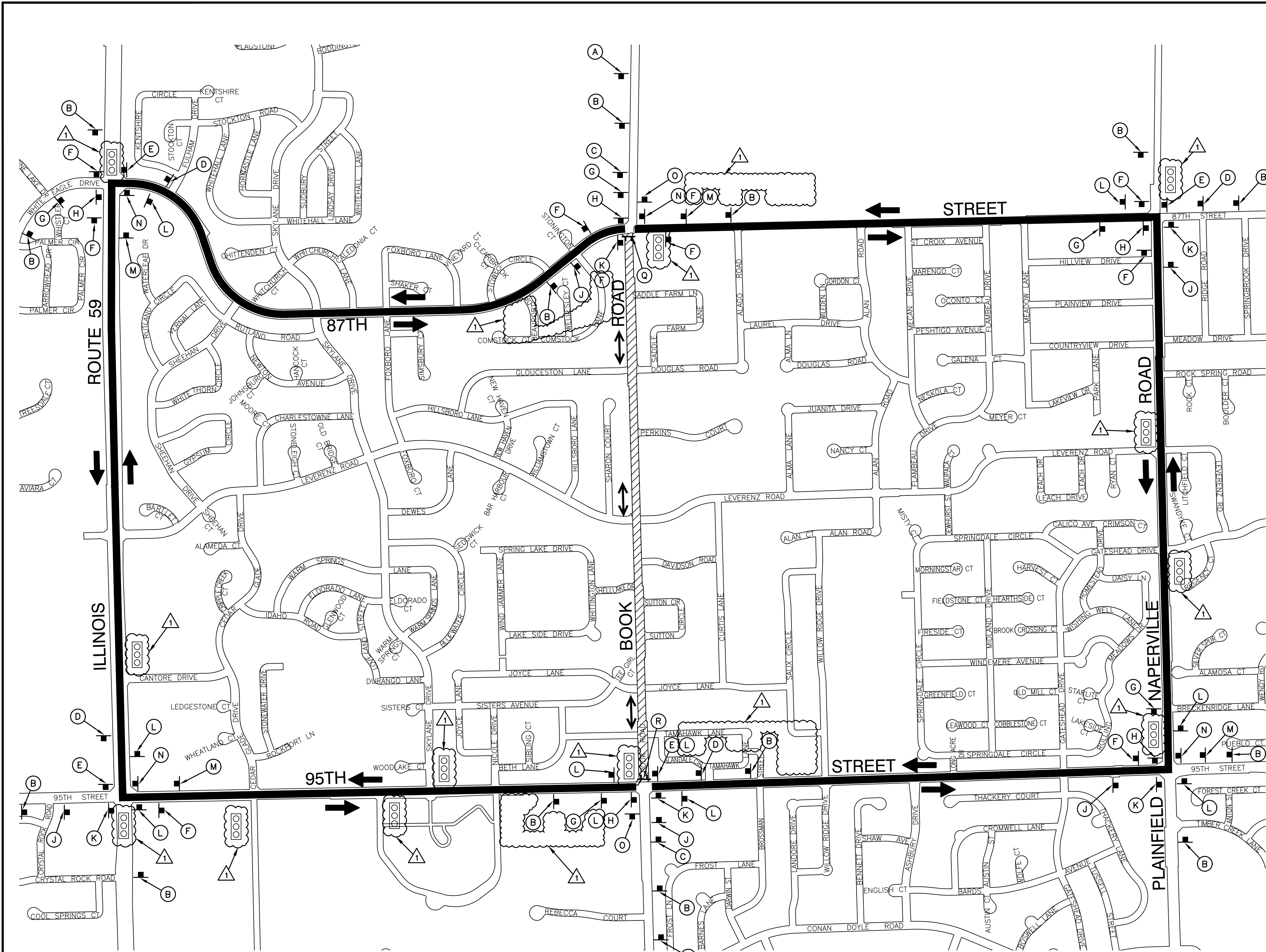
REV.	DATE	DESCRIPTION	BY	DATE	DESIGNED
1	06/25/25	ADDENDUM 4		MAY 2025	JF
				SCALE = 1"=600'	JH
				SCALE =	RG
				PROJECT NO = 128-10031	AG

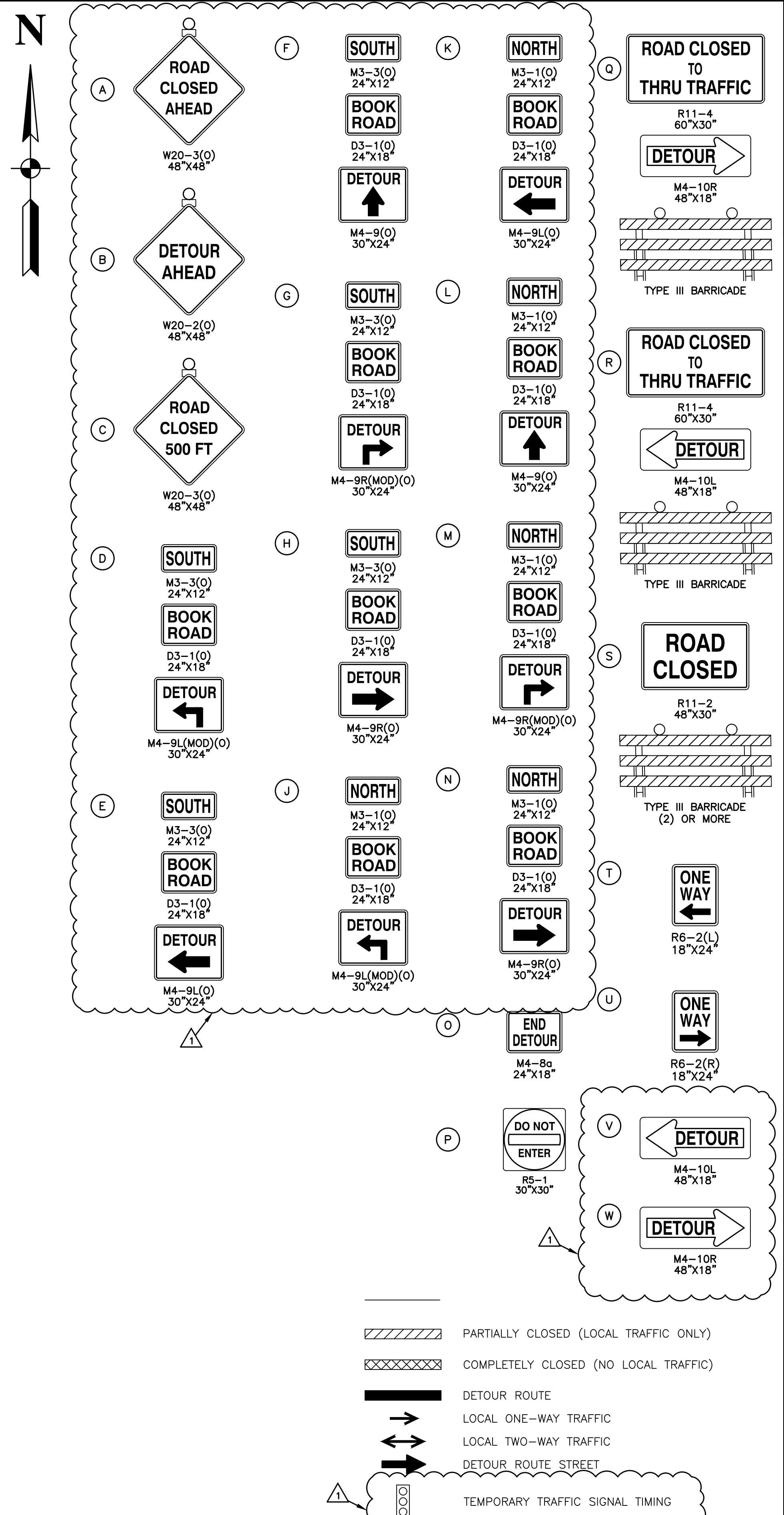
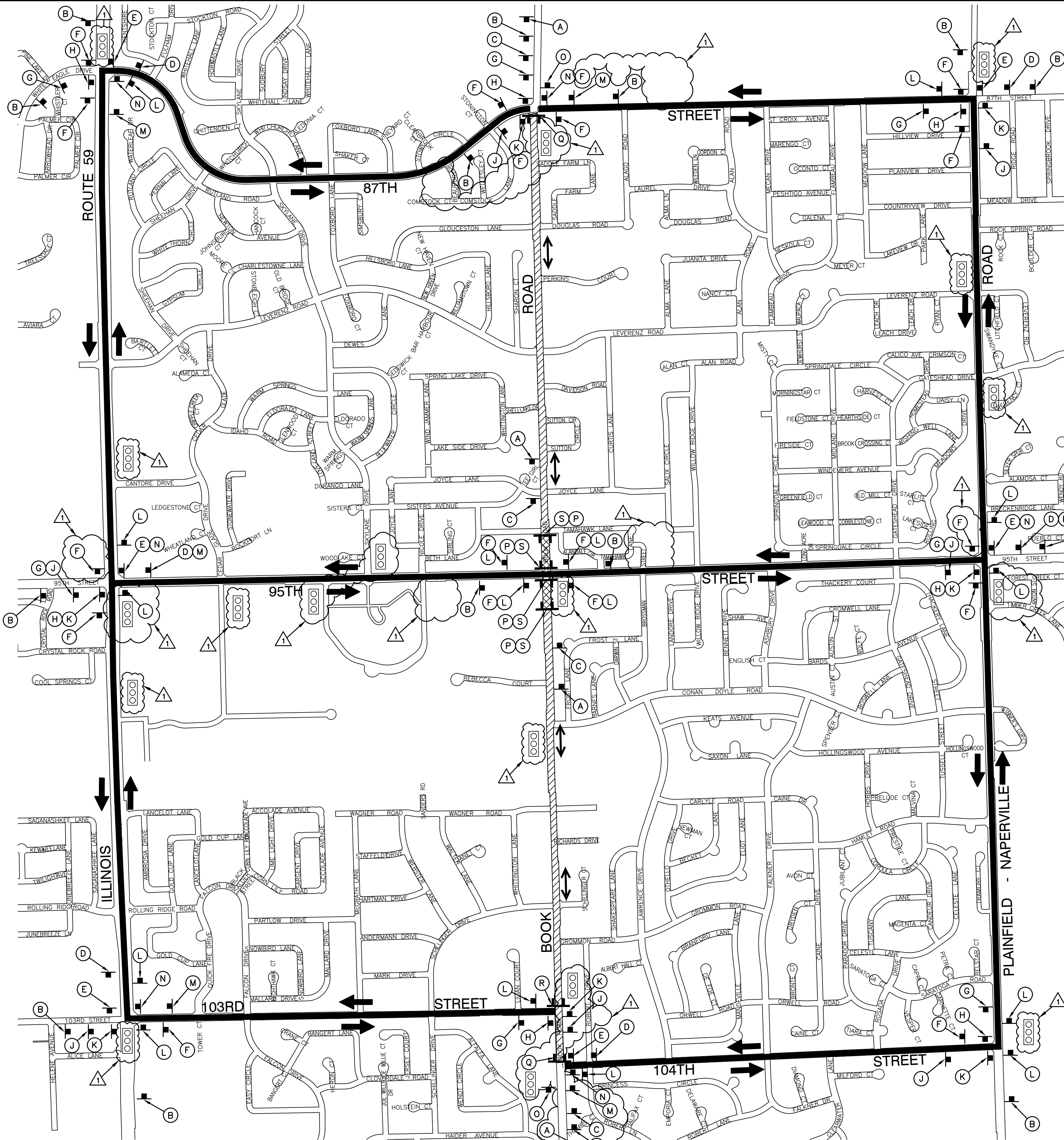


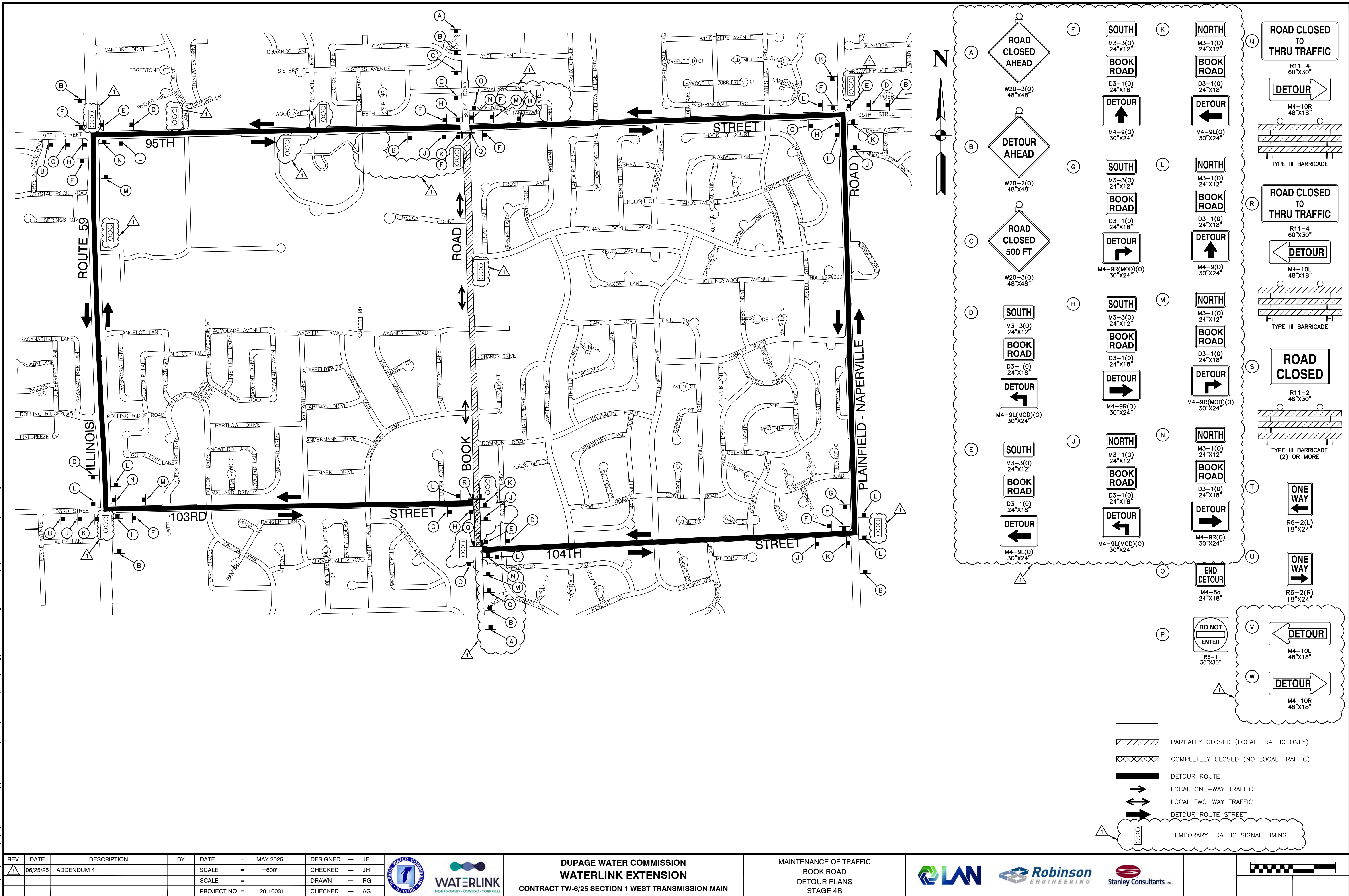
DUPAGE WATER COMMISSION
WATERLINK EXTENSION
CONTRACT TW-6/25 SECTION 1 WEST TRANSMISSION MAIN

