Illinois Department of Transportation
2300 South Dirksen Parkway / Springfield, Illinois / 62764

July 26, 2017

SUBJECT: FAI Route 90/94 (I-90/94)
Project NHPP-000V (126)
Section 2015-022-I
Cook County
Contract No. 62A74
Item No. 19, August 4, 2017 Letting
Addendum A

NOTICE TO PROSPECTIVE BIDDERS:

Attached is an addendum to the plans or proposal. This addendum involves revised and/or added material.

1. Revised the Schedule of Prices
2. Revised pages iv & v of the Table of Contents of the Special Provisions
3. Revised pages 2, 13-20, 75, 76, 82-85, 120-129, 135, 136, 145-148, 197, 203, 216, and 275 of the Special Provisions
4. Added pages 333-335 to the Special Provisions
5. Revised sheets 1, 2, 4-7, 10, 12, 14-18, 20, 24-29, 35, 37, 41, 45, 46, 49, 83-90, 95, 100, 101, 104, 105, 111, 114, 117, 156, 158-160, 252-256, 265-267 and 269-273 of the Plans
6. Added sheets 105A, 136A, 144A, and 146A to the Plans

Prime contractors must utilize the enclosed material when preparing their bid and must include any changes to the Schedule of Prices in their bid

Very truly yours,

John D. Baranzelli, P.E.
Acting Engineer of Design and Environment

By: Ted B. Walschleger, P. E.
Engineer of Project Management

cc: Anthony Quigley, Region 1 District 1; Tim Kell; D. Carl Puzey; Estimates

MS/ab

SOILS INFORMATION

The reports below are available for inspection at IDOT District 1, 201 W. Center Court, Schaumburg, Illinois.

Structure Geotechnical Report
Circle Interchange Reconstruction
Retaining Wall 10 (Proposed SN 016-1729)
F.A.I. Route SB 90/94 (Dan Ryan Expressway)
Station 7309+74.27 to Station 7316+31.15
Section 2015-022-I
IDOT D-91-227-13, PTB 163/ITEM 001
Cook County, Illinois
Prepared by: Wang Engineering, Inc.
Dated: Original: December 22, 2016; Revised: May 19, 2017

Geotechnical Design Memorandum
February 27, 2017
60-inch Combined Sewer Pipe Jacking
Circle Interchange Reconstruction
IDOT Job No. D-91-227-13, IDOT PTB 163, ITEM 01
Prepared by: Wang Engineering, Inc.

Technical Memorandum
January 4, 2017
Water Main Thrust Restraints, Contract 62A74
South West Water Main Replacement
Circle Interchange Reconstruction
IDOT Job No. D-91-227-13, IDOT PTB 163, ITEM 01
Prepared by: Wang Engineering, Inc.

The above Geotechnical Design Memorandum for the 60-inclh Combined Sewer Jacking pipe provides soils information based on available soil borings obtained in the vicinity of the project site. The information is provided for the Contractor's convenience and is to be used solely at the Contractor's risk. IDOT assumes no responsibility, and if deemed necessary, the Contractor shall obtain additional soil information at no additional cost to the Department.

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SUBMITTALS

There are elements of construction that may require long lead times between order and delivery to the project site for installation. The Contractor must prioritize timely submittals of shop drawings to minimize any delays in project execution.

Within ten (10) days of award, the Contractor shall submit an inventory of items with long lead times, including, but not limited to water main pipe and appurtenances, and identify a planned submittal schedule. The submittal schedule shall consider the required construction sequencing in order to meet the requirements noted in STAGING AND INTERCHANGE RESTRICTIONS and restrictions for water main operations by CDWM highlighted in these special provisions for various water main items. Submittals for steel and ductile iron materials, both for water main improvements and storm sewer shall be prioritized to minimize delays.

The Contractor shall provide notice to the Engineer concerning shop drawing submittal schedules and when shop drawing submittal deadlines may be delayed.

STATUS OF UTILITIES (D-1)
Effective: June 1, 2016

Utility companies and/or municipal owners located within the construction limits of this project have provided the following information in regard to their facilities and the proposed improvements. The tables below contain a description of specific conflicts to be resolved and/or facilities which will require some action on the part of the Department's contractor to proceed with work. Each table entry includes an identification of the action necessary and, if applicable, the estimated duration required for the resolution.

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UTILTIES TO BE ADJUSTED

Stage 1

STAGE / LOCATION	TYPE	DESCRIPTION	OWNER	ACTION
Des Plaines Street 4125+24, 17' RT +/- 4125+23, 7' RT +/-	Electric	Multiple Electrical Ductbanks – Various Dimensions, Unknown Depths	ComEd	Multiple ComEd ductbanks are within the area of water main improvements under this contract. The Contractor shall coordinate having ComEd temporarily support their concrete encased ducts and protect existing electrical manholes during excavation and water main improvement work.
Des Plaines Street 4125+13, 28' RT +/-	Electric	Multiple Electrical Ductbanks – Various Dimensions, Unknown Depths	ComEd	Multiple ComEd ductbanks are within the area of water main improvements under this contract. The Contractor shall coordinate having ComEd temporarily support their concrete encased ducts and protect existing electrical manholes during excavation and water main improvement work, including the disconnection of the existing fire hydrant lead.

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Des Plaines Street 4125+24, 13' RT +/-	Communications	Fiber Optic Ductbank – 20 Ducts @ 1.25" PVC, Unknown Depth or Overall Dimensions	Level 3	The Contractor shall coordinate having Level 3 temporarily support their existing duct(s) during excavation and water main improvement work.

No conflicts to be resolved (or if there are conflicts they are to be listed as noted above)

UTILITIES TO BE WATCHED AND PROTECTED

The areas of concern noted below have been identified by following the suggested staging plan included for the contract. The information provided is not a comprehensive list of all remaining utilities, but those which during coordination were identified as ones which might require the Department's contractor to take into consideration when making the determination of the means and methods that would be required to construct the proposed improvement. In some instances the contractor will be responsible to notify the owner in advance of the work to take place so necessary staffing on the owners part can be secured.

Pre-Stage

STAGE / LOCATION	TYPE	DESCRIPTION	OWNER	ACTION

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Stage 1

STAGE / LOCATION	TYPE	DESCRIPTION	OWNER	ACTION
UIC Student Recreation Facility Driveway	Electric Service in Shared Ductbank	Existing high voltage electric service	UIC	To be protected during combined sewer, retaining wall, drainage and pavement improvements. See EXPOSE AND PROTECT EXISTING UTILITIES.
UIC Student Recreation Facility Driveway	Data/Fiber Optic in Shared Ductbank	Existing fiber optic data services	UIC	To be protected during combined sewer, retaining wall, drainage and pavement improvements. See EXPOSE AND PROTECT EXISTING UTILITIES.
UIC Student Recreation Facility Driveway	Unknown Utility on top of Ductbank	Unknown	UIC	To be protected during combined sewer, retaining wall, drainage and pavement improvements. See EXPOSE AND PROTECT EXISTING UTILITIES.
UIC Student Recreation Facility Basketball and Tennis Courts	Electric/Lighting	Tennis Court and Basketball Court Lighting	UIC	To be protected where not impacted and temporarily disconnected and reconnected per Plans.

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UIC Student Recreation Facility Driveway/Access Road	Electric/Lighting	Roadway Lighting	UIC	To be protected where not impacted and temporarily disconnected and reconnected per Plans.
PR EB Taylor Exit – 7310+97	Water Main	Existing 54” Water Main	City of Chicago Department of Water Management	To be protected during excavation and retaining wall construction. Structural rehabilitation as identified.
PR EB Taylor Exit – 7312+66	Water Main	Existing 54” Water Main	City of Chicago Department of Water Management	To be relocated as detailed in the Plans and Special Provisions. To be protected during excavation and retaining wall construction. Structural rehabilitation as identified.
PR NB I-90/94 – 6129+06	Water Main	Existing 48” Water Main	City of Chicago Department of Water Management	To be protected during excavation and retaining wall construction. Structural rehabilitation as identified.
PR NB I-90/94 – 6129+51	Water Main	Existing 48” Water Main	City of Chicago Department of Water Management	To be protected during excavation and retaining wall construction. Structural rehabilitation as identified.
Varies	Combined Sewer	Existing/Proposed 60” Combined Sewer	City of Chicago Department of Water Management	Relocated per plans. To be protected during subsequent excavation and retaining wall construction.