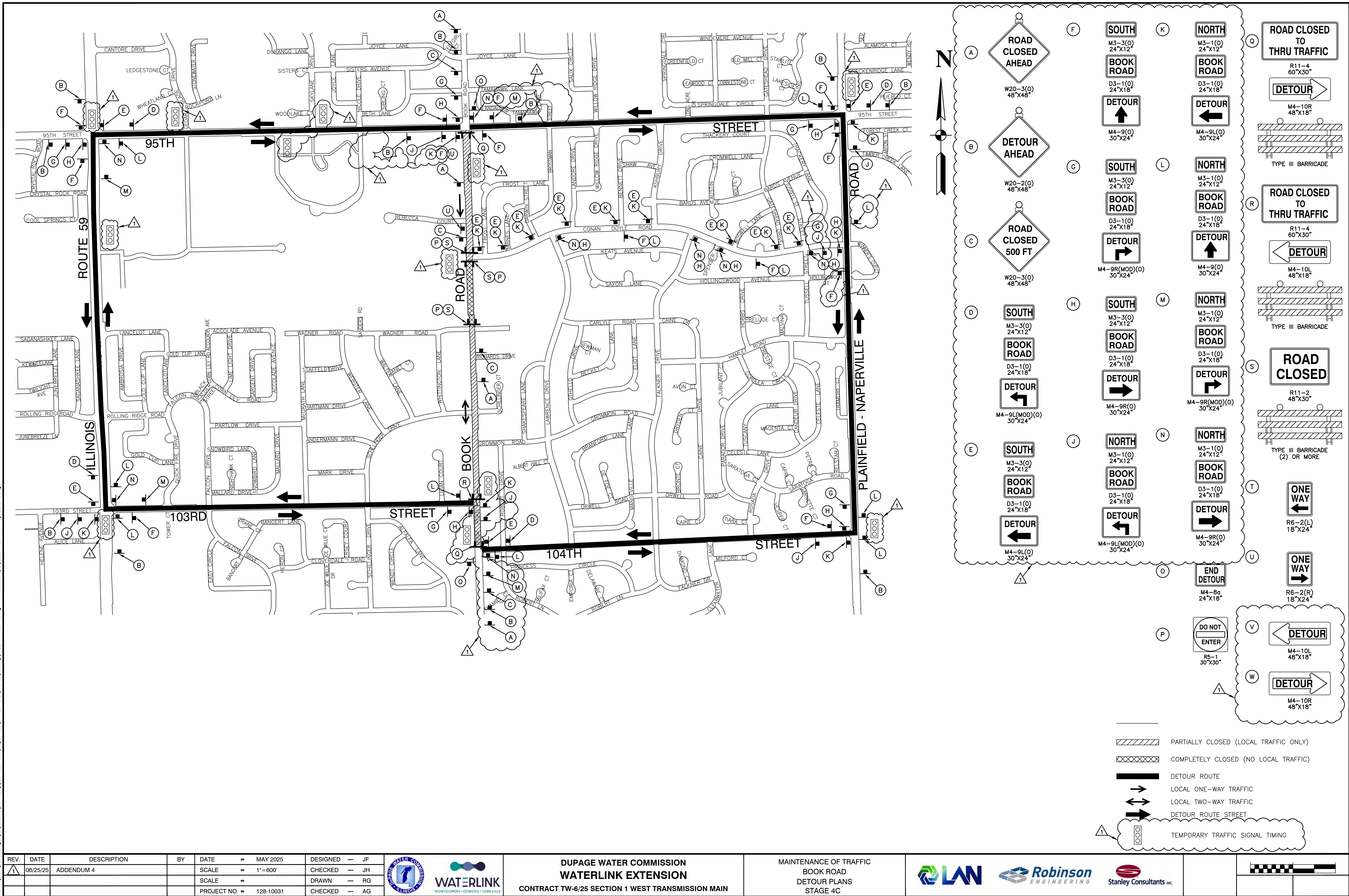
MAINTENANCE OF TRAFFIC
BOOK ROAD
DETOUR PLANS
STAGE 2B













Resolution #: R-67-25

Account: 01-80-852010

Approvals: *Author / Manager / Finance / Admin*

JL JML CAP PDM

REQUEST FOR BOARD ACTION

Date: 8/14/2025

Description: **A Resolution Approving and Ratifying Certain Change Orders for the Construction of the West Transmission Main Along Book Road From 75th Street to the ComEd R.O.W. (Contract TW-6/25 Section 1 (Book Road))**

Agenda Section: Engineering & Construction

Originating Department: Engineering

Change Order No. 1 for the Construction of the West Transmission Main along Book Road from 75th Street to the ComEd R.O.W. (Contract TW-6/25 Section 1 (Book Road))

Change Order No. 1 would authorize a net decrease of in the Contract Price of \$18,846,940.27 from the original price of \$67,148,000.00 to \$48,301,059.73 and a time extension of 0 calendar days. The following significant changes to the Contract would apply:

1. Within the as-bid design, there were several locations that called for installation of the pipeline to be completed via trenchless means (i.e. tunneling or jack-and-bore). Due to the substantial cost of trenchless installations received at the bid opening, Commission staff worked with the design team to negotiate with the Contractor to convert as much of the trenchless installation areas to open-cut as feasible.
2. Some portions of the as-bid trenchless installations could *not* be converted to open-cut installations or, even if they could, would not yield cost savings. These areas will instead be installed at a shallower depth which has significantly reduced the cost of the associated shafts.
3. Due to the change in risk associated with items 1 and 2 above, there is additional risk that the Contractor would need to assume. In order to mitigate that risk and only pay for conflicting field conditions that are actually realized, it was agreed that an owner-designated allowance would be put in place to help cover associated costs for those certain specified conditions.
4. The as-bid design called for two cut-in valves to be placed on the Commission's existing 48" pipeline along 75th Street, one on each side of where the WaterLink connection tee is to be made. The received unit prices for this work was also extremely high. As a result, one of the valves was removed from the scope of work and the scope associated with the installation of

the other was simplified to minimize costs as much as possible while maintaining its intended functionality.

Approval of this Change Order would decrease the net Contract Price by \$18,846,940.27 revising the final Contract Price to \$48,301,059.73 - a 28.1% net decrease. This amount includes a \$1,000,000 Owner's Allowance for unforeseen conditions which will not be used unless necessary and approved by DWC. Approval of this Change Order would have no bearing on the final completion date of the Contract, which currently remains as December 31, 2026.

Approval of this Change Order does not authorize or necessitate a decrease in the Contract Price that is 50% or more of the original Contract Price nor, based upon the Contractor's sworn certification, authorize or necessitate an increase in the price of any subcontract under the Contract that is 50% or more of the original subcontract price.

Recommended Motion:

To adopt Resolution R-67-25.

DUPAGE WATER COMMISSION

RESOLUTION NO. R-67-25

A RESOLUTION APPROVING AND RATIFYING CERTAIN CHANGE ORDERS FOR A CONTRACT FOR THE CONSTRUCTION OF THE WEST TRANSMISSION MAIN ALONG BOOK ROAD FROM 75TH STREET TO THE COMED R.O.W. (CONTRACT TW-6/25 SECTION 1 (BOOK ROAD))

WHEREAS, the Commission was formed and exists pursuant to the Water Commission Act of 1985, 70 ILCS 3720/0.01 et seq., and Division 135 of Article 11 of the Illinois Municipal Code, 65 ILCS 5/11-135-1 et seq., for the purpose of securing an adequate source and supply of water for its customers; and

WHEREAS, the Village of Montgomery (“Montgomery”), the Village of Oswego (“Oswego”) and the United City of Yorkville (“Yorkville”) (Oswego, Montgomery and Yorkville are collectively referred to herein as the “Municipalities”) desire to supply Lake Michigan water to their residents by connecting to the Commission’s waterworks system;

WHEREAS, the Commission and the Municipalities previously entered into intergovernmental agreements related to the funding of the required connection facilities; and

WHEREAS, pursuant to Article VIII, Section 5 of the Commission’s By-Laws, the DuPage Water Commission (the “Commission”) invited proposals for the Construction of the TW-6/25 Section 1 (Book Road) Contract; and

WHEREAS, bids for Contract TW-6/25 Section 1 (Book Road) were received on July 1, 2025; and

WHEREAS, the Commission has reviewed the proposals received and determined that the proposal of the Joint Venture of Benchmark Construction Co., Inc. and D. Construction, Inc. (Joint Venture) was the most favorable to the interests of the Commission; and

WHEREAS, the Commission and the Joint Venture have negotiated the scope and cost of the project, with all changes memorialized in Change Order No. 01;

NOW, THEREFORE, BE IT RESOLVED by the Board of Commissioners of the DuPage Water Commission as follows:

SECTION ONE: The Change Orders set forth on Exhibit A, attached hereto and by this reference incorporated herein and made a part hereof, shall be and hereby are approved and, if already issued, ratified because the Board of Commissioners of the DuPage Water Commission has determined, based upon the representations of Staff, the Engineers and the Contractors, that the circumstances said to necessitate the changes were not reasonably foreseeable at the time the contracts were signed, the Change Orders are germane to the original contracts as signed and/or the Change Orders are in the best interest of the DuPage Water Commission and authorized by law.

SECTION TWO: This Resolution shall constitute the written determination required by Section 33E-9 of Article 33E of the Criminal Code of 1961 and shall be in full force and effect from and after its adoption.

SECTION THREE: This Resolution shall be in full force and effect from and after its adoption.

	Aye	Nay	Absent	Abstain
Cuzzone, N.				
Fennell, J.				
Greaney, S.				
Honig, A.				
Noonan, T.				
Novotny, D.				
Pruyn, J.				
Romano, K.				
Russo, D.				
Saverino, F.				
Suess, P.				
Van Vooren, D.				
Zay, J.				

ADOPTED THIS _____ DAY OF _____, 2025.

James F. Zay, Chairman

ATTEST:

Danna Mundall, Clerk

Board/Resolutions/2025/R-67-25.docx

EXHIBIT A

DWC Book Rd

1

Revised Scope 4: Per August 11 Request

DATE: August 13, 2025

Location:

ITEM #	PAY ITEM DESCRIPTION	QUANTITY	UN OF MSRE	BID	
				UNIT PRICE	TOTAL
B1	54-inch PCCP Water Main by Open Cut	14,002.00	LF	1,281.75	17,947,063.50
B1.5	54-inch PCCP Water Main by Open Cut -Trans Area	1,051.00	lf	4,142.00	4,353,242.00
B1.6	Trench Backfill for Open Cut in Trans Areas	11,259.00	TON	54.00	607,986.00
B1.7	Harness Clamp Premium (For Open Cut Trans Area if needed)	320.00	LF	126.00	40,320.00
B2	54-inch PCCP Water Main by Trenchless Construction	553.00	LF	11,700.00	6,470,100.00
1	Mobilization	1.00	LS	2,838,000.00	2,838,000.00
2	Temporary Field Office	18.00	MONTH	8,000.00	144,000.00
10	48" Btrfly Vlv w/Actuator MH (75th St. 25+00 (Owner Spld)	0.00	LS	1,000,000.00	0.00
10.5	48" BFV w/Acttr MH (75th St. 26+12 (Owner Spld) RVSD Loc	1.00	LS	500,000.00	500,000.00
11	48" Btrfly Vlv w/Actuator MH (75th St. 29+25 (Owner Spld)	0.00	LS	900,000.00	0.00
12	48" Btrfly Vlv wActr MH & Dsnfctn Bypass Assmbly (Book Rd) (Owner-Frn	1.00	LS	500,000.00	500,000.00
13	54" Btrfly Vlv w/Actuator MH (Owner Furnished)	2.00	EA	400,000.00	800,000.00
14	54" Rmt Btrfly Vlv w/Vault (Owner Furnished)	1.00	EA	450,000.00	450,000.00
18	Air Release and Access Manhole (Type 1)	5.00	EA	60,000.00	300,000.00
19	Air Release and Access Manhole (Type 2)	9.00	EA	75,000.00	675,000.00
21	Blow-Off Valve w/ Manhole (36" and Larger Pipe)	9.00	EA	85,000.00	765,000.00
39	48" PCCP WM Open Cut (Book Rd 752+60-756+64)	430.00	LF	1,000.00	430,000.00
40	48" PCCP WM Trnchlss (Book Rd 756+64-758+52)	188.00	LF	15,000.00	2,820,000.00
47	75th Street Cnnctn to Ex DWC 48"PCCP (25+00)	0.00	LS	1,000,000.00	0.00
48	75th Street Cnnctn to Ex DWC 48"PCCP (26+22)	1.00	LS	1,500,000.00	1,500,000.00
49	75th Street Cnnctn to Ex DWC 48"PCCP (29+25)	0.00	LS	1,000,000.00	0.00
50	30" Stub for Future Connection	1.00	LS	100,000.00	100,000.00
52	Rmv 54"Tst Plg Cnnct to Ex 54"WM (Adj Contract)	1.00	EA	50,000.00	50,000.00
53	Trench Backfill (Select Material)	39,240.00	CY	1.00	39,240.00
55	Cathodic Protection System	1.00	LS	300,000.00	300,000.00
56	Earth Excavation	4,561.00	CY	30.00	136,830.00
57	Aggregate Base Course Type B 2"	760.00	SY	8.00	6,080.00
58	Aggregate Base Course Type B 4"	70.00	SY	10.00	700.00
59	Aggregate Base Course Type B 6"	26,994.00	SY	10.00	269,940.00
61	Bituminous Materials (Prime Coat)	57,142.00	LB	0.01	571.42
62	Bituminous Materials (Tack Coat)	27,166.00	LB	0.01	271.66
63	HMA Binder Course IL19 N50	14,651.00	TON	76.00	1,113,476.00
65	HMA Surface Course IL-9.5 Mix D N50	6,995.00	TON	80.00	559,600.00
72	PCC Driveway Pavement 8"	70.00	SY	100.00	7,000.00
74	PCC Sidewalk 6"	6,720.00	SF	14.00	94,080.00
75	Detectable Warnings	400.00	SF	40.00	16,000.00
76	Pavement Removal	26,184.00	SY	16.00	418,944.00
78	HMA Surface Removal 1 3/4"	34,959.00	SY	2.15	75,161.85
79	Driveway Pavement Removal	430.00	SY	16.00	6,880.00
80	Combination Curb and Gutter Removal	3,630.00	LF	10.00	36,300.00
81	Sidewalk Removal	6,590.00	SF	3.00	19,770.00
83	Comb Curb & Gutter Type B-6.12	3,630.00	LF	28.00	101,640.00
88	Steel Plate Beam Guardrail Type A 6' Posts	50.00	LF	48.00	2,400.00
89	Long-Span Guardrail over Culvert 12'6" Span	30.00	LF	65.00	1,950.00
90	Traffic Barrier Terminal Type 1B	2.00	EA	2,300.00	4,600.00
91	Traffic Barrier Terminal Type 2	2.00	EA	1,700.00	3,400.00

DWC Book Rd

2

Revised Scope 4: Per August 11 Request

DATE: August 13, 2025

Location:

ITEM #	PAY ITEM DESCRIPTION	QUANTITY	UN OF MSRE	BID	
				UNIT PRICE	TOTAL
92	Guardrail Removal	160.00	LF	7.00	1,120.00
93	Pavement Marking Blackout Tape 6"	1,220.00	LF	4.00	4,880.00
94	Changeable Message Sign	2,920.00	CAL DAY	25.00	73,000.00
95	Short Term Pavement Marking	9,190.00	LF	2.00	18,380.00
96	Short Term Pavement Marking Removal	3,610.00	SF	3.00	10,830.00
97	Temp Pvmnt Marking Letters & Symbols - Paint	190.00	SF	3.00	570.00
98	Tmp Pvmnt Mrkng - Line 4" - Paint	23,150.00	LF	0.50	11,575.00
100	Tmp Pvmnt Mrkng - Line 24" - Paint	100.00	LF	3.00	300.00
101	Tmp Pvmnt Mrkng - Line 4" - Type IV Tape	6,230.00	LF	3.00	18,690.00
103	Temporary Concrete Barrier	2,170.00	LF	30.00	65,100.00
104	Impct Attntns Tmp (Filly Rdrcvt Nrrw) Test Level 2	4.00	EA	6,500.00	26,000.00
105	Relocate Sign Panel Assembly - Type A	21.00	EA	255.00	5,355.00
106	Thrmc Pvmnt Mrkng - Letters & Symbols	1,040.00	SF	6.00	6,240.00
107	Thermo Pvmnt Mrkng - Line 4"	64,350.00	LF	1.00	64,350.00
108	Thermo Pvmnt Mrkng - Line 6"	4,910.00	LF	1.50	7,365.00
109	Thermo Pvmnt Mrkng - Line 12"	2,460.00	LF	3.50	8,610.00
110	Thermo Pvmnt Mrkng - Line 24"	300.00	LF	7.00	2,100.00
111	Pavement Marking Removal - Grinding	16,010.00	SF	1.00	16,010.00
112	Undrgnd Cndt Glvnz Steel 2" Dia	1,380.00	LF	28.00	38,640.00
113	Handhole	3.00	EA	2,600.00	7,800.00
114	Maintenance of Existing Traffic Signal Installation	6.00	EA	2,900.00	17,400.00
115	Elctric Cable in Cnduit Lead-In No.14 One Pair	820.00	LF	2.00	1,640.00
116	Drill Existing Handhole	2.00	EA	482.00	964.00
117	Deetctor Loop Type 1	320.00	LF	74.00	23,680.00
118	Detector Loop Replacement	1,770.00	LF	55.00	97,350.00
119	Temporary Traffic Signal Installation	5.00	EA	20,000.00	100,000.00
120	Modify Existing Controller	6.00	EA	2,500.00	15,000.00
122	Remove Existing Handhole	3.00	EA	660.00	1,980.00
123	Class D Patches 12-inch	1,858.00	SY	130.00	241,540.00
125	Mailbox Remove and Replace	2.00	EA	500.00	1,000.00
127	Temporary Access (Private Entrance)	12.00	EA	500.00	6,000.00
128	Temporary Access (Commercial Entrance)	2.00	EA	1,000.00	2,000.00
129	Temporary Access (Road)	10.00	EA	1,000.00	10,000.00
130	Traffic Control and Protection (Special)	1.00	LS	189,135.30	189,135.30
131	HMA Driveway Pavement 4"	330.00	SY	36.00	11,880.00
133	Drainage & Utility Structures to be Adjusted	10.00	EA	1,000.00	10,000.00
134	Drainage & Utility Structures to be Reconstructed	1.00	EA	5,000.00	5,000.00
135	Temporary Information Signing	160.00	SF	25.00	4,000.00
136	Temporary Pavement	740.00	SY	43.00	31,820.00
137	Temporary Traffic Signal Timing	27.00	EA	650.00	17,550.00
138	HMA Surface Removal - Butt Joint	796.00	SY	1.00	796.00
139	Telescoping Steel Sign Support	25.00	LF	25.00	625.00
140	Metal Post - Type A	25.00	LF	25.00	625.00
141	Erosion Control Seeding Lawn Mix (Class 1)	830.00	LB	30.00	24,900.00
142	Erosion Control Seeding Roadside Mix (Class 2)	660.00	LB	28.00	18,480.00
145	High Visibility Safety Fence	30,100.00	LF	6.00	180,600.00

DWC Book Rd

3

Revised Scope 4: Per August 11 Request

DATE: August 13, 2025

Location:

ITEM #	PAY ITEM DESCRIPTION	QUANTITY	UN OF MSRE	BID	
				UNIT PRICE	TOTAL
146	Tree and Shrubbery Protection	130.00	EA	500.00	65,000.00
150	Dual Fence Barrier (Hi Vis GeoTex Outer Fence)	3,830.00	LF	10.00	38,300.00
151	Silt Fence	11,000.00	LF	6.00	66,000.00
152	Inlet Protection Curb	15.00	EA	300.00	4,500.00
153	Inlet Protection Area	40.00	EA	300.00	12,000.00
163	Rmv & Rplc 8" San SWR (w/C900 DR25 PVC)	130.00	LF	359.00	46,670.00
171	Rmv & Rplc 18" FES	1.00	EA	25,800.00	25,800.00
176	Replace 10" Storm (w/C900 DR25 PVC)	240.00	LF	225.00	54,000.00
177	Replace 12" Storm (w/C900 DR25 PVC)	630.00	LF	255.00	160,650.00
178	Replace 15" Storm (w/C900 DR25 PVC)	191.00	LF	281.00	53,671.00
180	Replace 18" Storm (w/C900 DR25 PVC)	260.00	LF	296.00	76,960.00
182	Replace 24" Storm (w/C900 DR25 PVC)	270.00	LF	385.00	103,950.00
190	Rmv & Rplc 30" Storm Clvrt w/ 30" CMP Clvrt	60.00	LF	385.00	23,100.00
193	Remove and Replace Catch Basin	21.00	EA	7,000.00	147,000.00
195	Remove and Replace Inlet	1.00	EA	7,000.00	7,000.00
196	Connection to Existing Sewer Structure	42.00	EA	1,200.00	50,400.00
197	Rmv & Rplc Dual Storm Clvrts 36" & Hdwwls	1.00	LS	104,000.00	104,000.00
198	Xing Ex 58" x 91" Elliptical Conc Pipe (Book Rd)	1.00	LS	182,000.00	182,000.00
210	Vertical Drop Structures (Sta 619+71 - 623+24)	0.00	LS	460,000.00	0.00
211	Vertical Drop Structures (Sta 677+21 - 679+55)	0.00	LS	460,000.00	0.00
212	Vertical Drop Structures (Sta 700+39 - 708+30)	0.00	LS	460,000.00	0.00
213	Vertical Drop Structures (Sta 724+89 - 726+79)	0.00	LS	460,000.00	0.00
IND1	Exploratory Excavation	1,000.00	CF	50.00	50,000.00
IND2	Exploratory Excavation, Vacuum	12.00	EA	1,886.00	22,632.00
IND3	Adjust Water Service Line	100.00	LF	254.00	25,400.00
IND4	Adjust Sewer Service Line	100.00	LF	506.00	50,600.00
ALL1	Allwnc City of Naperville DPU-E Electric Services	1.00	LS	25,000.00	25,000.00
					0.00

BID = 47,301,059.73

Notes on Revised Scope(s) based on August 11th Request:

- All pipe proposed is PCCP
- Trenchless pricing is using the Auger & Jack method. Not full face closure, if conditions warrant it we may need to be paid from an allowance for Dewatering, Rock/Boulder removal, sheeting etc.
- We do not include any costs dealing with the 2' above 50 year flood plain, or 2' waterproof liner. Trenchless pits will be installed with either standard trench shield or slide rail systems
- We do not include any costs dealing with special or non-special waste. (Hauling, testing, monitoring, disposal, etc.)
- The PCCP pipe will be used in trenchless systems will be supplied with "Donut" skids instead of spacers
- We do not include any clsm other than at air release, blowoffs and valves and clsm bedding for the 75th st connection. All other pipe to be bedded with CA6 and CA6 TBF (pay item)
- We have adjusted the bid quantity of the extra pavement as called for in the July 23rd email for 83rd st and a small portion at 95th. All pavement removal and restoration to be paid through bid items. We do not include any incidental pavement.
- We have included only costs for a \$50,000.00 bond each for DuPage County and Naperville. That is what our conversations and history with Naperville has shown. We do not include a performance bond for 110% of the project value
- Open Cut pipe in transition areas are priced without dewatering or sheeting, if needed to be paid from allowance
- Prices are based on raising the Trenchless crossings at 87th (183' per original design) and the revised design for 95th St. (180')
- All permits related to the revised scope are the responsibility of the owner
- Pay Item B1.6 Trench Backfill for Open Cut transition areas has been added. This item is to be paid per ton used per tickets. Estimated bid quantity has been figured by using an average width of 14' and depth measured from 1' over the top of the pipe to flush with existing pavement.
- Benchmark will provide engineering backup that the 48" cut in section on 75th can be installed as PCCP.

Possible Allowances (All allowance work to be paid per IDOT force account) dollar values are estimates if any of the work is required.

Dewatering at revised trenchless areas \$275,000.00 (for dewatering system at 1 Jacking pit and 1 receiving pit, with 25 days of pumping. Dewatering along route of trenchless is not included, and would be an additional T&M cost)

Rock/Boulder removal \$50,000.00 (for an estimated 6 days of boulder removal)

Closed Face Tunnel (excluding microtunneling) 95th \$500,000.00

Open Cut Pipe (transition areas) Dewatering \$300,000.00 (for an estimated 200' long system, with 25 days of pumping)

Open Cut sheeting (transition areas) \$550,000 (to install and remove 12,000sf of sheeting)

DuPAGE WATER COMMISSION
CHANGE ORDER

SHEET 1 OF 3

PROJECT NAME: West Transmission Main Along Book Rd From 75th St to the ComEd R.O.W.

CHANGE ORDER NO. 01

LOCATION: DuPage County, Illinois

CONTRACT NO. TW-6/25
Section1 (Book Road)

CONTRACTOR: D. Construction, Inc. & Benchmark Construction Co., Inc.

DATE: 8/21/25

I. A. DESCRIPTION OF CHANGES INVOLVED:

1. Conversion of trenchless installation locations to open-cut where feasible
2. Reduced depth of installation for remaining trenchless locations
3. Removal of a butterfly valve to the west of the connection tee
4. Relocation of a butterfly valve to the east of the connection tee
5. Inclusion of an owner-initiated allowance for risk mitigation

B. REASON FOR CHANGE:

1. The cost of trenchless installation far exceeded the estimated cost. As such, an effort was made to re-design the trenchless installation locations where feasible and to convert them to an open-cut installation, which is far more cost effective.
2. Though all areas of trenchless installation were reviewed, field conditions (buys intersections, large culverts, etc.) dictated that not all trenchless locations could be converted to open-cut installations. Those areas that are to remain trenchless installations were reduced in depth wherever possible to further reduce construction costs.
3. Two butterfly valves were proposed, one on each side of the connection tee. Due to the substantial costs received for these installations, both were reviewed to determine possible measures of cost reduction. Upon review, one of the valves was determined to be redundant to existing valves within the Commission's existing distribution network and the cost of installation could not be recommended. This valve was reduced from the scope of work.
4. Of the two aforementioned butterfly valves, the second one was determined to be necessary and could not be removed from the scope of work. However, the location of

installation was revised in order to reduce the amount of excavation and (existing) pipe replacement needed and several associated appurtenances were removed from the scope of work.

5. By converting additional segments of pipe installation from trenchless to open-cut and in reducing the depth of remaining trenchless installations, the contractor is now responsible for managing field conditions that were not contemplated as part of the bid process. In order to manage these new field conditions and to only cover costs for any challenges actually realized during construction, an owner-initiated allowance has been included.

C. REVISION IN CONTRACT PRICE:

See attached for Contract price revisions.

II. CHANGE ORDER CONDITIONS:

1. The Contract Period established in the Contract, as signed or as modified by previous Change Orders, is hereby extended for 0 calendar days, maintaining the final Contract Completion Date of December 31, 2026.
2. Any Work to be performed under this Change Order shall be provided, performed, and completed in full compliance with, and as required by or pursuant to, the Contract, including any Specifications and Contract Drawings for the Work to be performed under this Change Order and for Work of the same type as the Work to be performed under this Change Order, and as specified in the preceding "Description of Changes Involved."
3. Unless otherwise provided herein, all Work included in this Change Order shall be guaranteed and warranted as set forth in, and Contractor shall not be relieved from strict compliance with, the guaranty and warranty provisions of the Contract.
4. All Work included in this Change Order shall be covered under the Bonds and the insurance coverages specified in the Contract. If the Contract Price, including this Change Order, exceeds the Contract Price set forth in the Contract, as signed, by twenty percent (20%), Contractor shall submit to Owner satisfactory evidence of such increased coverage under the Bonds if requested by Owner.

III. ADJUSTMENTS IN CONTRACT PRICE:

1.	Original Contract Price	\$67,148,000.00
2.	Net <u>Increase/Decrease</u> due to all previous Change Orders	\$0.00
3.	Contract Price, not including this Change Order	\$67,148,000.00

4.	<u>Increase/Decrease</u> to Contract Price due to this Change Order	-\$18,846,940.27
5.	Contract Price including this Change Order	\$48,301,059.73

RECOMMENDED FOR ACCEPTANCE:

CONSULTING ENGINEERS:

Lockwood, Andrews and Newnam, Inc.