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Varies	Water Main	Existing 48” Water Main at Cermak Pumping Station	City of Chicago Department of Water Management	To be protected during all proposed water main rehabilitation and relocation work.
Varies	Electric/Lighting	IDOT Electric/Lighting	IDOT	To be modified as shown on the plans. Facilities not shown to be modified shall be protected.
Varies	Communication/ITS	IDOT Communication/ITS	IDOT	All facilities shall be protected.
Des Plaines Street	Communication	Unknown Conduits	City of Chicago CDOT/OEMC	Protect/support existing conduits and cables perpendicular to water main and control valve removal.
Des Plaines Street	Water	8” Water Main	CDWM	Protect/support existing water main located perpendicular to water main and control valve removal.
Des Plaines Street	Gas	Gas main, unknown dimensions	Peoples Gas	Protect/support existing water main located perpendicular to water main and control valve removal.
Des Plaines Street	Fiber Optic	Various Telephone/Fiber Optic	MCI	Protect as required during fire hydrant removal and disconnection of fire hydrant lead.

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Des Plaines Street	Electric	Electric Conduit/Ductbank	ComEd	Protect as required during fire hydrant removal and disconnection of fire hydrant lead.
Vernon Park Place	Electric	Electric Conduit/Ductbank and Aerial Facilities	ComEd	Protect as required during water main removal, water main installation, including tee and inspection manhole.
Vernon Park Place	Water	8" Water Main and Valve Structures	CDWM	Protect as required during water main removal, water main installation, including tee and inspection manhole.

Stage 2

STAGE / LOCATION	TYPE	DESCRIPTION	OWNER	ACTION
All Stage 1 Items same for Stage 2				

The following contact information is what was used during the preparation of the plans as provided by the owner of the facility.

Agency/Company Responsible to Resolve Conflict	Name of contact	Address	Phone	e-mail address
ComEd	Peter Kratzer	25000 Governors Hwy. University Park, IL 60466	708-518-6209	Peter.Kratzer@ComEd.com
AT&T	Stan Plodzien	AT&T Civic Project Eng 1000 Commerce Drive Oak Brook, IL 60523	630-573-5453	sp3264@att.com

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UIC	Tom Wiese - UIC ACCC Foreman	1140 South Paulina Street, 124PSB (MC500) Chicago, Il 60612	312-355-5383	twiese@uic.edu
CDWM (Water Section)	John Barbaro (CTR Joint Venture)	Jardine Water Purification Plant 1000 E Ohio Street +51 Chicago, IL 60611	312- 894-4462	John.Barbaro@ctrwater.net
CDWM (Sewer Section)	Sid Osakada	Jardine Water Purification Plant 1000 E Ohio Street Chicago, IL 60611	312-744-0344	Sid.Osakada@cityofchicago.org
City of Chicago OEMC	Frank Kelly	1411 West Madison St. Chicago, IL 60607	312-746-9238	Frank.kely@cityofchicago.org
Peoples Gas	Chuck Creager	Peoples Energy 200 E. Randolph St, 21st Floor Chicago, IL 60601	312-240-7189	crcreager@peoplegasdelivery.com

The above represents the best information available to the Department and is included for the convenience of the bidder. The days required for conflict resolution should be taken into account in the bid as this information has also been factored into the timeline identified for the project when setting the completion date. The applicable portions of the Standard Specifications for Road and Bridge Construction shall apply.

Estimated duration of time provided in the action column for the first conflicts identified will begin on the date of the executed contract regardless of the status of the utility relocations. The responsible agencies will be working toward resolving subsequent conflicts in conjunction with contractor activities in the number of days noted.

The estimated relocation dates must be part of the progress schedule submitted by the contractor. A utility kickoff meeting will be scheduled between the Department, the Department's contractor and the utility companies. The Department's contractor is responsible for contacting J.U.L.I.E. prior to any and all excavation work.

Revised 7/26/17

Revise the first sentence of Article 603.07 to read:

"**603.07 Protection Under Traffic.** After the casting has been adjusted and the Class PP concrete has been placed, the work shall be protected by a barricade and two lights according to Article 701.17(e)(3)b."

CLEANING EXISTING DRAINAGE STRUCTURES AND SEWERS

Description. All existing storm sewers and combined sewers shall be considered as sewers to be cleaned, while all manholes, catch basins and inlets shall be considered as drainage structures to be cleaned insofar as the interpretation of this Special Provision is concerned. When specified for payment, the location of sewer and drainage structures to be cleaned will be shown on the Plans.

All existing drainage structures which are to be adjusted or reconstructed shall be cleaned according to Article 602.15 of the Standard Specifications. This work will be paid for according to Article 602.16 of the Standard Specifications.

All other existing storm sewers, combined sewers, and drainage structures which are specified to be cleaned on the Plans will be cleaned according to Article 602.15.

Basis of Payment. This work will be paid for at the contract unit price per foot for STORM SEWERS TO BE CLEANED, of the diameter specified, at the contract unit price per foot for COMBINED SEWERS TO BE CLEANED, and at the contract unit price per each for DRAINAGE STRUCTURES TO BE CLEANED.

TELEVISION INSPECTION OF SEWER

Description. This work will consist of televising the existing storm sewer and combined sewer systems before and after construction as specified in the contract drawings and proposed storm sewer and combined sewer systems after retaining wall construction as specified in the contract drawings.

Requirements. The Contractor must furnish a videotape of a televised inspection of the interior of all existing storm and combined sewers which may be impacted during construction under this contract. Record the videotape under the supervision of the Engineer. Perform two sessions of videotaping of the sewer: 1) before construction and 2) upon completion of the retaining wall and prior to the placement of final wearing surface.

As specified, proposed storm sewer and combined sewers shall be televised after sewer installation and after the completion of proposed retaining wall and other parallel items. The second televising effort shall not commence until approved by the Engineer.

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The name, phone number, and contact person of the firm which will be performing the videotaping of the sewer must be provided by the Contractor at the pre-construction meeting.

Clean all sewers prior to videotaping before construction. The final acceptance of the sewer shall be based on the sewer videotape. All deficiencies exposed on the videotape must be corrected by the Contractor within 30 calendar days of notification. All costs incurred by the Contractor to make the required repairs are to be borne solely by the Contractor. The Contractor is required to re-videotape the sewer to verify that the deficiencies noted on any previous videotape have been corrected to the satisfaction of the Chicago Department of Water Management - Sewers. All costs to re-videotape the sewer, regardless of the number of times required, will be borne solely by the Contractor.

Every effort is to be made by the Contractor to correct all deficiencies prior to the placement of the final wearing surface. If, in the opinion of the Engineer, the Contractor has delayed in submitting the videotape, the placement of the final wearing surface may be suspended. No time extension will be granted due to this suspension and the Engineer will be sole judge as to any delays.

Include location maps, legends and descriptions on all videotape submittals. 2 copies of each submittal are required.

Method of Measurement. This work will be measured for payment in sewer televising per foot for the videotaping of the sewer before construction and prior to placement of the final wearing surface or after completion of the retaining wall or at a time approved by the Engineer.

Basis of Payment. This work will be paid for at the contract unit price per foot for the TELEVISION INSPECTION OF SEWER.

The cleaning of sewers prior to videotaping before construction shall be paid for as STORM SEWERS TO BE CLEANED, of the diameter specified or COMBINED SEWERS TO BE CLEANED.

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COMBINED SEWERS (CDWM)

Description: This work shall consist of constructing combined sewers of the class, type, and diameter specified, at the locations shown on the Plans or as directed by the Engineer. This work shall be performed in accordance with the applicable portions of Section 550 of the IDOT Standard Specifications for Road & Bridge Construction, the current City of Chicago Department of Water Management (DWM) Regulations for Sewer Construction and Stormwater Management and Sections 30 and 31 of the Standard Specifications for Water & Sewer Construction in Illinois, except as modified herein.

In order to increase the structural capacity of the RCP pipe to be used within this Contract, all 60" combined sewer shall utilize Class V RCP.

General Requirements: All combined sewers shall be constructed using reinforced concrete pipe, which shall conform to ASTM Designation C 76, Class II. Concrete pipe joints shall conform to ASTM C 361 or C 443 for flexible gasket material, as specified in Article 30-4.01 of the Standard Specifications for Water & Sewer Construction in Illinois.

Pipe laying, jointing, and testing for the combined sewers shall be performed in accordance with Section 31 of the Standard Specifications for Water & Sewer Construction in Illinois.

The Contractor must maintain flow at all times in the existing sewer during and after construction. The Contractor is responsible for pumping and bypassing sewer flow from the existing sewer. The Contractor must take all necessary precautions to ensure that the water pressure created by diverting or retarding the flow does not cause any damage or flooding to public or private property being served by the main sewer section being repaired or replaced. Temporary pumping shall be routed to a downstream City of Chicago sewer. The proposed pumping plan shall be approved by the Engineer prior to the installation of any pumping elements, including any temporary berms, weirs or bulkheads.

Sewer connections from the UIC Student Recreation Facility shall be maintained at all times. If the physical connection is altered due to construction, temporary pumping shall be utilized in order to maintain flows.

Trenches resulting from the installation of combined sewer shall be backfilled according to the applicable requirements of Article 550.07 with the exception that the lifts shall not exceed 6 in. and all lifts shall be compacted to not less than 95 percent of the standard laboratory density.

Additional sewer monitoring after installation shall follow the requirements included within SEWER SETTLEMENT MONITORING.

Method of Measurement: Combined sewers will be measured for payment in place in feet.

Basis of Payment: This work will be paid for at the contract unit price per foot for COMBINED SEWERS at the class, type and the diameter specified (CDWM). In order to increase the structural capacity of the RCP pipe to be used within this Contract, all 60" combined sewer shall utilize Class V RCP.

All joints, fittings, other appurtenances and sewer testing will also be included in the unit cost of this item. Sewer monitoring required within SEWER SETTLEMENT MONITORING will not be paid for separately, and will be included in the unit cost of this item.

Trench backfill will be paid for according to Article 208.04.

COMBINED SEWER (WATER MAIN REQUIREMENTS) (CDWM)

Description: This work shall consist of constructing combined sewers of the diameter specified utilizing ductile iron pipe, at the locations shown on the Plans or as directed by the Engineer, including all bends, fittings and all other appurtenances. This work shall be performed in accordance with the applicable portions of Section 550 of the IDOT Standard Specifications for Road & Bridge Construction, the current City of Chicago Department of Water Management (DWM) Regulations for Sewer Construction and Stormwater Management and Sections 30 and 31 of the Standard Specifications for Water & Sewer Construction in Illinois, except as modified herein.

Materials: Pipe shall consist of ductile iron pipe, class 52 or equivalent with push on self-contained pre-lubricated gaskets or mechanical joints. The ductile iron pipe shall be encased in polyethylene wrap and include all manufacturer required corrosion protection. Ductile iron pipe and fittings shall be supplied with standard thickness cement lining conforming to ANSI/AWWA C104/A21.4. ductile iron pipe and fittings shall be supplied with an asphaltic coating conforming to AWWA C151 and AWWA C110.

General Requirements: Pipe laying, jointing, and testing for the combined sewers shall be performed in accordance with Section 31 of the Standard Specifications for Water & Sewer Construction in Illinois.

The Contractor must maintain flow at all times in the existing sewer during and after construction. The Contractor is responsible for pumping and bypassing sewer flow from the existing sewer. The Contractor must take all necessary precautions to ensure that the water pressure created by diverting or retarding the flow does not cause any damage or flooding to public or private property being served by the main sewer section being repaired or replaced.

Trenches resulting from the installation of combined sewer shall be backfilled according to the applicable requirements of Article 550.07.

Additional sewer monitoring after installation shall follow the requirements included within SEWER SETTLEMENT MONITORING.

Method of Measurement: Combined sewers will be measured for payment in place in feet.

Basis of Payment: This work will be paid for at the contract unit price per foot for COMBINED SEWER (WATER MAIN REQUIREMENTS) of the diameter specified (CDWM).

All joints, bends, fittings, polyethylene wrap, corrosion protection, other appurtenances and sewer testing will also be included in the unit cost of this item. Sewer monitoring required within SEWER SETTLEMENT MONITORING will not be paid for separately, and will be included in the unit cost of this item.

Trench backfill will be paid for according to Article 208.04.

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COMBINED SEWERS JACKED IN PLACE (CDWM)

Description: This work shall consist of furnishing and installing, by auguring and jacking, combined sewers of the required inside diameter at locations shown on the Plans.

The sewer shall be installed in accordance to IDOT Standard Specifications Section 552, except as herein modified.

In order to increase the structural capacity of the RCP pipe to be used within this Contract, all 60" combined sewer shall utilize Class V RCP.

The excavation at the south end of the sewer run to be installed is to be considered EARTH EXCAVATION per Section 202 of the Standard Specifications. The excavation is to be performed on the exposed side of the proposed TEMPORARY SOIL RETENTION SYSTEM. No excavation at the south end of the sewer run shall be assumed to be included under this item. All excavation required to install the sewer at the north end of the sewer run is included in this work.

Submittals: The Contractor shall submit calculations, drawings and details for the design and construction of the pipes via auguring and jacking for review and approval, including but not limited to, temporary soil retention systems, sheeting, bracing or shoring for the jacking/receiving pit, dewatering, thrust blocks for pipe jacking, casing or liner design if casing or liner is used and all other materials and equipment necessary for a complete installation, sealed and signed by an Illinois licensed Structural Engineer employed by the Contractor for Engineer review and approval. The submittal shall indicate loads, codes and specifications to confirm that the design conforms to the applicable codes and design requirements. The submittal must be approved prior to the commencement of this work. Engineer review shall not relieve the Contractor of his responsibility for the design of the jacking system.

Construction Requirements: The Contractor shall evaluate the subsurface soil conditions from the soil boring logs prior to submitting means and methods for constructing the pipes via auguring and jacking. A minimum factor safety of 2 should be considered for this application.

Any change in elevation of the adjacent ground of 0.25 inches or greater due to jacking operations shall be corrected by the Contractor at his/her own expense. Corrections in pavement can be made by grinding for increases in elevation or asphalt milling and overlay for decreases in elevation.

The size of the jacking/receiving pit located on the north end of the sewer run shall meet Occupational Safety and Health Administration (OSHA) construction requirements. A stabilized work platform shall be constructed in the jacking/receiving pit based on the Contractor's methods and equipment to be used. Any temporary retention system required to support the jacking/receiving pit excavation shall be designed and constructed per Article 522.07, Temporary Soil Retention System. The Plans include a schematic layout of a proposed temporary soil retention system at the north end of the sewer run for information only. The Contractor shall evaluate the actual size of the required jacking/receiving pit based on intended means and methods. The design calculations, site layout and shop drawings for the temporary soil retention system proposed by the Contractor shall be submitted according to Article 522.05. This approval will not relieve the Contractor of responsibility for the safety of the excavation and structural adequacy of adjacent properties. Approval shall be contingent upon acceptance by all involved utilities and/or railroads.

The Contractor shall design a temporary soil retention system at the north end of the sewer run such that at any location the maximum total lateral deflection at the top of the temporary soil retention system shall not exceed 1.00 inch. The Plans include soil boring log data within the vicinity of the project. If deemed necessary, the Contractor shall obtain additional geotechnical data at no additional cost to the contract.

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The Contractor will also be required to collect and dewater any accumulated groundwater seepage in the pit.

The excavation at the south end of the sewer run to be installed is to be considered EARTH EXCAVATION per Section 202 of the Standard Specifications. The excavation is to be performed on the exposed side of the proposed TEMPORARY SOIL RETENTION SYSTEM. No excavation at the south end of the sewer run shall be assumed to be included under this item. All excavation required to install the sewer at the north end of the sewer run is included in this work.

When executing this work, the Contractor must monitor adjacent buildings for vibration and displacement and follow the related requirements and restrictions as outlined in the CONSTRUCTION VIBRATION MONITORING Special Provision.

As required, additional sewer monitoring after installation shall follow the requirements included within SEWER SETTLEMENT MONITORING.

Method of Measurement: This work will be measured for payment in place in feet.

Basis of Payment: This work will be paid for at the contract unit price per foot which price shall include all labor, materials, equipment and monitoring for COMBINED SEWERS JACKED IN PLACE at the diameter specified (CDWM). Sewer monitoring required within SEWER SETTLEMENT MONITORING will not be paid for separately, and will be included in the unit cost of this item. All excavation and temporary soil retention required at the south end of the sewer run will be paid for separately under other items.

REINFORCED CONCRETE PIPE ELBOW (CDWM)

Description. This work shall be in accordance with the applicable portions of Section 542 of the Standard Specifications. The pipe elbow shall be constructed of reinforced concrete according to Article 1042.06 at the locations as indicated on the Plans. The material and installation requirements shall be according to the latest edition of the “Standard Specifications for Water and Sewer Main Construction in Illinois”, “City of Chicago Department of Water Management (DWM) Regulations for Sewer Construction and Stormwater Management”, “City of Chicago DWM Standard Specifications for Water and Sewer Main Construction."

In order to increase the structural capacity of the RCP pipe to be used within this Contract, all 60” combined sewer, including elbows, shall utilize Class V RCP.

Additional sewer monitoring after installation shall follow the requirements included within SEWER SETTLEMENT MONITORING.

Method of Measurement. This work will be measured for each REINFORCED CONCRETE PIPE ELBOW, of the diameter specified, (CDWM) and in accordance with Article 542.10

Basis of Payment. In accordance with Article 542.11.

Sewer monitoring required within SEWER SETTLEMENT MONITORING will not be paid for separately, and will be included in the unit cost of this item

Method of Measurement: Temporary soil retention systems furnished and installed will be measured for payment in place, in square feet (square meters). The area measured shall be the minimum of vertical exposed surface area envelope of the excavation supported by temporary soil retention system.