By: _____ (_____)
 Signature of Authorized Representative Date

ACCEPTED: By my authorized signature below, being first duly sworn on oath, I certify on behalf of Contractor that this Change Order does not authorize or necessitate an increase in the price of any subcontract under the Contract that is 50% or more of the original subcontract price.

CONTRACTOR:

D. Construction Inc.

By: _____ (_____)
 Signature of Authorized Representative Date

CONTRACTOR:

Benchmark Construction Co., Inc.

By: _____ (_____)
 Signature of Authorized Representative Date

DuPAGE WATER COMMISSION:

By: _____ (_____)
 Signature of Authorized Representative Date



Resolution #: R-71-25

Account: 01-60-663100

Approvals: *Author / Manager / Finance / Admin*

D.P. RCB CAP PDM

REQUEST FOR BOARD ACTION

Date: 9/11/2025

Description: **A Resolution to Approve & Ratify Certain Work Authorization Orders Under Quick Response Contract QR-13/25.**

Agenda Section: Engineering & Construction

Originating Department: Pipeline & Remote Facilities

The Commission entered into certain agreements dated June 30, 2025, with John Neri Construction Co. Inc., Rossi Contractors Inc., and Benchmark Construction Co., Inc. for Quick Response construction work, as needed, through the issuance of Work Authorization Orders (Contract QR-13/25) and ending on June 30, 2027. Resolution No. R-71-25 would approve the following Work Authorization Orders under the Quick Response Contracts.

Work Authorization Order No. 003 to Benchmark Construction Co, Inc.

The work authorization was issued, and work began, prior to Board approval and was necessary to repair a leaking 30" diameter steel water main located in the City of Wheaton. Excavation indicated that the apparent cause of the leak was the result of an unidentified contractor damaging the protective coating on the DWC pipe many years ago, which resulted in accelerated corrosion and the subsequent leak.

Since Benchmark Construction Co., Inc. was able to mobilize immediately upon request for repair work, Work Authorization Order No. 13.003 was issued to Benchmark Construction Co., Inc.

Resolution R-71-25 ratifies approval of Work Authorization Order No. 13.003 to Benchmark Construction Co., Inc. for the work as described in Exhibit 1 to this resolution, at the cost of \$79,403.69. Work included traffic control, removal and replacement of concrete pavement, dewatering, removal, replacement, disinfection, and commissioning of sections of damaged 30" steel pipeline.

Recommended Motion:

To adopt Resolution No. R-71-25.

RESOLUTION NO. R-71-25

**A RESOLUTION APPROVING CERTAIN WORK AUTHORIZATION ORDERS UNDER QUICK
RESPONSE CONTRACT QR-13/25**

WHEREAS, the DuPage Water Commission (the "Commission") entered into certain agreements dated June 30, 2025, with John Neri Construction Co., Inc., Rossi Contractors, Inc., and Benchmark Construction Co., Inc. for quick response construction work related to the Commission's Waterworks System (said being hereinafter collectively referred to as "Contract QR-13/25");

WHEREAS, Contract QR-13/25 is intended to allow the Commission to direct one or more or all the quick response contractors to perform quick response construction work, including without limitation construction, alteration, and repair related to the Commission's Waterworks System, as needed through the issuance of Work Authorization Orders; and

WHEREAS, the scope for quick response construction work could not have been reasonably foreseen at the time the contracts were signed;

NOW, THEREFORE, BE IT RESOLVED by the Board of Commissioners of the DuPage Water Commission as follows:

SECTION ONE: The foregoing recitals are by this reference incorporated herein and made a part hereof as findings of the Board of Commissioners of the DuPage Water Commission.

SECTION TWO: The work Authorization Orders attached hereto and by this reference incorporated herein and made a part hereof as Exhibit 1 shall be and hereby are approved and, if already issued, ratified because the Board of Commissioners of the DuPage Water Commission has determined, based upon the representations of staff, that the circumstances said to necessitate the work

Authorization Orders were not reasonably foreseeable at the time the contracts were signed, the Work Authorization Orders are in the best interest of the DuPage Water Commission and authorized by law.

SECTION THREE: This Resolution shall be in full force and effect from and after its adoption.

	Aye	Nay	Absent	Abstain
Cuzzone, N.				
Fennell, J.				
Greaney, S.				
Honing, A.				
Noonan, T.				
Novotny, D.				
Pruyn, J.				
Romano, K.				
Russo, D.				
Saverino, F.				
Suess, P.				
Van Vooren, D.				
Zay, J.				

ADOPTED THIS _____ DAY OF _____, 2025.

James F. Zay, Chairman

ATTEST:

Danna Mundall, Clerk

Board/Resolutions/2025/R-71-25.docx

EXHIBIT 1

QR-13/25 Work Authorization Order No 13.003

Benchmark Construction Co., Inc. Invoice No. 1520-01

WORK AUTHORIZATION ORDER

SHEET 1 OF 2

CONTRACT QR-13/25: QUICK RESPONSE CONTRACT

WORK AUTHORIZATION ORDER NO.: QR-13.003

LOCATION:

President Street in the city of Wheaton.

CONTRACTOR:

Benchmark Construction Co., Inc.

DESCRIPTION OF WORK:

Provide and maintain traffic and pedestrian controls; dewater isolated section of main; excavate, locate, and repair the source of a leak on a Commission 30" diameter steel water main; backfill the excavation with suitable materials; disinfect the isolated section of water main, restore all disturbed areas to the satisfaction of the permitting highway authority, and all other work as necessary or as directed by the Commission.

REASON FOR WORK:

To repair a leak in a 30" diameter steel water main.

MINIMUM RESPONSE TIME:

N/A

**COMMISSION-SUPPLIED MATERIALS, EQUIPMENT
AND SUPPLIES TO BE INCORPORATED INTO THE WORK:**

Section of 30" diameter steel pipe

THE WORK ORDERED PURSUANT TO THIS WORK AUTHORIZATION ORDER

☐ IS ☒ IS NOT PRIORITY WORK

SUPPLEMENTARY NOTIFICATION OF POTENTIALLY HAZARDOUS CONDITIONS:

N/A

SUBMITTALS REQUESTED:

N/A

SUPPLEMENTARY CONTRACT SPECIFICATIONS AND DRAWINGS:

N/A

DUPAGE WATER COMMISSION

By:


Signature of Authorized
Representative

DATE:

8-13-25

CONTRACTOR RECEIPT ACKNOWLEDGED AND DESIGNATION OF SAFETY REPRESENTATIVE:

By:


Signature of Authorized
Representative

Safety Rep:

Mark Atkins 630 862 5354

Name and 24-Hr Phone No.

DATE:

8/12/25

Location: 1211 N President St- Wheaton
Dates of Work: 8/11/2025 thru 8/29/2025

Invoice #: **2520-01**
Date: 9/2/2025

EQUIPMENT	Hours	Rate	Amount
Trench Box- Rental	1.00	974.56	974.56
Ford F450 Service Truck	39.00	55.53	2,165.67
Komatsu 228	36.00	90.64	3,263.04
McCann 3" Trash Pump Rental	1.00	287.50	287.50
Bobcat Skidsteer	44.00	82.24	3,618.56
Lowboy Truck & Trailer	16.00	98.89	1,582.24
Ford Econoline Van & Saw	28.55	3.59	102.49
McCann Roller Rental	1.00	554.00	554.00
			0.00
Subtotal Equipment			12,548.06
10% Mark up on equipment			\$1,254.81
TOTAL EQUIPMENT			13,802.87

MATERIAL	Qty.	U of M	Price	Amount
Vulcan Materials- Aggregate	1	LS	1,006.50	1,006.50
Beverly Materials- Aggregate	1	LS	346.50	346.50
Mid-American Water Sewer Materials	1	LS	1,890.02	1,890.02
Beverly Dump Fees	1	LS	1,010.00	1,010.00
Allied Asphalt HMA	1	LS	1,621.12	1,621.12
Equipment Move Permits	1	LS	250.00	250.00
Subtotal Material				6,124.14
10% Mark up on material purchased				612.41
TOTAL MATERIAL				6,736.55

SUBCONTRACTORS	Qty.	U of M	Price	Amount
Advanced Welding	1	INV	6,127.00	6,127.00
Smith Maintenance	1	INV	266.25	266.25
TAT Enterprises	1	INV	18,635.00	18,635.00
L&B Cartage	42	HR	110.00	4,620.00
Utility Transport	1	LS	1,229.25	1,229.25
LRS Portable Toilet	1	LS	245.30	245.30
				0.00
Subtotal Subs.				31,122.80
10% Mark up on Subs.				3,112.28
TOTAL SUBCONTRACTOR				34,235.08

TOTAL AMOUNT DUE **\$79,403.69**

Please remit to: 2260 Southwind Blvd., Bartlett, IL 60103

#2520

OFFICE COPY

14028

EXTRA WORK AUTHORIZATION/TIME AND MATERIAL RECORD

COMPANY NAME Bench Mark Construction DATE 8-11-25 SHEET 1 OF 1JOB NO. DWC LOCATION WheatonFOREMAN _____ WORK DIRECTED BY Dave TITLE _____DESCRIPTIONS OF OPERATIONS Repair 30" WM

LABOR

TOTALS

EMPLOYEE'S NAME	EMP. NO.	OCCUPATION	RATE	HOURS WORKED		AMOUNT	
				REG.	O.T.		
<u>Martin Kopper</u>		<u>Foreman</u>		<u>8</u>	<u>1.5</u>		
<u>Jon Seigel</u>		<u>Operator</u>		<u>8</u>	<u>2</u>		
<u>John Eger</u>		<u>operator</u>		<u>8</u>	<u>2</u>		
<u>Tony Vargas</u>		<u>Laborer</u>		<u>8</u>	<u>1.5</u>		
<u>Hector Hernandez</u>		<u>Laborer</u>		<u>8</u>	<u>1.5</u>		
SUBTOTAL							
UNION BENEFITS							
LABOR MARK-UP							
LABOR BURDEN							

MATERIALS USED

TOTAL LABOR

ITEM	UNIT	SOURCE	QUANTITY	UNIT PRICE	AMOUNT
<u>3" Trash Pump</u>	<u>1ea</u>	<u>McLann Rental</u>	<u>1</u>		
<u>Trucking</u>	<u>hr</u>	<u>L & B</u>	<u>15.5 hrs</u>		
<u>Dirt Dump</u>	<u>Load</u>	<u>Beverly</u>	<u>5 Loads</u>		
<u>Trench Box Rental</u>	<u>ea</u>	<u>NTS</u>			<u>1,316 -</u>
SUBTOTAL					
MATERIAL MARK-UP					

EQUIPMENT

TOTAL MATERIAL

EQUIP. NO.	DESCRIPTION	HOURS WORKED	RATE	AMOUNT
	<u>2025 F450 Service Truck</u>	<u>9.5</u>		
	<u>PC 228 Excavator</u>	<u>9.5</u>		
	<u>Bobcat</u>	<u>9.5</u>		
	<u>Ford Van w/ Trailer & Sew</u>	<u>9.5</u>		
	<u>Generator & 3" Elec Pump</u>	<u>24</u>		

Kenworth Truck & Low boy w/ Driver 8 - \$250 permit

ACCEPTANCE/VERIFICATION _____

TOTAL EQUIP. _____

TITLE John Clippin DATE _____

TOTAL CHARGES \$46 of 482

EXTRA WORK AUTHORIZATION/TIME AND MATERIAL RECORD

COMPANY NAME Benchmark Construction DATE 8-12-25 SHEET 1 OF 1

JOB NO. DWC LOCATION Wharton

FOREMAN Marty Kippen WORK DIRECTED BY Dave TITLE _____

DESCRIPTIONS OF OPERATIONS 30" W.M. Repair

LABOR

TOTALS

EMPLOYEE'S NAME	EMP. NO.	OCCUPATION	RATE	HOURS WORKED REG.	O.T.	AMOUNT		
Marty Kippen		Foreman		8	3			
Jon Seigel		Operator		8	2			
Tony Vargas		Laborer		8	2.5			
Hector Hernandez		Laborer		8	2.5			
SUBTOTAL								
UNION BENEFITS								
LABOR MARK-UP								
LABOR BURDEN								

MATERIALS USED

TOTAL LABOR

ITEM	UNIT	SOURCE	QUANTITY	UNIT PRICE	AMOUNT		
CA-7 Dirt Dump	7 1/2' x 4'	Beverly	21 tons	1-load			
Tracking	hr	L & B	11 hrs				
12" DIP	ea	Mid American	20'				
12" nonsteer	ea	Mid American	1 ea				
SUBTOTAL							
MATERIAL MARK-UP							

EQUIPMENT

TOTAL MATERIAL

EQUIP. NO.	DESCRIPTION	HOURS WORKED	RATE	AMOUNT		
	2025 F450 Service Truck	11				
	PC 228 excavator	10				
	Bobcat	10				
	2 Road Plates - 1- 8' x 20' / 2- 8' x 10'	4 Days				
	Tight Shredding	3 Days				
	Bobcat Trailer	11 hrs				

ACCEPTANCE/VERIFICATION _____

TOTAL EQUIP. _____

TITLE Marty Kippen DATE _____

TOTAL CHARGES _____

EXTRA WORK AUTHORIZATION/TIME AND MATERIAL RECORD

COMPANY NAME Benchmark Construction DATE 8-13-25 SHEET 1 OF 1

JOB NO. DWC LOCATION Wharton

FOREMAN Marty Kypen WORK DIRECTED BY Dave TITLE _____

DESCRIPTIONS OF OPERATIONS 30" W.M. Repair

LABOR

TOTALS

EMPLOYEE'S NAME	EMP. NO.	OCCUPATION	RATE	HOURS WORKED REG.	O.T.	AMOUNT		
Marty Kypen		Foreman		8	.5			
Jon Seigel		Operator		8	1			
Tony Vargas		Laborer		8	.5			
Felix Delamora		Laborer		8	.5			
SUBTOTAL								
UNION BENEFITS								
LABOR MARK-UP								
LABOR BURDEN								

MATERIALS USED

TOTAL LABOR

ITEM	UNIT	SOURCE	QUANTITY	UNIT PRICE	AMOUNT		
FA-6/CA-6	TN	Unileen	40.12/40.37				
Bricks	ea	Mid American	20				
Mortar	ea	Mid American	1ea				
Trucking	hr	L & B	10 hrs				
SUBTOTAL							
MATERIAL MARK-UP							

EQUIPMENT

TOTAL MATERIAL

EQUIP. NO.	DESCRIPTION	HOURS WORKED	RATE	AMOUNT		
	2025 F450 Service Truck	8.5				
	PC 228	8.5				
	Bobcat	8.5				
	Sweeper					
	Remote Control Compactor	8.5				

ACCEPTANCE/VERIFICATION _____

TOTAL EQUIP. _____

TITLE Dan Chappin DATE _____

TOTAL CHARGES _____

EXTRA WORK AUTHORIZATION/TIME AND MATERIAL RECORD

COMPANY NAME Bench Mark Construction DATE 8-14-25 SHEET 1 OF 1JOB NO. DWC LOCATION WhartonFOREMAN Marty Kappen WORK DIRECTED BY Dave TITLE _____DESCRIPTIONS OF OPERATIONS 30" W.M. Repair

LABOR

TOTALS

EMPLOYEE'S NAME	EMP. NO.	OCCUPATION	RATE	HOURS WORKED REG.	O.T.	AMOUNT		
Marty Kappen		Foreman		8				
Jon Seigel		Operator		8	.5			
Tony Vargas		Laborer		8				
Hector Hernandez		Laborer		2				
SUBTOTAL								
UNION BENEFITS								
LABOR MARK-UP								
LABOR BURDEN								

MATERIALS USED

TOTAL LABOR

ITEM	UNIT	SOURCE	QUANTITY	UNIT PRICE	AMOUNT		
Roller	Day	O'Leary's Rental	1 Day				
Binder	TN	Allied					
Surface	TN	Allied					
Truck King	hr	LHB	1 hr				
SUBTOTAL							
MATERIAL MARK-UP							

EQUIPMENT

TOTAL MATERIAL

EQUIP. NO.	DESCRIPTION	HOURS WORKED	RATE	AMOUNT		
	F 450 Service Truck	8				
	Pc 228	8				
	Bobcat	8				
	Kenworth semi & Lowboy w/Driver	8				
	8250 permit					

ACCEPTANCE/VERIFICATION _____

TOTAL EQUIP.