Basis of Payment: This work will be paid for at the contract unit price per square foot (square meter) for TEMPORARY SOIL RETENTION SYSTEM.

PERFORMANCE BASED NOISE ABATEMENT WALL (PRECAST CONCRETE)

This work shall consist of furnishing the design, shop drawings, materials, post anchorage, and construction of structure mounted concrete noise abatement walls (noise walls) according to this Special Provision, the Contract Plans and/or as directed by the Engineer.

General. The noise abatement wall shall consist of precast concrete panels spanning between vertical posts attached to/supported by another structure (structure mounted) as shown on the plans. The posts shall be steel, unless otherwise specified on the Contract Plans. The design, material, fabrication and construction shall comply with this Special Provision and the requirements specified by the noise wall supplier selected by the Contractor for use on this project. The walls shall have no omissions or gap except as detailed in the Contract Plans.

The Contractor shall verify the locations for the proposed structure mounted wall for conflicts and inform the Engineer in writing of any conflicts before realigning or redesigning the wall. The Contractor shall realign or redesign the wall to avoid any conflicts.

Wall components shall be fabricated and erected to produce a precast concrete reflective noise wall system. Substitution of alternate materials in lieu of precast concrete panels will not be allowed.

All appurtenances behind, in front of, under, over, mounted upon, or passing through the noise wall, such as drainage structures, fire hydrant access, highway signage, emergency access, utilities, and storm sewers shall be accounted for in design of the wall.

The noise walls shall be designed and constructed to extend to the minimum lines, grades and dimensions of the wall envelope, with no omissions or gaps, as shown on the Contract Plans and as directed by the Engineer.

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Submittals. A complete wall design submittal, including design calculations for wall panels, posts, and all connections and shop drawings shall be submitted to the Department for review and approval no later than 90 days prior to beginning construction of the wall. The time required for the preparation and review of these submittals shall be charged to the allowable contract time. Delays caused by untimely submittals or insufficient data will not be considered justifications for any time extensions. No additional compensation will be made for any additional material, equipment or other items found necessary to comply with the project specifications as a result of the Engineer's review. The Contractor will be required to submit the necessary shop drawings. All submittals shall be prepared and sealed by an Illinois Licensed Structural Engineer.

Submittals shall include all structural calculations, details, dimensions, quantities and cross sections necessary for the construction of the noise abatement walls including but not be limited to:

(1) Structural design calculations for all structural members, and connections prepared and sealed by an Illinois Licensed Structural Engineer, and prints of shop drawings on reduced size 11 x 17 in. (275 x 425 mm) sheets in accordance with Article 503.05 and 1042.03(b) of the Standard Specifications.

(2) A plan view of the wall indicating the stations and offsets required to locate the wall.. Each panel and post shall be numbered and any changes in type or size shall be noted. The centerline of any utilities passing under the wall and locations of expansion joints, access doors, lighting, signing, curb cuts, and drainage structures shall also be shown.

(3) An elevation view of the wall, indicating the elevations of the top of the posts and panels as well as the elevations of the bottom of the panels, , all steps in wall system, the finished grade line, and vertical clearances to existing utilities and storm sewers. Each post size and length, panel type and size, shall be designated.

(4) A typical cross section(s) that shows the panel, post, , and the elevation relationship between the supporting structure and the finished grade as well as slopes adjacent to the wall.

(5) All general notes required for constructing the wall.

(6) All details for the steps in the bottom of panels shall be shown. The bottom of the panels shall be located at or below the theoretical bottom of panel line shown on the Contract Plans. The theoretical bottom of panel line is assumed to be at the top of the structure to which it is mounted, unless otherwise shown on the Contract Plans.

(7) Tops of the panels and posts shall extend to or above the theoretical top of wall line shown on the Contract Plans. All panel tops shall be cast and placed horizontally with any changes in elevation accomplished by stepping adjacent panel sections at posts. Steps shall not exceed 1 ft (300 mm) in height, except within the last 50 ft (15 m) where 2 ft (600 mm) steps will be permitted.

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(8) All panel types shall be detailed. The details shall show panel weight, orientation, all dimensions necessary to cast and/or fabricate each type of panel, the reinforcing steel, and location of post or foundation connection hardware as well as lifting devices embedded in the panels. The Noise Reduction Coefficient (NRC) of each panel of the absorptive face shall be noted.

(9) All post types shall be detailed. The details shall show post weight, orientation, all dimensions necessary to cast and/or fabricate each type of post, the reinforcing steel, connecting plates, and anchorage details as well as lifting devices embedded in or attached to the posts. Post spacing for walls shall be limited to a distance that does not over stress the supporting structure.

(10) Details of wall panels with appurtenances attached to or passing through the wall, as shown on the contract plans, such as utilities, emergency access doors, framed openings, drainage structures, signs, etc. shall be shown. Any modifications to the design or location of these appurtenances to accommodate a particular system shall also be submitted.

(11) All architectural panel treatment, including color, texture and form liner patterns shall be shown. All joints shall be placed horizontal or vertical and shall be aligned with adjacent panels.

(12) The details for the connection between panels and posts as well as their connection to the supporting structure shall be shown.

(13) Testing, certifications and reports from independent laboratories documenting that the panel's sound Transmission Loss (TL) and NRC for the panel satisfy the criteria shown in the design criteria section of this specification. The testing results for the flame spread, smoke density and freeze-thaw/salt scaling requirements described in the materials section of this specification shall also be submitted. If unable to document panel and post deflections by calculations, reports of full scale testing shall be submitted to demonstrate the deflection criteria have been met.

(14) Manufacturer recommended installation requirements, a sequence of construction and a detailed bill of materials shall be included.

The Contractor shall submit concrete stain manufacturer's standard color chart for review and initial color selection. The Department will select not more than three colors for the Contractor to produce 12" x 12" color concrete samples including the sealer. The samples will utilize the formliner type A4, as shown on drawings. The Department will make final color selection.

The Contractor shall deliver to the Department, 2 ft x 2 ft color samples in a range of colors to match Department specified color. Sample to include surface finish (stain and sealant) and the proposed formliner, texture 4. The Department will make final color selection

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After the acceptance of color and finish the Contract shall provide two 4 ft x 4 ft samples. Samples to represent upper portion of Panel “A” and middle portion of panel “B”. Show each formliner pattern and texture next to each other, including stain and sealer, as to be used on the final panel type ”A” and “B”.

The Contractor shall submit sample of post, approximately 4 ft long. Paint to match final approved color for the concrete panel including the sealer.

The Contractor shall submit mockup of one full size noise abetment wall panel “B”, and two posts, showing the final appearance of texture and finish, including stain and sealer. If the test panels and posts are not approved, additional test panels and posts shall be furnished until a satisfactory color and finish is obtained, at no additional cost to the Department. The mockup as approved by the Department shall then be the standard of comparison for the remaining finishes. The Contractor shall consider in his schedule a 14-calendar day period from the date the submittal is received by the Engineer to the expected date of return with comment. This 14-day review period shall be considered with any resubmittal, and such resubmittals shall not be considered cause for an extension of time to the Contract. Mockup to be reviewed on site and the approved mockup can be incorporated into Work as directed by the Department.

The samples shall be made at the same plant manufacturing the product for the noise walls under this contract, and shall be representative of those which will be tested per this specification. Once the color sample is approved, a batch shall be designated by batch number and date and will remain the standard for the entire project. At the conclusion of the project the samples are to be removed and disposed of by the Contractor.

The Contractor shall submit site access plans showing access and limits of the work areas for the installation of the wall. Any required traffic controls shall be according to the requirements in the plans or the special provision for TRAFFIC CONTROL PLAN.

The initial wall and foundation design submittal shall include three (3) sets of shop drawings and calculations. One set of drawings will be returned to the Contractor with any corrections indicated. The Contractor shall do no work or ordering of materials for the structure until the Engineer has approved the submittal.

Design Criteria. The wall system shall be designed to withstand wind pressure, applied perpendicular to the panels in either direction, according to the AASHTO LRFD Bridge Design Specifications. The noise wall design life shall be 75 years unless otherwise noted. The wall system shall be designed to withstand any active earth pressure and live load surcharge at locations indicated on the plans. The contractor shall be responsible for the structural adequacy of the panels, posts, and connections. Prestressed and/or post tensioned panel concepts will not be permitted.

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The unfactored design wind loading shall be as specified on the plans but not less than 35 psf (1.7 kPa). This loading can be reduced to 30 psf (1.4 kPa) for where it is located more than a distance equal to the height of the wall away from the edge of pavement. When a sound wall is also required to support earth pressures, the unfactored design active earth pressure shall be based on an equivalent fluid pressure of 55 pounds per cubic foot (880 kg/m^3) and a minimum live load surcharge pressure of 2 feet (600 mm) of earth pressure. The earth pressure fill height shall be defined by the proposed grade line elevation and the theoretical bottom of panel line.

The post spacing for structure mounted noise walls shall be as shown on the plans but in no case greater than 15 feet (4.6 m) center to center.

The maximum allowable panel deflection shall be no more than the panel length (L) divided by 240 (L/240). The vertical posts shall have a maximum deflection of (H/180) relative to the top of the foundation, where H is the height of the post above the foundation. When meeting the deflection limits cannot be demonstrated by calculations, a lateral load test and report shall be submitted to the Engineer indicating that the above noted design lateral loads can be applied to the panels and/or posts without exceeding noted deflection tolerance. The test shall apply lateral loads to the panel simulating uniform wind pressure, and earth pressure when present.

The design shall account for the presence of all appurtenances mounted on or passing through the wall such as drainage structures, existing or proposed utilities, emergency access doors and other items. The wall shall be designed with consideration of the movements in the wall due to temperature changes, dead loads and wind loads. Locations and spacing of expansion and contraction devices shall be as designed by the Contractor. In addition to expansion/contraction considerations must also accommodate vibration. Shock absorbing vibration pads shall be utilized at bearing points.

Corrugations, ribs or battens on the panel must be oriented vertically when erected. The panels shall be designed to prevent entrapment and ponding of water. The walls shall not have openings allowing the perching or nesting of birds or the collection of dirt, debris or water.

The walls shall not have handholds or grips promoting climbing of the walls. Any bolts or fasteners used to connect material to the supporting panel, posts, or foundations shall be recessed or embedded in concrete, hidden from view and weather exposure. No external mechanical fastening devices such as frames or clips shall be used for these connections.

The noise abatement material shall be designed to achieve a sound TL equal to or greater than 20 dB in all one-third octave bands from 100 hertz to 5000 hertz, inclusive, when tested according to ASTM E-90. The sound absorptive material shall have a NRC value 0.5 or less. For the side of the walls specified as reflective, no minimum NRC is required.

The NRC shall be determined per ASTM E795, tested according to ASTM C423 (mounting type A). The ratio of noise absorptive material on the panel surface to total wall area (including posts) shall be greater than 90 percent. NRC testing shall be performed on coated samples, utilizing the stain that will be applied for color.

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Access Doors. All access doors shall be designed to fit within the design of the noise wall as shown on the plans. Doors shall be complete with hardware and locking devices. Each door shall provide a 3 ft (0.9 m) wide by 7 ft (2.1 m) high minimum clear access opening. Both door jambs shall be securely fastened to anchored posts. Front and back face of the installed door shall be flush with the faces of the noise wall.

Perimeter and internal door frames shall consist of welded hot dip galvanized steel channels and miscellaneous angle stiffeners and plates designed to provide support for noise wall panels to match the noise wall material as specified in this special provision. Infill noise panel geometry and color shall match the adjacent noise wall panels. Noise wall panels shall be fastened to steel frames as per panel manufacturer's recommendations.

The door, jambs, head, hinges, door appurtenances, and adjacent ground mounted posts shall be designed to withstand the wind pressure of 30 psf (1.4 kPa) with the door in fully open and fully closed positions and support the weight of the door and a 300 lb (136 kg) vertical load on the non-hinged side of the door. Provide steel bracing as required. Door bottom shall be equipped with drainage holes to avoid accumulation of trapped moisture.

Door jambs and head section shall be hot dip galvanized steel. Door hinges shall be barrel type, edge mount, extra heavy-duty, hot dip galvanized steel or stainless steel. The hinges shall be designed to support the weight of door assembly, wind loads on the open door, and a 300 lb (136 kg) vertical load on the non-hinged side of the door.

Door pulls shall be provided on both sides of access door(s). Door locking hardware shall be hasp-type to be used with a padlock and shall be located according to local fire department or other requirements as applicable. A solid steel emergency access lock box system shall be provided and mounted near the hasp location at the steel post on the locking hardware side of door. The lock box for emergency access doors shall be according to local fire department requirements.

Doors shall be equipped with lifting bolts or beams as required for safe lifting of door units.

Materials. Noise wall materials shall conform to the supplier's standards, AASHTO Specifications for noise walls and the following:

(a) Reinforcement bars shall satisfy ASTM A706 Grade 60 (400). Welded wire fabric shall be according to AASHTO M 55. All reinforcement in the wall panels shall be epoxy coated.

(b) Anchor bolts shall conform to ASTM F1554 Grade 55 or 105 and shall be galvanized per AASHTO M232.

(c) The precast elements shall be according to applicable portions of Section 1042 of the Standard Specifications. Coarse Aggregate shall meet the requirements of Article 1004.02(f)) of the Standard Specifications. Concrete shall be Class PC with a minimum compressive strength of 4500 psi (31,000 kPa)at 28 days. Dry cast concrete element will not be permitted.

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(d) For sound absorptive panels, the manufacturer shall provide test information from an independent lab that the panels meet specified durability requirements. This information shall be either a freeze/thaw test according to AASHTO T 161 (ASTM C 666) Procedure A or B, or it shall be a salt scaling test according to ASTM C 672.

For the freeze/thaw test, a minimum of three specimens shall have been tested. The maximum weight (mass) loss after 300 cycles shall be 7.0 percent. The panel shall have no cracks, delamination (applies to composite material panel), or other excessive physical distress upon completion of the test.

For the salt scaling test, the test method shall be modified as outlined in Appendix D of the Guidelines for Evaluating the Performance of Highway Sound Barriers by the Highway Innovative Technology Evaluation Center (HITEC), A Service Center of the Civil Engineering Research Foundation, CERF REPORT: HITEC 96-04, Product 24 (October 1996). The maximum weight (mass) loss after 50 cycles using a 3 percent sodium chloride solution shall be 0.2 psf (0.1 kg/m^2).

The panel shall have no cracks, delamination (applies to composite material panel), or other excessive physical distress upon completion of the test.

For sound reflective panels, evidence of durability by one of the two previously mentioned tests is required for all materials except Class PC concrete.

(e) The manufacturer for the noise abatement wall shall provide their quality control plan for testing the product, and test results shall be provided upon request by the Engineer. Manufacturers on the Department's Qualified Product List of Certified Precast Concrete Producers who are approved for noise abatement walls will be considered in compliance with this requirement.

(f) Steel plates and posts shall conform to AASHTO M 270 (M 270 M) Grade 36 (250) or 50 (345). All portions of the Structural Steel shall be galvanized according to AASHTO M111 and ASTM A385. Where applicable galvanized surfaces shall be prepared for paint in accordance with the paint manufacture's recommendations. Steel bolts, nuts, and washers shall be galvanized according to AASHTO M232.

(g) Lifting inserts cast into the panels shall be hot dipped galvanized.

(h) Non shrink grout shall be according to Section 1024 of the Standard Specifications.

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(i) The default color of both sides of the panels, posts and other visible elements shall be a light brown earth tone unless specified otherwise on the Contract Plans Colors shall be achieved through the use of integral pigments or stains, which are in compliance with the environmental regulation of the State of Illinois. Components manufactured with integral pigment shall be tested and certified in conformance to ASTM C979. Stains shall be non film forming, penetrating stains. Stains shall be applied to concrete at the cured age of the manufacturer's recommendation. Surface preparation and application shall be according to manufacturer written recommendations. Coloring of concrete elements shall be accomplished using a single component water based, sound absorptive, penetrating, architectural stain that is weather resistant. Stains and/or pigments must be applied at the manufacturing plant; application in the field on site will not be allowed. Paint or colored concrete coatings are not acceptable. The final color shall be consistent with the quality and appearance of the approved sample.

(j) The finish pattern of the precast panels shall be as specified on the Contract Plans.

(k) The form liner used to create the pattern shall be of high quality and capable of withstanding anticipated concrete pour pressures without causing leakage or causing physical defects. The textured liner shall be made from high-strength elastomeric urethane material which shall not compress more than 0.02 feet when poured at a rate of 10 vertical feet per hour. The form release agents shall be non-staining, non-residual, and non-reactive. The forms for smooth surfaces shall be plastic coated to provide a smooth surface free of any impression.

(l) With the exception of the steel and Portland cement concrete elements of the wall, all materials shall be tested for flame spread and smoke density developed according to ASTM E84. The material must exhibit a flame-spread index less than 10 and a smoke density developed value of 10 or less.

Fabrication. All precast units shall be manufactured according to Section 504 of the Standard Specifications, and the following requirements and tolerances with respect to the dimensions shown on the approved shop drawings.