TITLE Lane Chapman DATE _____

TOTAL CHARGES

COMPANY NAME Benchmark Construction DATE 8-15-25 SHEET 1 OF 1

JOB NO. DWC LOCATION Wharton

FOREMAN Marty Kipper WORK DIRECTED BY Dave TITLE _____

DESCRIPTIONS OF OPERATIONS Clean up from 30" Repair

TOTALS

EMPLOYEE'S NAME	EMP. NO.	OCCUPATION	RATE	HOURS WORKED REG.	O.T.	AMOUNT	
Marty Kupper		Foreman		8			
Jon Seigel		Operator		8	.5		
SUBTOTAL							
UNION BENEFITS							
LABOR MARK-UP							
LABOR BURDEN							

TOTAL LABOR

ITEM	UNIT	SOURCE	QUANTITY	UNIT PRICE		AMOUNT	
Street Sweeper							
Traffic Control		Smith	5 Days				
SUBTOTAL							
MATERIAL MARK-UP							

TOTAL MATERIAL

EQUIP. NO.	DESCRIPTION	HOURS WORKED	RATE		AMOUNT	
	Bulldozer & Sweeper	8				
	Truck & Bulldozer Trailer	2				

TOTAL EQUIP.

TOTAL CHARGES.

**RENTALS
SALES
REPAIRS**



1031 N. Cicero Ave. • Chicago, IL 60651

(773) 252-6600

Fax (773) 252-6650
www.olearysequipment.com
customerservice@olearysinc.net

INVOICE DATE: 08/27/25 Page 1

FINAL INVOICE

Customer: Benchmark Construction Inc. 2260 Southwind Blvd Bartlett IL 60103	Delivery Location: N. President St. & Just North Of E. Forest Dr. (See Pin) Wheaton IL	Ticket# Contract# 557755 Loc 100
Ordered by: Matt Reed 630-774-0539 Phone: W (630) 497-1700 W (630) 497-1700	PO/Job # Wheaton	Delivery/Out: 08/14/25 Thu JB1 Pick-up/In: 08/14/25 Thu KM1

Qty	Item	Description	Daily	Weekly	4 Week	Total
Picked up / Rental picked up off rent 8/14/25 equipment checked in by russ rental period charged is for 1 day						
1	1835-0091	Roller, 36", Double Drum, Gas				290.00
	Meter In:	6.60	Meter Out:	5.10	Surcharge:	0.00
	Serial #:	10000303VPA037771	Model #:	CC900G		
		full of water				
2	FUEL003	Gasoline, Per Gallon			7.00	14.00
1	DELO2	Equipment Rental Pickup Fee			125.00	125.00
1	DELO1	Equipment Rental Delivery Fee			125.00	125.00
----- Payments -----						

Note: New 2025 Tax Rates

Rentals	290.00
Sales	14.00
Delivery	125.00
Pickup	125.00
Labor	0.00
Damage Waiver	0.00
Trans Tax	0.00
Sales Tax	24.64
Total	578.64

YOU ARE CHARGED FOR TIME EQUIPMENT IS IN YOUR POSSESSION. "WE CHARGE FOR TIME OUT NOT TIME USED."	A CLEANING CHARGE WILL BE MADE ON ITEMS RETURNED DIRTY. EQUIPMENT RECEIVED SUBJECT TO CONDITIONS AND TERMS ON THE REVERSE SIDE OF THIS CONTRACT.
THE VALUE OR PURCHASE PRICE OF EQUIPMENT IS _____ NO RENTAL SHALL BE APPLIED AGAINST PURCHASE EXCEPT AS FOLLOWS _____	

I acknowledge receipt of the above equipment and represent that if I am not the Lessee, I represent the above indicated Lessee and am authorized to sign in the Lessee's behalf.

X _____ X _____
SIGNATURE PRINTED NAME
CELL PHONE X _____

Check Out _____ Amount Billed 578.64
THIS IS YOUR CONTRACT READ BOTH SIDES BEFORE SIGNING 451 of 482



Remit To:
McCann Industries, Inc.
PO Box 5609
Carol Stream, IL 60197-5609

Exceeding Expectations
Equipment • Supplies • Service • Rentals
McCannOnline.com

Ship To: BENCHMARK CONSTRUCTION CO
773-354-9423

Invoice To: BENCHMARK CONSTRUCTION CO., INC
2260 SOUTHWIND BLVD
BARTLETT IL 60103

Branch 01 - ADDISON, IL		
Date 08/15/2025	Time 13:58:00 (O)	Page 1
Account No BENCH002	Phone No 6304971700	Inv No R10658
Freight Terms WILL CALL	Purchase Order/Job Number WHEATON 252001	
Tax ID No	Payment Terms NET 30	
		Salesperson LVA /

RENTAL INVOICE

Description INVOICE #: R10658 For Contract #: 010552 Amount

Billing #: 1 Covering From 08/11/2025 to 08/13/2025

JAY PICKED UP ORDER 8/11/25 9:00AM

:

JOE RETURNED RENTAL 08/13/25 12:32PM

:

Thank you for choosing McCann Rents for your rental needs

WK PT3A

3" GAS TRASH PUMP Charge for usage of 2 DAYS 130.00
Stock #: 003878 Serial #: 24446494
Date Out: 08/11/2025 08:27 Date Returned: 08/13/2025 12:32
Rates: 65.00/DAY 260.00/WEEK 780.00/MONTH

3" X 50' DISCHA Charge for usage of 2 DAYS 80.00
Part/Su 3205 2 PIECES
Date Out: 08/11/2025 08:27 Date Returned: 08/13/2025 12:32
Rates: 20.00/DAY 60.00/WEEK 180.00/MONTH

3" X 20' SUCTIO Charge for usage of 2 DAYS 40.00
Part/Su 3204 1 PIECE
Date Out: 08/11/2025 08:27 Date Returned: 08/13/2025 12:32
Rates: 20.00/DAY 60.00/WEEK 180.00/MONTH

Damage Waiver: 37.50
Subtotal: 287.50
SIA1-Sales/Rental Tax -IL-Addison 8.5%: 21.25
ON ACCOUNT: 308.75

X

543 S. Rohlwing Road
Addison, IL 60101
(630) 627-0000
23921 S. Northern Illinois Drive
Channahon, IL 60410
(815) 467-4480

250 E. Frontage Road
Bolingbrook, IL 60440
(630) 739-7770
1360 N. Rend Road
Wauconda, IL 60084
(847) 526-9444

2350 S. Laflin Street
Chicago, IL 60608
(312) 942-9200
1133 Indianapolis Boulevard
Schererville, IN 46375
(219) 865-6545

4701 W. 137th Street
Crestwood, IL 60445
(708) 587-3110
14077 Esther Ave
Mishawaka, IN 46545
(574) 406-6800

Received By

1064 Franklin Street
Marengo, IL 60443
(616) 371-7250
8900 Louisiana St
Merrillville, IN 46410
452 06 48200



Chicago
249 West Lake Street
Elmhurst IL 60126
United States

Dispatch Inquiry 630-832-8068
Billing Inquiry 888-833-3777

Invoice

Invoice Number: 1122519

Date: 8/20/2025

Benchmark Construction
2260 Southwind Blvd
Attn: Karen
Bartlett IL 60103
United States

Project Name: BENCHMARK CONSTRUCTION-
Ordered By: Matt Reed
Phone: 630-774-0539
Job Site Location:
N PRESIDENT ST & E PRAIRIE AVE
WHEATON IL 60187

Job#:
PO Number:
JS Contact: Matt Reed
Job Site Phone: 630-774-0539

Office Phone: (630) 497-1700
Cust ID: N000009780

Sales Person: Dominique Davis

DominiqueDavis@ntsafety.com

Delivery Instructions:

DELIVER 8/11/25

Rental Contract Number: RC00741048

Contract Start Date: 8/11/2025

Status	Qty	Item Description and Rate	Days	From Date	Thru Date	Rate	Rate Ext
Rent Stopped	1.00	4x10 Steel Trench Box 4" Wall \$100.00/Day \$300.00/Week \$900.00/4 Week 1 DAYS MIN Serial: TB149859S	3	8/11/2025	8/13/2025	\$300.00	\$300.00
Rent Stopped	4.00	8.0 ft of 8 in Round Spreader \$4.00/Day \$12.00/Week \$36.00/4 Week 1 DAYS MIN	3	8/11/2025	8/13/2025	\$12.00	\$48.00
Rent Stopped	4.00	STACKING PINS FOR BOXES \$1.50/Day \$4.50/Week \$13.50/4 Week 1 DAYS MIN	3	8/11/2025	8/13/2025	\$4.50	\$18.00

Qty	Description	Reg Rate	Labor Subtotal
1.00	Delivery Crane Truck Full Size	\$275.00	\$275.00
1.00	Pick Up Crane Truck Full Size	\$275.00	\$275.00
8/14/25 T-051 JA - Includes P/U of RC-736244			

This Invoice is subject to additional terms and conditions set forth located at <https://www.ntsafety.com/wp-content/uploads/2024/02/NTS-TC-2-7-24.pdf>. The customer agrees to grant NTS a security interest to secure monies due hereunder and authorizes NTS to file a UCC-1 financing statement with the appropriate filing offices to perfect such security interests. Terms Accounts are due and payable net 30 days from invoice date.

Please Remit Payment to:
National Trench Safety
P.O.Box 51373
Los Angeles, CA 90051-5673

Rental:	\$366.00
Waiver:	\$58.56
Discount	\$0.00
Sales Tax:	\$29.29
Other:	\$550.00
Total Amount:	\$1,003.85

Adjustments for MARKATKINS4 in All Saved Models

September 9, 2025

Komatsu PC228USLC-10 (disc. 2017)
 Crawler Mounted Hydraulic Excavators

 Size Class:
24.5 - 28.4 mt
 Weight:
N/A

Configuration for PC228USLC-10 (disc. 2017)

Horsepower	158.0 hp	Operating Weight	55336 lbs
Power Mode	Diesel		

Blue Book Rates

** FHWA Rate is equal to the monthly ownership cost divided by 176 plus the hourly estimated operating cost.

	Ownership Costs				Estimated Operating Costs	FHWA Rate**
	Monthly	Weekly	Daily	Hourly	Hourly	Hourly
Published Rates	USD \$9,610.00	USD \$2,690.00	USD \$675.00	USD \$100.00	USD \$36.04	USD \$90.64
Adjustments						
Region (100%)	-	-	-	-		
Model Year (2017: 100%)	-	-	-	-		
Adjusted Hourly Ownership Cost (100%)	-	-	-	-		
Hourly Operating Cost (100%)					-	
Total:	USD \$9,610.00	USD \$2,690.00	USD \$675.00	USD \$100.00	USD \$36.04	USD \$90.64

Non-Active Use Rates

	Hourly
Standby Rate	USD \$31.42
Idling Rate	USD \$65.22

Rate Element Allocation

Element	Percentage	Value
Depreciation (ownership)	31.52%	USD \$3,029.55/mo
Overhaul (ownership)	42.45%	USD \$4,079.55/mo
CFC (ownership)	16.09%	USD \$1,546.53/mo
Indirect (ownership)	9.93%	USD \$954.38/mo
Fuel (operating) @ USD 3.54	29.47%	USD \$10.62/hr

Revised Date: 3rd quarter 2025

These are the most accurate rates for the selected Revision Date(s). However, due to more frequent online updates, these rates may not match Rental Rate Blue Book® Print. Visit the Cost Recovery Product Guide on our Help page for more information.

The equipment represented in this report has been exclusively prepared for (matkinsjr@bmk8.com)

Rental Rate Blue Book®

September 5, 2025

Ford T350HD TRANSIT 4X2 GAS (disc. 2019)
 Cargo Vans

Size Class:

2

Weight:

N/A

Configuration for T350HD TRANSIT 4X2 GAS (disc. 2019)

Power Mode	Gasoline	Wheelbase	148 Inches
Axle Configuration	4x2	Complete / Incomplete	C
Gross Vehicle Weight	9950 Pounds		

Blue Book Rates

** FHWA Rate is equal to the monthly ownership cost divided by 176 plus the hourly estimated operating cost.

	Ownership Costs				Estimated Operating Costs	FHWA Rate**
	Monthly	Weekly	Daily	Hourly	Hourly	Hourly
Published Rates	USD \$2,910.00	USD \$815.00	USD \$205.00	USD \$31.00	USD \$12.02	USD \$28.55
Adjustments						
Region (100%)	-	-	-	-		
Model Year (2019: 100%)	-	-	-	-		
Adjusted Hourly Ownership Cost (100%)	-	-	-	-		
Hourly Operating Cost (100%)					-	
Total:	USD \$2,910.00	USD \$815.00	USD \$205.00	USD \$31.00	USD \$12.02	USD \$28.55

Non-Active Use Rates

	Hourly
Standby Rate	USD \$10.10
Idling Rate	USD \$20.19

Rate Element Allocation

Element	Percentage	Value
Depreciation (ownership)	29.63%	USD \$862.21/mo
Overhaul (ownership)	38.89%	USD \$1,131.65/mo
CFC (ownership)	15.9%	USD \$462.76/mo
Indirect (ownership)	15.58%	USD \$453.38/mo
Fuel (operating) @ USD 3.17	30.45%	USD \$3.66/hr

Revised Date: 3rd quarter 2025

These are the most accurate rates for the selected Revision Date(s). However, due to more frequent online updates, these rates may not match Rental Rate Blue Book® Print. Visit the Cost Recovery Product Guide on our Help page for more information.

The equipment represented in this report has been exclusively prepared for (matkinsjr@bmk8.com)

Adjustments for MARKATKINS8 in All Saved Models

September 5, 2025

Kenworth C500B (6X6)
On-Highway Truck Tractors

Size Class:
60,001 lbs & Over
Weight:
16500 lbs



Configuration for C500B (6X6)

Horsepower	330.0 hp		Power Mode		Diesel	
Blue Book Rates						
** FHWA Rate is equal to the monthly ownership cost divided by 176 plus the hourly estimated operating cost.						
	Ownership Costs				Estimated Operating Costs	FHWA Rate**
	Monthly	Weekly	Daily	Hourly	Hourly	Hourly
Published Rates	USD \$3,985.00	USD \$1,115.00	USD \$280.00	USD \$42.00	USD \$45.34	USD \$67.98
Adjustments						
Region (100%)	-	-	-	-		
Model Year (2021: 99.89%)	(USD \$4.32)	(USD \$1.21)	(USD \$0.30)	(USD \$0.05)		
Adjusted Hourly Ownership Cost (100%)	-	-	-	-		
Hourly Operating Cost (100%)					-	
Total:	USD \$3,980.68	USD \$1,113.79	USD \$279.70	USD \$41.95	USD \$45.34	USD \$67.96

Non-Active Use Rates		Hourly
Standby Rate		USD \$14.16
Idling Rate		USD \$51.21

Rate Element Allocation

Element	Percentage	Value
Depreciation (ownership)	42.23%	USD \$1,682.94/mo
Overhaul (ownership)	37.39%	USD \$1,489.98/mo
CFC (ownership)	9.35%	USD \$372.75/mo
Indirect (ownership)	11.02%	USD \$439.33/mo
Fuel (operating) @ USD 3.54	63.06%	USD \$28.59/hr

Revised Date: 3rd quarter 2025

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The equipment represented in this report has been exclusively prepared for (matkinsjr@bmk8.com)

Adjustments for MARKATKINS7 in All Saved Models

September 5, 2025

Miscellaneous 4 AXLE 8 TIRE 40'
Lowboy Trailers

Size Class:
All
Weight:
N/A



Configuration for 4 AXLE 8 TIRE 40'

Power ModeManual

Blue Book Rates

** FHWA Rate is equal to the monthly ownership cost divided by 176 plus the hourly estimated operating cost.

	Ownership Costs				Estimated Operating Costs	FHWA Rate**
	Monthly	Weekly	Daily	Hourly	Hourly	Hourly
Published Rates	USD \$3,850.00	USD \$1,080.00	USD \$270.00	USD \$41.00	USD \$9.20	USD \$31.08
Adjustments						
Region (100%)	-	-	-	-		
Model Year (2021: 99.36%)	(USD \$24.71)	(USD \$6.93)	(USD \$1.73)	(USD \$0.26)		
Adjusted Hourly Ownership Cost (100%)	-	-	-	-		
Hourly Operating Cost (100%)					-	
Total:	USD \$3,825.29	USD \$1,073.07	USD \$268.27	USD \$40.74	USD \$9.20	USD \$30.93

Non-Active Use Rates

	Hourly
Standby Rate	USD \$15.64
Idling Rate	USD \$21.73

Rate Element Allocation

Element	Percentage	Value
Depreciation (ownership)	47.18%	USD \$1,816.32/mo
Overhaul (ownership)	28.03%	USD \$1,079.30/mo
CFC (ownership)	13.9%	USD \$535.23/mo
Indirect (ownership)	10.89%	USD \$419.15/mo

Fuel cost data is not available for these rates.

Revised Date: 3rd quarter 2025

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Adjustments for Mark Atkins1 in All Saved Models

September 5, 2025

RAM 3500 LONGHORN 4X4 DIESEL
Light Duty Trucks

Size Class:
3
Weight:
N/A



Configuration for 3500 LONGHORN 4X4 DIESEL

Power Mode Diesel Wheelbase 149.5 Inches
Model Trim Longhorn Gross Vehicle Weight Rating 11800 Pounds

Blue Book Rates

** FHWA Rate is equal to the monthly ownership cost divided by 176 plus the hourly estimated operating cost.

	Ownership Costs				Estimated Operating Costs	FHWA Rate**
	Monthly	Weekly	Daily	Hourly	Hourly	Hourly
Published Rates	USD \$5,805.00	USD \$1,625.00	USD \$405.00	USD \$61.00	USD \$22.78	USD \$55.76
Adjustments						
Region (100%)	-	-	-	-		
Model Year (2024: 99.28%)	(USD \$41.52)	(USD \$11.62)	(USD \$2.90)	(USD \$0.44)		
Adjusted Hourly Ownership Cost (100%)	-	-	-	-		
Hourly Operating Cost (100%)					-	
Total:	USD \$5,763.48	USD \$1,613.38	USD \$402.10	USD \$60.56	USD \$22.78	USD \$55.53

Non-Active Use Rates

	Hourly
Standby Rate	USD \$19.80
Idling Rate	USD \$39.88

Rate Element Allocation

Element	Percentage	Value
Depreciation (ownership)	27.46%	USD \$1,594.00/mo
Overhaul (ownership)	39.54%	USD \$2,295.11/mo
CFC (ownership)	16.42%	USD \$952.93/mo
Indirect (ownership)	16.59%	USD \$962.96/mo
Fuel (operating) @ USD 3.54	31.3%	USD \$7.13/hr

Revised Date: 3rd quarter 2025

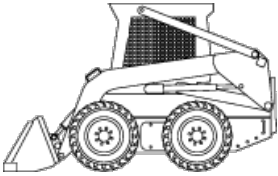
These are the most accurate rates for the selected Revision Date(s). However, due to more frequent online updates, these rates may not match Rental Rate Blue Book® Print. Visit the Cost Recovery Product Guide on our Help page for more information.

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Rental Rate Blue Book®

September 9, 2025

Bobcat S770
 Skid Steer Loaders

 Size Class:
3,301 lbs & Over
 Weight:
9175 lbs

Configuration for S770

Horsepower	92.0 hp	Operator Protection	ROPS
Power Mode	Diesel		

Blue Book Rates

** FHWA Rate is equal to the monthly ownership cost divided by 176 plus the hourly estimated operating cost.

	Ownership Costs				Estimated Operating Costs	FHWA Rate**
	Monthly	Weekly	Daily	Hourly	Hourly	Hourly
Published Rates	USD \$8,510.00	USD \$2,385.00	USD \$595.00	USD \$89.00	USD \$33.89	USD \$82.24
Adjustments						
Region (100%)	-	-	-	-		
Model Year (2025: 100%)	-	-	-	-		
Adjusted Hourly Ownership Cost (100%)	-	-	-	-		
Hourly Operating Cost (100%)					-	
Total:	USD \$8,510.00	USD \$2,385.00	USD \$595.00	USD \$89.00	USD \$33.89	USD \$82.24

Non-Active Use Rates

	Hourly
Standby Rate	USD \$15.81
Idling Rate	USD \$60.39

Rate Element Allocation

Element	Percentage	Value
Depreciation (ownership)	15.47%	USD \$1,316.72/mo
Overhaul (ownership)	67.3%	USD \$5,726.90/mo
CFC (ownership)	7.9%	USD \$672.21/mo
Indirect (ownership)	9.33%	USD \$794.17/mo
Fuel (operating) @ USD 3.54	35.53%	USD \$12.04/hr

Revised Date: 3rd quarter 2025

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The equipment represented in this report has been exclusively prepared for (matkinsjr@bmk8.com)



SHIP TO:
J#2520 Dupage Water Commission
President street
WHEATON,IL,60187

To ensure proper credit, please include remittance or list invoice numbers on your check remittance and send to:

Vulcan Construction Materials,LLC
PO Box 75219
Charlotte, NC 28275-5219, US
Phone: 1-800-777-8752 or
help@vmcmail.com

CUSTOMER NO: 69795-140724
INVOICE NO: 4232581
INVOICE DATE: 08/15/2025
INVOICE AMT: 783.20
ORDER: 2325449487
DUE DATE: 09/15/2025

INVOICE

SOLD TO:
BENCHMARK CONSTRUCTION CO.
2260 SOUTHWIND BLVD
Bartlett, IL 60103

Invoices not paid according to our credit terms will be assessed a Finance Charge. Customer shall pay all cost of collection including but not limited to a reasonable attorney's fee for services rendered by suit or otherwise in collecting past due invoices.				TAXES:		PERCENT:	AMOUNT:	SALES TAX:		TOTAL PRODUCT:		Pay this AMOUNT:													
								0.00		783.20															
								FEES:		TOTAL FREIGHT:				0.00											
								0.00		TOTAL OTHER:				0.00											
TOTAL QUANTITY:		TOTAL LOADS:										\$783.20													
60.19		3.00																							
SALES REP			PO NUMBER			REF			CONTRACT NO.			TAX EXEMPT ID.			TERMS										
Lori Jermyn												E99902931			NET 15th PROX - Payable in full by the 15th of each month following month of shipment										
INVOICE #		INVOICE DATE		CUSTOMER NUMBER		LOCATION		ORDER		BILL OF LADING			FOB												
4232581		08/15/2025		69795-140724		3418-111		BARBERS CORNERS STONE		2325449487		PICKUP													
TICKET DETAIL																									
SHIP DATE		TICKET		VEHICLE		CLASS		PROD CODE		DESCRIPTION		UOM		QTY		PRICE		UOM		QTY		PRICE		AMOUNT	
08/13/2025		8709625		963				15171		CERT CM-06 STONE		T		20.13		14.00								281.82	
		8709660		963				15171		CERT CM-06 STONE		T		20.24		14.00								283.36	
														40.37										565.18	
		8709581		963				30681		FA-6		T		19.82		11.00								218.02	
														19.82										218.02	

SAVE TIME AND SAVE A TREE WITH EMAIL INVOICE DELIVERY!

Receive your invoice faster and help save the environment by enrolling in our email invoicing service. With email, Invoices are sent in one easy to open file directly to your Inbox. To sign up, contact us at help@vmcmail.com or call us at 1-800-777-8752.



SHIP TO:

J#2520 Dupage Water Commission
President street
WHEATON,IL,60187

To ensure proper credit, please include remittance or list invoice numbers on your check remittance and send to:

Vulcan Construction Materials,LLC
PO Box 75219
Charlotte, NC 28275-5219, US
Phone: 1-800-777-8752 or
help@vmcmail.com

CUSTOMER NO: 69795-140724

INVOICE NO: 4232886

INVOICE DATE: 08/15/2025

INVOICE AMT: 223.30

ORDER: 2325449487

DUE DATE: 09/15/2025

SOLD TO:

BENCHMARK CONSTRUCTION CO.
2260 SOUTHWIND BLVD
Bartlett, IL 60103

INVOICE

Invoices not paid according to our credit terms will be assessed a Finance Charge. Customer shall pay all cost of collection including but not limited to a reasonable attorney's fee for services rendered by suit or otherwise in collecting past due invoices.				TAXES:		PERCENT:		AMOUNT:		SALES TAX:		TOTAL PRODUCT:			Pay this AMOUNT:						
										0.00		223.30									
										FEES:		TOTAL FREIGHT:					0.00				
												TOTAL OTHER:					0.00				
TOTAL QUANTITY:		TOTAL LOADS:								0.00		0.00			\$223.30						
20.30		1.00																			
SALES REP				PO NUMBER				REF				CONTRACT NO.				TAX EXEMPT ID.				TERMS	
Lori Jermyn																E99902931				NET 15th PROX - Payable in full by the 15th of each month following month of shipment	
INVOICE #		INVOICE DATE		CUSTOMER NUMBER		LOCATION		LOCATION		ORDER		BILL OF LADING				FOB					
4232886		08/15/2025		69795-140724		3418-111		BARBERS CORNERS STONE		2325449487						PICKUP					
TICKET DETAIL										PRODUCT			FREIGHT			OTHER CHARGES			AMOUNT		
SHIP DATE		TICKET		VEHICLE		CLASS		PROD CODE		DESCRIPTION		UOM	QTY	PRICE	UOM	QTY	PRICE	UOM			QTY
08/12/2025		8709525		963				30681		FA-6		T	20.30	11.00							223.30

SAVE TIME AND SAVE A TREE WITH EMAIL INVOICE DELIVERY!
Receive your invoice faster and help save the environment by enrolling in our email invoicing service. With email, invoices are sent in one easy to open file directly to your Inbox. To sign up, contact us at help@vmcmail.com or call us at 1-800-777-8752.



allied asphalt paving company

1100 BRANDT DRIVE
HOFFMAN ESTATES, IL 60192

847-695-9300
FAX 847-695-9262

INVOICE 259285

PAGE 1

DATE 8/16/2025

TERMS Net 30 Days

ACCOUNT NO. 2012

SOLD TO BENCHMARK CONSTRUCTION CO.
2260 SOUTHWIND BLVD
BARTLETT, IL 60103

1211 N PRESIDENT - WHEATON

Ticket	Date	PO	Order	Loc.	Product	Qty	-----Material-----		-----Freight-----		Tax	Total
							Rate	Amount	Rate	Amount	Amount	
7324195	8/14/2025		25-0011	97	BROKEN ASPHALT - SEMI	1.00	150.00	150.00	0.00	0.00	0.00	150.00
Subtotal			25-0011		BROKEN ASPHALT - SEMI	1.00		\$150.00		\$0.00	\$0.00	\$150.00
7324244	8/14/2025		25-0011	97	N50 D SURFACE 81BIT696	6.31	67.00	422.77	0.00	0.00	35.94	458.71
Subtotal			25-0011		N50 D SURFACE 81BIT696	6.31 Ton		\$422.77		\$0.00	\$35.94	\$458.71
7324201	8/14/2025		25-0011	97	N50 BINDER 81BIT695A	15.05	62.00	933.10	0.00	0.00	79.31	1,012.41
Subtotal			25-0011		N50 BINDER 81BIT695A	15.05 Ton		\$933.10		\$0.00	\$79.31	\$1,012.41
Invoice Total						22.36		\$1505.87		\$0.00	\$115.25	\$1,621.12

Total Invoice ----- > \$1,621.12

Any invoice discrepancy must be brought to our attention within 30 days from the invoice date, otherwise the invoice will be considered correct and full payment must be received within terms. If tax exempt, you must provide the Tax Exempt Certificate in order for the taxes to be removed. Invoices not paid within terms are subject to a 1.5% (18% APR) monthly finance charge.