(a) The minimum reinforcement bar cover shall be 1 1/2 in (40 mm).
(b) Panel dimensions shall be within 1/4 in (6 mm).
(c) All hardware embedded in panels or posts shall be within 1/4 in (6 mm).
(d) Angular distortion with regard to panel squareness, defined as the difference between the two diagonals, shall not exceed 1/2 in (13 mm).
(e) Surface defects on formed surfaces measured on a length of 5 ft (1.5 m) shall not be more than 0.10 in (2.5 mm).
(f) Posts shall be installed plumb to within 1/2 in (13 mm) of vertical for every 15 ft (5 m) of height and to within 1/2 in (13 mm) of the station and offset indicated on the approved shop drawings.
(g) Panel reinforcement and lifting devices shall be set in place to the dimension and tolerances shown on the plans and these special provisions prior to casting.

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The date of manufacture, the production lot number, and the piece-mark shall be clearly noted on each panel.

Absorptive material shall be permanently attached to their supporting elements and no external mechanical fastening systems such as frames or clips shall be used. Any bolts or fasteners used shall be recessed or embedded below the surface.

Any chipping, cracks, honeycomb, or other defects, to be allowed, shall be within acceptable standards for precast concrete products according to Section 1042 of the Standard Specifications and as determined by the Engineer.

Construction. The Contractor shall obtain technical assistance from the supplier during wall erection to demonstrate proper construction procedures and shall include any costs related to this technical assistance in the contract unit price for Noise Abatement Wall. The instructions provided by the wall supplier are guidelines and do not relieve the contractor of the responsibility to adhere to contract requirements.

It is recommended that all bottom panels be installed for a length of wall prior to placing middle or top panels. After bottom panels are in-place, finish grading can be accomplished with heavy equipment by reaching over the in-place panels.

Site excavations and/or fill construction shall be completed to plan elevations and profiles prior to the start of wall foundation construction. All underground utility or drainage structure installation shall be completed prior to foundation installation. The ground elevations as shown on the plans and the approved noise wall shop drawings shall be verified by the contractor and discrepancies corrected prior to material fabrication. Buried utilities shall be marked to verify proper clearance from the drilled foundations. The Contractor should consider overhead obstruction such as electric and telephone wires prior to wall erection.

The panels shall be delivered to the project site in full truckload quantities. They may be off-loaded individually or by forklift with a solid steel plate spanning between the forks providing uniform, fully distributed bearing support to the underside of the panels. Units shall be shipped, handled and stored in such a manner as to minimize the danger of staining, chipping, spalling, development of cracks, fractures, and excessive bending stresses. Panels shall be stored and shipped in bundles, on edge. Any touch up and repair is at the Contractor’s expense and shall be carried out according to the manufacturer’s recommendations.

Method of Measurement. Noise abatement walls will be measured in square feet (square meters) from the wall envelope, defined by the theoretical top of wall line to the theoretical bottom of panel line for the length of the wall as shown on the Contract Plans.

Access doors shown on the Contract Plans will not be measured for payment.

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Basis of Payment. This work will be paid for at the contract unit price per square foot (square meter) for NOISE ABATEMENT WALL, STRUCTURE MOUNTED.

This payment shall be considered to be full compensation for all work including the development of shop drawings, working drawings and design calculations; physical sample (mock-ups); removal and disposal of the mock-ups; any excavation and/or backfilling with granular backfill for structures; furnishing and installing anchor bolts, hardware, fasteners, access doors and maintenance doors; testing; samples; casting, storing, transporting and erecting Noise Abatement Wall panels and posts; forming, pouring and curing concrete; providing aesthetic surface treatment including form liners if required and staining for approved colors; sealer; temporary structures; technical assistance from the manufacturer; preparing and furnishing warranties; and furnishing all labor, equipment, tools and incidentals necessary to complete the Work as specified.

WATER MAIN REMOVAL

Description. This work will consist of the removal of water main of various sizes and all bends, fittings and all other appurtenances. Water main shall be removed according to Article 561 of the "Standard Specifications" and in conformance with the methods identified in Article 551.03 of the "Standard Specifications"

The Contractor is advised that the work will be performed on a potable water system owned and operated by the Chicago Department of Water Management (CDWM). As such, all operations shall be performed in such a way as to avoid contamination of the water system through the introduction of contaminants or the process of the work. All work will require the review and approval of the CDWM prior to the commencement of work operations.

The water main shutdown required to perform the Work will only be allowed based upon scheduling by CDWM. The Work must be substantially complete in order to place the water main back into service in coordination with CDWM. The construction schedule must clearly indicate when testing of the new water main items will be made and for the water main to be inspected by CDWM prior to placing the new water main into service.

Any water main dewatering required during the removal of water main pipe shall be considered included as part of the successful removal of the water main.

If the removal limits shown in the Plans results in a portion of existing water main pipe abandoned without removal or connection to proposed water main, the existing remaining pipe shall be abandoned by installing a concrete bulkhead within the end of the pipe. The bulkhead shall extend a minimum length into the pipe equal to the diameter of the pipe being filled or one (1) foot, whichever length is greater.

Any temporary support or bracing of existing utilities, including existing water mains that will remain in service, must be coordinated with the affected utilities and is included under this item unless support/bracing is performed by affected utilities.

Extreme care shall be exercised during all work in order to avoid damaging existing cast iron water main pipe and fittings, along with existing thrust restraints and the vault structure.

Salvage the valve and operator for CDWM. If CDWM does not want, then dispose of these items along with all water main pipe and fittings, concrete, masonry or other materials removed under this Item in a lawful manner meeting all IDOT Policies and Procedures.

The removable roof slab restoration shall include the sealing of all edges to create a water tight closure.

Method of Measurement. The work under this item as described herein will not be measured separately. All work will be paid for as lump sum.

Basis of Payment. This work will be paid at the contract unit price per lump sum for FEEDER WATER MAIN DISCONNECT which payment shall be full compensation for the work described herein and as directed by the Engineer.

WATER MAIN ABANDON, FILL WITH CLSM

Description. Work under this item will include the complete filling of the abandoned 54" northeast feeder main after disconnection and or removal identified under other items. The intent of this item is to completely fill the 54" water main below Westbound (Northbound) I-90/94 and coordinate access for additional filling of the 54" water main from the east I-90/94 right-of-way to Des Plaines Street by City of Chicago Department of Water Management (CDWM).

All work shall be coordinated with CDWM.

Controlled Low-Strength Material (CLSM) to be used under this item shall be considered any flowable fill material designed to flow through the pipe to be filled based upon the available access locations with sufficient strength to meet the satisfaction of the Engineer.

Submittals. Prior to the start of work under this item, the following items shall be approved by the Engineer: CLSM mix design, access plan and construction details for filling location at Cermak Pumping Station, access plan and construction details for the filling location on the east side of I-90/94, CLSM placement sequence and finishing details and schedule for filling operations to be shared by the Engineer with outside agencies.

Materials. The material to be submitted for approval shall meet the requirements of Article 1019.04 of the Standard Specifications, with exceptions made by the Engineer in order to ensure the flowability of the material considering the profile of the pipe to be filled and the available access locations.

Construction Requirements. The water main abandonment shall be performed from a minimum of two locations, including the west and east limits. The west limit is at the west limit of the existing 54" concrete water main pipe within the Cermak Pumping Station vault structure at the existing water main pipe exposed under FEEDER WATER MAIN DISCONNECT. The east limit is located at the top of a 90-degree vertical bend of the existing 54" concrete water main pipe. The east limit shall be accessed by excavating to expose the 54" concrete water main pipe and creating an opening in the pipe in order to utilize as a CLSM placement location.

Prior to the start of filling, any required venting points shall be installed. All access to create venting points shall be approved by the Engineer. All access from Westbound (Northbound) I-90/94 and the entrance ramp from Taylor Street to Westbound (Northbound) I-90/94 shall follow the requirements of KEEPING THE EXPRESSWAY OPEN TO TRAFFIC, other Special Provisions and direction from the Engineer. All damages identified within FAILURE TO OPEN TRAFFIC LANES TO TRAFFIC shall apply.

CLSM shall be placed in a manner that completely fills the water main pipe between the access points. There is an elevation difference between the two primary access points. The filling operation shall utilize appropriate lifts to meet the requirements.

Any opening created in the existing pipe as a fill or vent point shall be completely filled with CLSM. If it is not, then the opening shall be permanently patched and sealed so that water and or soil cannot flow into the abandoned pipe.

After the completion of filling activities, all excavations shall be backfilled and restored to pre-construction condition.

Access to East Limit Area. The described east limit at the top of a 90-degree vertical bend is located in a relatively narrow area between an existing retaining wall along Westbound (Northbound) I-90/94 and the existing Extra Space Storage building (707 W. Harrison Street). Prior to creating the opening in the existing water main, the existing fence and gate located on the north side of Vernon Park Place shall be removed and all debris within the area between the retaining wall and the building shall be removed and disposed of properly. Proposed equipment utilized to access the existing water main and to perform all work under this item shall consider the narrow and uneven access area, as well as the sensitive nature of the Extra Space Storage facility.