INVOICE

INVOICE NUMBER: **253409A**

INVOICE DATE: **8/12/25**

PAGE: **1**

1500 E. Mountain, Aurora, Illinois 60505
TEL: (630) 851-4500 FAX: (630) 851-4789

SOLD TO:

Benchmark Construction Co., Inc.
2260 Southwind
Bartlett, IL 60103

Ship To:

N President St & E Prairie
Marty 224-760-5592
Wheaton, IL

CUSTOMER I.D.		CUSTOMER P.O.		PAYMENT TERMS	
ben0001		Wheaton		Net 30 Days ML	
SALES REP I.D.		SHIPPING METHOD		SHIP DATE	DUE DATE
07		MAW TRUCK		8/12/25	9/11/25
QUANTITY	ITEM NUMBER	DESCRIPTION		UNIT PRICE	EXTENSION
		B/D QTY			
20.00	dip-cl52p12	12" CL52, Cement Lined, Asphaltic Coated, Fasttie DIP		83.32	1,666.40
1.00	sew-1551212arc	12" DIP x 12" DIP Non-Shear Coupling		169.62	169.62
20.00	mh-brick	#2 brick		1.70	34.00
1.00	mh-mortar	80LB Mortar Mix		20.00	20.00

PLEASE PAY FROM THIS INVOICE

ALL ATTORNEYS FEE AND OTHER COSTS OF COLLECTING THIS WILL BE PAID BY BUYER.

PAYMENT IS DUE 30 DAYS FROM INVOICE DATE. A FINANCE CHARGE OF 1 1/2% PER MONTH (18% PER ANNUM) WILL BE ADDED TO ALL PAST DUE ACCOUNTS.

Check

Subtotal	1,890.02
Sales Tax	
Total Invoice Amount	\$1,890.02
Payment/Credit	
TOTAL DUE	\$1,890.02

* PER DEPT OF REVENUE IF MATERIALS EXEMPT, DON'T PAY TAX, MARK "EXEMPT" ON PAY DETAIL & FURNISH CERTIFICATE, REQUIRED FOR ALL EXEMPT JOBS. ** CREDIT DEFAULT AS EXEMPT. IF TAX WAS PAID ON ORIGINAL INVOICE, FURNISH ORIGINAL INVOICE FOR TAX CREDIT



ADVANCED WELDING AND EQUIPMENT, INC

6688 JOLIET RD
INDIAN HEAD PARK
ILLINOIS 60525

Invoice

Date	Invoice #
9/5/2025	25-080

Bill To
Benchmark Construction 2260 Southwind Blvd Barlett, Illinois 60103

P.O. No.	Terms	Project
Mark Jr.	Net 30	

Quantity	Description	Rate	Amount
	Advanced Welding and Equipment, Inc to Furnish: RE:DWC Repair Pipe on President Street in Wheaton. All work completed : August 12th 2025	6,127.00	6,127.00
- Please Remit Payment. REMIT TO:6688 Joliet Rd. #273 Indian Head Park, IL 6052		Total	\$6,127.00



Smith Maintenance Company
2221 W Walnut Street, Suite #2
Chicago, IL 60612 US
312.733.4301

INVOICE

BILL TO

Benchmark Construction Inc.
2260 Southwind Blvd.
630-497-1700
Bartlett, IL 60103

SHIP TO

JOB SITE:
PRESIDENT AND PRAIRE
WHEATON IL

INVOICE # 21015**DATE** 08/20/2025**DUE DATE** 09/19/2025**TERMS** Net 30**TRACKING NO.**

5141

P.O. NUMBER

PER MARK JR.

DESCRIPTION

QTY RATE AMOUNT

LUMP SUM FOR LANE CLOSURE

(25) A-FRAMES W/FL HEADS

(1) TYPE III W/RD CLSD SIGN

(9) SIGNS

(2) RD CONST AHD

(1) R/L CLSD AHD

(1) DETOUR AHD

(2) DETOUR LEFT

(2) DETOUR RIGHT

(1) DETOUR END

25 X \$0.45 = \$11.25 X 5 DAYS = \$56.25

1 X \$ 3.50 = \$3.50 X 5 DAYS = \$17.50

9 X \$2.50 = \$22.50 X 5 DAYS = \$112.50

125	0.45	56.25
5	3.50	17.50
45	2.50	112.50

DELIVERED: 08/11/2025

1	40.00	40.00
---	-------	-------

PICKED UP: 08/15/2025

1	40.00	40.00
---	-------	-------

Please Remit Payment To:
Smith Maintenance Company
2221 W Walnut St., Ste #2
Chicago, IL 60612

BALANCE DUE**\$266.25**

Thank You for Your Business!

P O Box 99
Union IL 60180
(847) 874-8279

Date	Invoice #
9/4/2025	2790

Bill To
Benchmark Construction Co Inc 2260 Southwind Blvd Bartlett IL 60103

Job Name / PO#
1211 N President Street Wheaton IL

Quantity	Item Code	Description	Unit Price	Amount
	Asphalt	Mill and Overlay of Roadway, 600SF	18,635.00	18,635.00
		IL state tax	7.25%	0.00

Balance Due \$18,635.00

Thank You for your business.

*** Payment is due 30 days from the date of this invoice. ***



INVOICE

Invoice Date: 08/11/2025
Invoice # INV-086862

Bill To	Project
Benchmark Construction Benchmark Construction 2260 Southwind Blvd Bartlett, IL 60103	1211 S President St

Customer ID	Customer PO	Payment Terms
C-003611		Net 30
Sales Rep	Reference	Due Date
Scott A Milcarek(10065)		09/10/2025

Service Date	Item/Service	Ticket#	Truck#	Qty	Unit Price	Amount
08/11/2025	Hourly-Semi Dump (Straight)	721342	UT-898	2.75	\$147.00	\$404.25
08/11/2025	Asphalt-LD	721342	UT-898	1	\$125.00	\$125.00

Subtotal	\$529.25
Sales Tax	\$0.00
Discount	\$0.00
Total	\$529.25
REMAINING BALANCE	\$529.25

Please remit payments to:
Utility Transport Service
15020 S. Cicero Ave. Unit 201
Oak Forest, IL 60452

Overdue invoice balances will be subject to a 2% monthly late payment fee

Thank you for your business!



INVOICE

Invoice Date: 08/15/2025
Invoice #: INV-086591

Bill To	Project
Benchmark Construction Benchmark Construction 2260 Southwind Blvd Bartlett, IL 60103	1211 S President St 1211 S President St Wheaton IL 60189

Customer ID	Customer PO	Payment Terms
C-003611	Wheaton Main Break	Net 30
Sales Rep	Reference	Due Date
Scott A Milcarek(10065)		09/14/2025

Service Date	Item/Service	Ticket#	Truck#	Qty	Unit Price	Amount
08/15/2025	Hourly-Sweeper (Straight)	719165	Sweeper	4	\$175.00	\$700.00

Subtotal	\$700.00
Sales Tax	\$0.00
Discount	\$0.00
Total	\$700.00
REMAINING BALANCE	\$700.00

Please remit payments to:
Utility Transport Service
15020 S. Cicero Ave. Unit 201
Oak Forest, IL 60452

Overdue invoice balances will be subject to a 2% monthly late payment fee

Thank you for your business!



5500 Pearl St Ste 300
Rosemont IL 60018-5303
Phone: 844-888-8830
www.LRSrecycles.com

INVOICE

Invoice No	PS672423
Page No	1 of 1
Invoice Date	Aug-21-25
Customer No	3589.244
Site No	0
Reference	

BENCHMARK CONSTRUCTION
2260 SOUTHWIND BLVD
BARTLETT, IL 60103

Balance forward : \$3,507.79
Payments : \$0.00
Adjustments : \$0.00
Invoices : \$1,723.68

Date	Codes	Description	Reference	Quantity	Amount
		(0244) PO.#2520 BENCHMARK CONSTRUCTION 1207 N PRESIDENT ST, WHEATON IL <u>Serv #001 STANDARD UNIT 60.00</u>			
11 - Aug		DELIVERY W.O# 441470 DELIVERY		1.00	\$60.00
14 - Aug		1 UNIT @1X WK UNIT RENTAL W.O# 442085 FLAT FEE		1.00	\$163.00
14 - Aug		Fuel/Environmental Fee			\$22.30
				Site Total:	\$245.30

	Current \$1,968.98	31-60 Days \$795.67	61-90 Days \$2,712.12	Over 91 Days \$0.00	Invoice Total \$245.30	Balance Due \$5,476.77
--	-----------------------	------------------------	--------------------------	------------------------	---------------------------	---------------------------

NEW PAYMENT ADDRESS

LRS, LLC
PO BOX 4700
CAROL STREAM IL 60197-4700

Please get this receipt and remit with payment

Payment due upon receipt of this invoice. 1.5% per month (18% per annum) late charges on balances over 30 days from date of invoice. Payments received after invoice date are not reflected. To ensure proper credit, please include your account number on your check and include the bottom portion of this invoice. When making payment on multiple accounts, please include the account numbers and the amounts of payment. We reserve the right to suspend service without notice on any past due account.

REMIT

We now accept payments online at www.LRSrecycles.com

BENCHMARK CONSTRUCTION
2260 SOUTHWIND BLVD
BARTLETT, IL 60103



Invoice No	PS672423
Page No	1 of 1
Invoice Date	Aug-21-25
Customer No	3589.244
Site No	0
Reference	

00004700020003589000000000000067242300000245306



Tel: 708-516-2042

Fax: 708-749-1792

WBE / MBE Certified

No.47195

Date: 08-11-25

HAULING FOR	
BENCHMARK	
ADDRESS	
1211 N PRESIDENT ST	
TOWN	
WHEATON, IL	
P.O. / JOB #	APPROVAL #
SIGNED	

TERMS: Net 30 days. 1-1/4% per month charge on past due accounts. We assume no liability for sidewalks, driveways or any underground construction if damaged by equipment or trucks making delivery. Lessee responsible for any overload fines resulting from his loading of truck. Also agree to pay collection cost and attorney fees if collected by lawsuit or otherwise.

START	8:45 AM	FINISH	4:30 PM
TRAVEL TIME	1 HRS.	LUNCH	Yes No
TOTAL HOURS (INCLUDING TRAVEL TIME)		8 3/4	
TRUCK #	963	DUMP-MATERIAL TICKETS	
DRIVER NAME	ROBERTO	LAST NAME	SOLIS
TYPE OF MATERIAL	CONCRETE ASPHALT	STONE OTHER	DIRT MIXED
TOTAL LOADS	111	16096042	
FROM	1211 N. PRESIDENT ST WHEATON, IL		
TO	BEVERLY MATERIALS		
TOTAL TONS			
TOTAL TOLLS			

Ref No: G22250746



Tel: 708-516-2042

Fax: 708-749-1792

WBE / MBE Certified

No.45367

Date: 08-11-25

HAULING FOR	
Benchmark	
ADDRESS	
2260 Southwind Blvd, Bartlett	
TOWN	
P.O. / JOB #	APPROVAL #
Barry Ave	4678
SIGNED	

TERMS: Net 30 days. 1-1/4% per month charge on past due accounts. We assume no liability for sidewalks, driveways or any underground construction if damaged by equipment or trucks making delivery. Lessee responsible for any overload fines resulting from his loading of truck. Also agree to pay collection cost and attorney fees if collected by lawsuit or otherwise.

START	12:45 PM	FINISH	4:00 PM
TRAVEL TIME	1 HRS.	LUNCH	Yes No
TOTAL HOURS (INCLUDING TRAVEL TIME)		4 1/2	
TRUCK #	34	DUMP-MATERIAL TICKETS	
DRIVER NAME	Mario A.	LAST NAME	Rodriguez
TYPE OF MATERIAL	CONCRETE ASPHALT	STONE OTHER	DIRT X
TOTAL LOADS			
FROM	1211 N President st in wheaton		
TO	Beverly		
TOTAL TONS			
TOTAL TOLLS	yes		

470 of 482

Ref No: G22250746



Tel: 708-516-2042

Fax: 708-749-1792

WBE / MBE Certified

No. 47196

Date: 08-12-25

HAULING FOR	
BENCHMARK	
ADDRESS	
1211 N PRESIDENT ST	
TOWN	
WHEATON, IL	
P.O. / JOB #	APPROVAL #
SIGNED	

TERMS: Net 30 days. 1-1/4% per month charge on past due accounts. We assume no liability for sidewalks, driveways or any underground construction if damaged by equipment or trucks making delivery. Lessee responsible for any overload fines resulting from his loading of truck. Also agree to pay collection cost and attorney fees if collected by lawsuit or otherwise.

START	6:00	AM	FINISH	4:00	AM
TRAVEL TIME	1	HRS.	LUNCH	Yes	No
TOTAL HOURS	(INCLUDING TRAVEL TIME) 11				
TRUCK #	963				DUMP-MATERIAL TICKETS
DRIVER NAME	ROBERTO SOLIS				CA-8475090
TYPE OF MATERIAL	CONCRETE	STONE	DIRT	16096501-DI	
	ASPHALT	OTHER	FA-6	8709525 FA	
TOTAL LOADS	111				
FROM	BEVERLY MATERIALS				
	1211 N PRESIDENT ST				
	VULCAN BARBERS CORNERS				
TO	1211 N PRESIDENT ST				
	WHEATON, IL				
	BEVERLY MATERIALS				
TOTAL TONS	KEEP THE LOADS FA-6				
TOTAL TOLLS	FOR NEXT DAY 08-13-25				

Ref No: G222507458

(TOLLS YES)



Tel: 708-516-2042

Fax: 708-749-1792

WBE / MBE Certified

No. 47197

Date: 08-13-25

HAULING FOR	
BENCHMARK	
ADDRESS	
1211 N PRESIDENT ST	
TOWN	
WHEATON, IL	
P.O. / JOB #	APPROVAL #
SIGNED	

TERMS: Net 30 days. 1-1/4% per month charge on past due accounts. We assume no liability for sidewalks, driveways or any underground construction if damaged by equipment or trucks making delivery. Lessee responsible for any overload fines resulting from his loading of truck. Also agree to pay collection cost and attorney fees if collected by lawsuit or otherwise.