Coordination with CDWM. An additional filling operation will be undertaken by the CDWM. This secondary operation is proposed by CDWM to fill the remaining portions of the water main pipe to be abandoned extending from the east access point into Des Plaines Street. In order to allow CDWM sufficient time to plan their proposed improvements, the Engineer shall approve the schedule of work under this item and for water main removal work within Des Plaines Street at least 90 days prior to the start of work.

The access point for CDWM within Des Plaines Street will be created as part of water main removal included in other items. The access shall be created, coordinated and maintained to the satisfaction of the Engineer with concurrence with CDWM. All coordination and maintenance of the area is included within work under this item. After water main removal included in other items, remaining abandoned water main connections shall be plugged with a concrete bulkhead prior to the filling operation by CDWM. In coordination with CDWM, a concrete bulkhead shall be placed within the remaining 54" water main within Des Plaines Street at the east limit of abandoned and filled water main pipe.

The work by CDWM shall be undertaken no more than 21 days after the completion of filling work under this item. The Contractor shall refrain from all backfilling or restoration at the east limit or within Des Plaines Street until CDWM has completed their work or the Engineer notifies the Contractor that backfilling and restoration can begin.

Method of Measurement. The work under this item as described herein will not be measured separately. It will be paid for as lump sum.

Basis of Payment. This work will be paid at the contract unit price per lump sum for WATER MAIN ABANDON, FILL WITH CLSM which payment shall be full compensation for the work described herein and as directed by the Engineer. No separate payment will be made for debris removal and other efforts in order to complete required work under this item. Fence and gate removal will be paid for separately. All coordination with CDWM shall be included within this item, including maintaining excavations and pipe access within Des Plaines Street and along the east I-90/94 right-of-way.

No additional payment will be made for temporary lane or ramp closures required to perform work.

No additional payment will be made for remobilization efforts due to the sequence of work within Des Plaines Street to maintain access for CDWM and to complete bulkhead placement and all restoration.

DUCTILE IRON WATER MAIN, MECHANICAL JOINT 48"
DUCTILE IRON WATER MAIN, MECHANICAL JOINT 48" IN CASING

Description. This work will consist of the installation of water main and water main within steel casing pipe at the size specified, including all bends, fittings and all other appurtenances. All fittings, carrier pipe spacers and all other appurtenances for the installation within a casing pipe are included. Installation of the casing pipe is not included under this Item.

Water main shall be installed according to Article 561 of the "Standard Specifications" and in conformance with City of Chicago Department of Water Management Standards and Technical Specifications.

The Contractor is advised that the work will be performed on a potable water system owned and operated by the Chicago Department of Water Management (CDWM). As such, all operations shall be performed in such a way as to avoid contamination of the water system through the introduction of contaminants or the process of the work. All work will require the review and approval of the CDWM prior to the commencement of work operations.

The water main shutdown required to perform the Work will only be allowed based upon scheduling by CDWM. The Work must be substantially complete in order to place the water main back into service prior to the start-up date established in coordination with the CDWM. The construction schedule must clearly indicate when testing of the new water main items will be made and for the water main to be inspected by CDWM.

Testing and disinfecting as required by the City of Chicago Department of Water Management is included under this item.

Any temporary support or bracing of existing utilities must be coordinated with the affected utilities and is included under this item.

Any water main dewatering required during the installation of Inspection Tee, 48" X 24", shall be considered included as part of this item

Method of Measurement. This work will be paid for per each full installation of an inspection tee, 48" x 24", with all required restoration as shown in the Plans, per these special provisions and CDWM standards. All excavation required to install the tee and all backfill to complete the installation will be considered as part of the tee installation.

Basis of Payment. This work will be paid for at the contract unit price per each for INSPECTION TEE, 48" X 24" which price will be payment in full for all labor, equipment and materials necessary to complete the work as described.

MANHOLE, SPECIAL will be paid for separately.

TRENCH BACKFILL will be paid for separately.

Trench backfill will be paid for according to Article 208.04

CITY OF CHICAGO DEPARTMENT OF WATER MANAGEMENT ENGINEERING SERVICES

Description. This item shall consist of payment for work performed by the City of Chicago Department of Water Management (CDWM) related to engineering, valve operation and water quality services in support of this contract. These services include operations related to the shutting down and startup of the existing water mains, testing and inspection during the installation of the proposed water main relocations, water quality testing, field supervision, technical assistance, reviews and other required services. In addition, efforts by CDWM regarding the filling of the 54" northeast feeder water main to be abandoned to the east of I-90/94 will be paid for under this item.

General. It shall be the Contractor's responsibility to arrange and coordinate all required services by CDWM. All necessary field work, including valve operations, shall be scheduled with CDWM in advance of the time period required. All work to be performed by CDWM is subject to CDWM work schedules and availability. Acceptance of complete water main by CDWM is based upon CDWM review of installation, presence during testing and disinfection operations and other roles as desired by CDWM and required in these special provisions.

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Construction Requirements. The Contractor shall make the following submittals and notifications for the water facility work included in this contract:

- Submit a complete list of the shop drawings (submittals) for all water main materials to be used to complete this water main installation at least 60 days prior to starting the work. Once the list is approved, the shop drawings (submittals) shall be sent to Brian McGahan at Brian.McGahan@ctrwater.net for review.
- It is required that the Force Account Construction Manager be contacted at FACM@ctrwater.net two weeks prior to the anticipated construction date so a resident engineer can be assigned to the project.
- Obtain a "B-Permit" prior to construction from the City of Chicago, Department of Buildings, Plumbing Permit and Plan Section, City Hall, 121 North LaSalle Street, Room 906, Chicago, Illinois, 60602.
- Submit as-built drawings within two (2) weeks of completion of the work. The as-built drawings should be submitted to the Department of Water Management, Bureau of Engineering Services, Jardine Water Purification Plant, 1000 E. Ohio Street, Room 306, Chicago, Illinois 60611, attention to Rolando Villalon.

Failure to comply with these requirements may result in additional expenses to the project to verify that all work conforms to the CDWM's standards.

Method of Payment. The Contractor will make payments to CDWM based upon the following schedule agreed to with CDWM:

- 80% of the initial estimate of costs required by CDWM. A certified check in the amount of $93,296.00, payable to the City of Chicago, must be hand delivered to the Department of Buildings, Plumbing Permit and Plan Section, Room 906, 121 North LaSalle Street, Chicago, Illinois 60602, with a copy of this letter.

- This payment shall be made to CDWM within ten (10) days of contract award using certified check. The receipt is to be provided to the Engineer for records.

- The initial estimated cost of services is an assumption subject to the receipt of the actual final costs submitted from CDWM upon completion of their work. The initial assumption identified above is for bidding purposes only.

CDWM will invoice the final amount based upon labor, material, equipment, overhead charges and other costs actually incurred.

The Contractor will be reimbursed based upon the requirements identified in Section 109.05, including administrative costs. The Contractor shall secure invoices from CDWM for work performed by CDWM. These invoices shall be submitted as documentation to the Department prior to or with any Contractor payment request for the remaining balance at the completion of work related to CDWM facilities.

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For bidding purposes, this item shall be estimated as $118,186.20, which includes the estimated cost from CDWM with additional administrative costs per Section 109.05.

Basis of Payment. This work will be paid for at the contract lump sum price for CITY OF CHICAGO DEPARTMENT OF WATER MANAGEMENT ENGINEERING SERVICES which shall be reimbursement in full, and with administrative costs as described in Section 109.05, for services provided by CDWM.

EXPOSE AND PROTECT EXISTING UTILITIES

Description. This item shall consist of excavation to expose existing utilities, including concrete encased ductbanks, buried conduits and direct buried cables, and subsequent protection of the located facilities during adjacent heavy construction, including retaining wall construction. The work is specifically focused on University of Illinois at Chicago (UIC) owned/operated facilities adjacent to the UIC Student Recreation Facility. Work to expose the existing facilities shall be undertaken as soon as possible after the start of construction to confirm the location of the facilities. There is no exposure or protection of utilities under this item, including roadway and tennis court lighting, for items shown to be removed.

All Work under this item shall conform to Articles 105.07 and 107.39. Executing Work under this item does not eliminate the requirements of the Standard Specifications, including Articles 105.07 and 107.39, concerning all other proposed improvements within the vicinity of utilities.

Existing Information. Existing known utilities identified by the SUE contractor are identified in SUE sheets within the Plans as well as in Drainage and Utility plan sheets within the Plans. Additional information related to test holes performed at various locations are also identified, including in the retaining wall plans. Proposed improvements have been designed considering the locations identified by the SUE contractor, specifically seven test holes that exposed at least the east portion of the concrete encased ductbank.

Existing UIC ductbanks are assumed to be approximately 40” wide by 18” deep with an assumed cover of 30”. Variations, including concrete overpour, should be anticipated. Based upon two test holes, a buried cable is located above the ductbank, resting on top of the concrete.