START	6:00	AM	FINISH	3:00	AM
TRAVEL TIME	1	HRS.	LUNCH	Yes	No
TOTAL HOURS	(INCLUDING TRAVEL TIME) 10/0				
TRUCK #	963				DUMP-MATERIAL TICKETS
DRIVER NAME	ROBERTO SOLIS				8709581 FA
TYPE OF MATERIAL	CONCRETE	STONE	DIRT	8709625 FA	
	ASPHALT	OTHER	FA-6	8709661 FA	
TOTAL LOADS	111				
FROM	1211 N PRESIDENT ST				
	VULCAN BARBERS CORNERS				
TO	1211 N PRESIDENT ST				
TOTAL TONS	BROUGHT BACK THE LOAD OF FA-6				
TOTAL TOLLS	FROM 08-12-25 TICKET # 8709525				

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Ref No: G22250746



Tel: 708-516-2042
Fax: 708-749-1792
WBE / MBE Certified

No.47198

Date: 08-14-25

HAULING FOR	
BENCHMARK	
ADDRESS	
1211 N PRESIDENT ST	
TOWN	
WHEATON, IL	
P.O. / JOB #	APPROVAL #
SIGNED	

TERMS: Net 30 days. 1-1/4% per month charge on past due accounts.
We assume no liability for sidewalks, driveways or any underground construction if damaged by equipment or trucks making delivery.
Lessee responsible for any overload fines resulting from his loading of truck. Also agree to pay collection cost and attorney fees if collected by lawsuit or otherwise.

START	7:00 AM PM	FINISH	2:00 AM PM
TRAVEL TIME	1 HRS.	LUNCH	Yes No
TOTAL HOURS	(INCLUDING TRAVEL TIME) 6		
TRUCK #	963		DUMP-MATERIAL TICKETS
DRIVER NAME	LAST NAME		
ROBERTO	JOLIS		7324195
TYPE OF MATERIAL	CONCRETE	STONE	DIRT
ASPHALT	OTHER	BINDER	
TOTAL LOADS	111		7324201
FROM	1211 N PRESIDENT ST		
	ALLIED WEST CHICAGO		
	(97)		
TO	ALLIED WEST CHICAGO		
	1211 N PRESIDENT ST		
TOTAL TONS			
TOTAL TOLLS			

Ref No: G1



Resolution #: R-73-25

Account: 01-80-850001

Approvals: *Author / Manager / Finance / Admin*

AS JML CAP PDM

REQUEST FOR BOARD ACTION

Date: 9/11/2025

Description: **A Resolution Approving a Second Amendment to Task Order No. 18 Under a Master Contract with AECOM Technical Services, Inc.**

Agenda Section: Engineering & Construction

Originating Department: Engineering

In 2021, the DuPage Water Commission entered into an Intergovernmental Agreement (IGA) with the Village of Lombard (R-51-21) for the purposes of designing and constructing a 5th connection point to their water distribution network. To complete the necessary analysis and design for this work, the Commission approved Task Order No. 18 under a Master Contract with AECOM Technical Services, Inc. (R-52-21) in the amount of \$104,920 after soliciting proposals from ten engineering firms. The scope of work included the design and bidding services on behalf of the Commission. An amendment to this Task Order (R-20-24) was later approved in February 2024, increasing the total cost to \$122,620.

The original Pressure Adjusting/Metering Station – MS 14-E design began in February 2021 with an anticipated completion of 4.5 months. Due to requests from the Village of Lombard, the project was put on hold shortly thereafter, until it was started up again in early 2024. Though design work has nearly been completed, it was recently determined that additional design work will be required to coordinate the current effort with the Village's ongoing water tower construction effort at the same site. Approval of Resolution R-73-25 would result in additional costs in the amount of \$16,900, which will increase the not-to-exceed cost for Task Order No. 18 to \$139,520. If approved, Resolution No. R-73-25 will become the Second Amendment to Task Order No. 18 for additional design services.

In accordance with the IGA, the Village of Lombard is responsible for all costs associated with this project. They will be required to deposit 125% of anticipated costs in an escrow account and all incurred costs will be deducted from said account for payment to AECOM. Any funds remaining upon completion of the work will be returned to the Village of Lombard.

Recommended Motion:

To adopt Resolution No. R-73-25.

DUPAGE WATER COMMISSION

RESOLUTION NO. R-73-25

A RESOLUTION APPROVING A SECOND AMENDMENT TO TASK ORDER NO. 18 UNDER A MASTER CONTRACT WITH AECOM TECHNICAL SERVICES, INC.

WHEREAS, the DuPage Water Commission (the “Commission”) entered into a contract with AECOM Technical Services, Inc. (the “Consultant”) to provide, from time to time, professional engineering services in connection with various projects of the Commission (the “Master Contract”); and

WHEREAS, the Master Contract sets forth the terms and conditions pursuant to which the Commission will obtain from time to time, and the Consultant will provide from time to time, professional engineering services for such discrete projects as are delineated and described in Task Orders to be approved by the Commission and the Consultant; and

WHEREAS, pursuant to Resolution No. R-52-21, the Commission approved Task Order No. 18 to the Master Contract for Professional Engineering Services for the DuPage Water Commission; and

WHEREAS, the Commission and Consultant desire to further amend Task Order No. 18 to the Master Contract to add to the scope of work for design of water tower piping revisions, additional site work, addition of a roadway from Maxant Drive, to account for pricing increases and to increase the not-to-exceed cost of the services, the Board of Commissioners of the DuPage Water Commission hereby finding and determining, based upon the representations of staff and consultant that the circumstances said to necessitate the changes were not reasonably foreseeable at the time Task Order No. 18 was signed, the changes are germane to the Task Order as signed, and/or the changes are in the best interest of the DuPage Water Commission and authorized by law; and

WHEREAS, the Consultant has approved the Second Amendment to Task Order No. 18 attached hereto and by this reference incorporated herein and made a part hereof as Exhibit 1;

NOW, THEREFORE, BE IT RESOLVED by the Board of Commissioners of the DuPage Water Commission as follows:

SECTION ONE: The foregoing recitals are hereby incorporated herein and made a part hereof as findings of the Board of Commissioners of the DuPage Water Commission.

SECTION TWO: The Task Order attached hereto as Exhibit 1 shall be and hereby is approved and, if already issued, ratified because the Board of Commissioners of the DuPage Water Commission has determined, based upon the representations of Staff and the Consultant, that the circumstances said to necessitate the Task Orders were not reasonably foreseeable at the time the Master Contract was signed, the Task Orders are germane to the Master Contract as signed, and/or the Task Orders are in the best interest of the DuPage Water Commission and authorized by law.

SECTION THREE: This Resolution shall be in full force and effect from and after its adoption.

	Aye	Nay	Absent	Abstain
Cuzzone, N.				
Fennell, J.				
Greaney, S.				
Honig, A.				
Noonan, T.				
Novotny, D.				
Pruyn, J.				
Romano, K.				
Russo, D.				
Saverino, F.				
Suess, P.				
Van Vooren, D.				
Zay, J.				

ADOPTED THIS _____ DAY OF _____, 2025.

James F. Zay, Chairman

ATTEST:

Danna Mundall, Clerk

Board/Resolutions/2025/R-73-25.docx

EXHIBIT 1

September 2, 2025

Mr. Jeff Loster
Engineering Manager
DuPage Water Commission
600 E. Butterfield Road
Elmhurst, IL 60126

Subject: Request for Additional Fees for Lombard Metering Station/Pressure Adjusting Station

Dear Mr. Loster,

Based on our recent discussion, this letter provides our request for additional fees for the Lombard Pressure Adjusting Station. This request is based primarily on additional scope and schedule constraints in coordinating with the Lombard "Future Water Tower Site" project.

The original Metering Station/Pressure Adjusting Station design began in February of 2024 and was anticipated to be completed in 4.5 months. While the design team has been on pause at times since the onset of design, there have been some additional costs incurred, and potential additional costs needed to finish the design. These costs are outlined as follows:

- 1) Meetings, coordination, and design revisions to accommodate the Lombard "Future Water Tower Site" project and associated project management for this schedule extension.
- 2) Salary increases for 2025 for staff performing recent coordination work of approximately 4.5%.
- 3) Addition of site paving (layout, details, specifications), which was not previously part of project scope.
- 4) Addition of roadway to site from Maxant Dr. (layout, details, specifications) not previously part of project scope.

Our cost summary for each of the items is provided in the following table:

Cost Summary

Item	Hours	Cost
1: Water Tower Revisions	32	\$6,900
2: Salary increases	N/A	\$1,000
3: Site paving addition	16	\$3,600
4: Maxant Dr. roadway to site	24	\$5,400

AECOM proposes a fee increase for the additional costs defined above for a total of \$16,900.



Mr. Jeff Loster
September 2, 2025
Page 2

AECOM proposes to perform this additional scope of work under our Master Services Contract with DWC. If this proposal is acceptable, please authorize AECOM to perform this work by executing a task order amendment referring to this proposal. AECOM must receive the task order amendment before work can begin.

Should you have any questions concerning the above or if you would like to meet to discuss, please do not hesitate to contact us.

Very truly yours,

AECOM TECHNICAL SERVICES, INC.

A rectangular grey box redacting the signature of Hsing Chu.

Hsing Chu
Project Manager

A rectangular grey box redacting the signature of Chad R. Laucamp.

Chad R. Laucamp, P.E.
Associate Vice President

SECOND AMENDMENT TO TASK ORDER NO. 18

In accordance with Section 1.1 of the Master Contract between the DuPage Water Commission ("Owner") and AECOM Technical Services, Inc. ("Consultant"), for Professional Engineering Services dated October 14, 2021 (the "Contract"), Owner and Consultant agree to amend, effective September 18th, 2025, Task Order No. 18 as follows:

1. **Services of Consultant:**

Section 2 entitled "Services of Consultant" of Task Order No. 18 shall be replaced in its entirety as follows:

"A. Basic Services:

1. Preliminary Design Phase
 - a. Meet with Owner and the Village of Lombard to determine the general scope, extent and character of the Project.
 - b. Perform soil borings along the proposed feeder main route and the Joint Facility site.
 - c. Provide field surveying services to the plot feeder main, permanent metering station and connection facilities easements; plot temporary construction easements; plot permanent site access easements; and provide legal descriptions of each for DWC to incorporate into various agreements with 3rd parties.
 - d. Conduct additional hydraulic modeling to include the projected demands of the Villages of Montgomery, Oswego and Yorkville to identify the resulting flow conditions and to update the previous hydraulic modeling report accordingly.
 - e. Prepare preliminary design documents consisting of drawings, specifications, a written description of the Project and other documents appropriate for Project.
 - f. Furnish up to 7 paper copies of the Preliminary Design Documents and a .pdf file, together with Consultant's revised opinion of probable Construction Cost of the Project, for review and approval by Owner, and review them with Owner. The opinion of probable construction costs shall delineate individual costs associated with:
 - 1) Connection to existing DWC transmission main and the feeder main up to the DWC Metering Station
 - 2) The DWC Metering Station
 - 3) The Lombard Pressure Adjusting Station and connection to the existing Lombard distribution system.
 - g. Participation in additional meetings, coordination and design revisions to accommodate the Lombard "Future Water Tower Site" project and associated project management.
 - h. Design of additional site paving (layout, details, specifications).
 - i. Designing a roadway to site from Maxant Drive (layout, details, specifications).

3. Final Design Phase
 - a. On basis of accepted Preliminary Design Documents and the revised opinion of probable Project Costs and Construction Cost of the Project, prepare, final drawings, and specifications for incorporation in the construction contract documents. Such drawings and specifications shall show the general scope, extent and character of the work to be furnished and performed by the construction contractor.
 - b. Assist Owner by providing all required criteria, descriptions and design data and consulting with officials and Owner to obtain permits and to prepare other bidding/negotiation and construction contract documents.
 - c. Furnish up to 7 paper copies of the Final Design Documents and a .pdf file, together with Consultant's revised opinion of probable Construction Cost of the Project, based upon the drawings and specifications and the other bidding/negotiation and construction contract documents, for review and approval by Owner, and review them in person with Owner.
4. Bidding or Negotiating Phase
 - a. Assist Owner in advertising for and obtaining bids or negotiating proposals. Maintain a record of prospective bidders to whom bidding documents have been issued and attend pre-bid or negotiation conferences.
 - b. Issue addenda as appropriate and approved by Owner.
 - c. Consult with and advise Owner as to the acceptability of contractors, subcontractors, suppliers and other persons if such acceptability is required by the construction contract documents.
 - d. Consult with Owner as to acceptability of proposed substitute materials and equipment.
 - e. Attend bid openings, prepare bid or negotiation tabulation sheets, and assist Owner in evaluating bids or proposals and in assembling and awarding construction contracts.

B Additional Services:
None"

2. **Contract Price:**

Section 8, entitled "Contract Price" of Task Order No. 18 shall be amended in its entirety so that said Section 8 shall hereafter be and read as follows:

"8. Contract Price:

For providing, performing, and completing each phase of Services, an amount equal to Consultant's Direct Labor Costs times the following factor set forth opposite each such phase, plus an amount equal to the actual costs of all Reimbursable Expenses, but not to exceed, in each phase of Services, the following not to exceed amount set forth opposite each such phase except as adjusted by a Change Order issued by a Change Order issued pursuant to Section 2.1 of the Contract.

<u>Phase</u>	<u>Direct Labor Cost Factor</u>	<u>Not to Exceed</u>
Joint Facilities		
Soil Borings	<u>2.82</u>	<u>\$6,000</u>

Surveying Services	<u>2.82</u>	<u>\$5,900</u>
Commission Connection Facilities		
Additional Hydraulic Modeling		<u>\$5,600</u>
Preliminary Design	<u>2.82</u>	<u>\$19,396</u>
Final Design	<u>2.82</u>	<u>\$37,580</u>
Bidding Services	<u>2.82</u>	<u>\$3,444</u>
Village PAS Facilities		
Preliminary Design	<u>2.82</u>	<u>\$14,044</u>
Final Design	<u>2.82</u>	<u>\$44,212</u>
Bidding Services	<u>2.82</u>	<u>\$3,444</u>
Total:	<u>2.82</u>	<u>\$139,620</u>

The Effective Date of this Task Order is September 18, 2025.

DuPAGE WATER COMMISSION

By: _____

Paul D. May, P.E.
General Manager

DESIGNATED REPRESENTATIVE FOR TASK ORDER:

Name: Jeff Loster, PE
Title: Engineering Manager
Address: 600 East Butterfield Road, Elmhurst, Illinois 60126-4642
E-mail Address: loster@dpwc.org
Phone: 630-834-0100

AECOM Technical Services, INC.

By: _____

Chad Laucamp, P.E.

DESIGNATED REPRESENTATIVE FOR TASK ORDER:

Name: Chad Laucamp, P.E.
Title: Project Manager
Address: 303 East Wacker Drive
E-mail Address: chad.laucamp@aecom.com
Phone: (312) 373-6759