Submittals. The Contractor shall submit proposed plans and procedures as described below.

Construction Requirements – Expose Existing Utilities. The Contractor shall submit an excavation plan for approval by the Engineer prior to the start of any pavement removal in the UIC access road or other locations. The excavation plan shall identify limits of the excavation in order to confirm that access along the UIC access road will be maintained during the excavation work and after the excavation work is complete. The excavation shall be complete enough to identify the horizontal and vertical position of the identified ductbank or buried utilities, including any cables placed on top of concrete encased ductbanks. No additional payment for soil retention will be made.

After the horizontal and vertical position of existing facilities have been identified, including the top and bottom of existing ductbanks, the Contractor shall prepare a report detailing the findings for submittal to the Engineer. This report will be used to evaluate the exact location of the existing facilities in relation to proposed improvements to confirm that the proposed design of the retaining wall and offsets are sufficient.

The horizontal and vertical position data shall be submitted and accepted by the Engineer a minimum of ninety (90) days prior to any excavation for SN 016-1729, including drilled shafts and excavation to perform drilled shaft construction, between stations 7313+95.86 and the south end of the drilled shaft portion of the wall at 7316+31.15.

Construction Requirements – Protect Existing Utilities. After successfully exposing and locating the existing utility elements, the Contractor shall submit a utility protection plan for approval by the Engineer. The utility protection plan shall consider the protection of the utility infrastructure throughout the remaining contract duration, including after excavation, during drilled shaft and other retaining wall proposed improvements, combined sewer installation, drainage improvements along the UIC access road and pavement improvements within the UIC access road area. Specific focus shall consider the Contractor's means and methods during retaining wall improvements, including, but not limited to, proposed vehicles and equipment, material storage, construction sequencing and procedures and other pertinent information in order to identify that the existing utilities shall remain physically undisturbed until the completion of all proposed improvements. The protection design is anticipated to vary based upon the proximity of construction to the utilities as well as the available staging area located on the opposite side of the proposed work from the utilities. Protection elements such as plating, matting, tie-up beams, anchors and supports or other appropriate methods should be considered.

All submittals shall be sealed by an Illinois Licensed Structural Engineer and shall include all details, dimensions, quantities and cross sections necessary to construct the protection systems(s) and consider all anticipated temporary loads within the vicinity of the ductbank. No adjacent construction shall begin prior to the approval of the utility protection system(s).

At the completion of all adjacent construction, including, but not limited to, proposed retaining wall elements, the utility protection system(s) shall be disassembled and removed, with all components retained by or disposed of properly by the Contractor. Portions of protection systems may remain in place if damage to utilities may occur and plans to maintain components in place are approved by the Engineer. Any additional backfill to bring the area of the ductbank to proposed subgrades shall be considered included within this item.

Repairs to Existing Ductbank. All damage to the existing ductbank deemed by the Engineer to have been caused during contractor operations shall be repaired by the Contractor at no additional cost. All repairs shall meet typical concrete encased ductbank standards and the satisfaction of the ductbank owner, as coordinated by the Engineer.

Method of Measurement. EXPOSE AND PROTECT EXISTING UTILTIES will be measured in place in feet along the centerline of the exposed utility. No additional measurement of pavement or curb and gutter removal, earth excavation or other removal items shall be made under this item and shall be considered under separate pay items. No separate measurement of the various components of the proposed and approved protection concepts will be made. The utility protection components may not necessarily be installed for the entire length of the exposed utilities.

Basis of Payment. This work will be paid for at the contract unit price per foot for EXPOSE AND PROTECT EXISTING UTILITES and include the installation, maintenance and removal of all protection system components and backfilling to existing or proposed subgrade. All restoration is included under separate items for the proposed UIC access road area as shown in the Plans.

Revised 7/26/17

TEMPORARY MAST ARM, ALUMINUM, 15FT

Description. This item shall consist of furnishing and installing a temporary mast arm on the wood pole as shown on the plans and as directed by the Engineer.

Materials. Materials shall be according to the following Articles of Section 1000 - Materials

Item	Article/Section
(a) Mast Arm	1069.02(a)

CONSTRUCTION REQUIREMENTS

Installation. Installation shall be as described in Article 830.03(c). The Contractor shall provide all the necessary hardware and accessories required to mount the mast arm(s) on the wood pole as indicated on the plans.

The mast arm shall remain the property of the Contractor and shall be removed when directed by the Engineer.

Method Of Measurement. Temporary aluminum mast arms shall be counted as, each installed.

Basis Of Payment. This item shall be paid at the contract unit price each for TEMPORARY MAST ARM, ALUMINUM, of the mast arm type, quantity and length indicated.

REMOVAL OF POLE FOUNDATION

Revise the first paragraph of Article 842.04 of the Standard Specifications to read:

Removal of Pole Foundations. Concrete foundations shall be removed completely, with removed material disposed of according to Article 202.03. Underground conduits and cables shall be separated from the foundation and shall be abandoned, removed and disposed of or reused as indicated on the plans.

Add the following to Article 842.04 of the Standard Specifications:

“Prior to removing the existing UIC concrete foundations, the Contractor shall take all the necessary field measurements to determine the existing foundations’ diameter, height above finished grade, anchor bolt protrusion above the foundation and bolt circle diameter. When the existing foundations are removed, the Contractor shall take field measurements to determine the depth of each foundation. The Contractor is responsible for determining the new anchor bolts’ diameter, bolt circle diameter and length in the field and as recommended by the existing light pole manufacturer.”

Sewer monitoring required within SEWER SETTLEMENT MONITORING will not be paid for separately, and will be included in the unit cost of this item.

Revised 7/26/17

APPENDIX A- STORM WATER POLLUTION PREVENTION PLAN

Illinois Department of Transportation

Storm Water Pollution Prevention Plan

Route	Marked Route	Section
FAI 90/94/290	Jane Byrne Interchange	2015-022-I
Project Number	**County**	**Contract Number**
C-91-308-15	Cook	62A74

This plan has been prepared to comply with the provisions of the National Pollutant Discharge Elimination System (NPDES) Permit No. ILR10 (Permit ILR10), issues by the Illinois Environmental Protection Agency (IEPA) for storm water discharges from construction site activities.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Print Name	Title	Agency
Anthony Quigley, P.E.	Region 1 Engineer	Illinois Dept. of Transportation
Signature		**Date**
Anthony Quigley		3-3-17

I. Site Description

A. Provide a description of the project location (include latitude and longitude):

The project is located along the infield area of Ramp East to South (ES) and access road by the University of Illinois at Chicago (UIC) Student Recreation Facility beginning south of the Harrison Street Bridge and ending west of Polk Street in Chicago, Cook County, Illinois. The latitude is 41 52' 32" N and the longitude is 87 39' 6" W. Section 16, Township 39N, Range 14E.

The design, installation, and maintenance of BMPs at these locations are within an area where annual erosivity (R value) is less than or equal to 160. Erosivity is less than 5 in all two-week periods between October 12 and April 15, which would qualify for a construction rainfall erosivity waiver under the US Construction General Permit requirements. At these locations, erosivity is highest in spring to autumn, April 16 - October 11.

B. Provide a description of the construction activity which is subject of this plan:

The project will be completed in 1 stage. The project includes the removal and replacement of the southwest water main feeder to the Cermak Pumping Station, 60" combined sewer and light poles. In addition, a proposed retaining wall (SN 016-1729) and noise wall will also be constructed. Where the existing retaining wall footing is in conflict with the proposed retaining wall, the substructure will be removed as necessary as shown in the Plans. The infield area along Ramp ES will be regraded with roadside swales to accommodate the improvements. Additional drainage improvements will include draining the infield area and the underdrains of the retaining wall. All of the water main feeding the Cermak Pumping Station will be lined with the exception of the NE feeder main being abandoned. The project will be permanently stabilized by Stage with Class 2A seed. The project also includes the installation, maintenance, and removal of ESC measures.

C. Provide the estimated duration of this project:

The estimated duration of this project will be 13 months.

APPENDIX B - CHICAGO DEPARTMENT OF WATER MANAGEMENT (CDWM) TECHNICAL SPECIFICATIONS FOR WATER MAIN CONSTRUCTION

This specification amends the Chicago Department of Water Management (CDWM) Technical Specifications for Water Main Construction included in Appendix B and shall be construed to be a part thereof, superseding any conflicting provisions thereof applicable to the work under the Contract:

1. Revise all references to the Commissioner to the Engineer.

2. Section 33 05 21 – Utility Pipe Jacking
   a) Delete Article 1.3.
   b) Modify Article 2.1 to "Casing pipe must be steel pipe as specified herein or approved by the Engineer.
   c) Delete Article 2.3.
   d) Modify Article 3.1 B to delete "and as specified in Section 31 23 10 Excavation, Trenching and Backfilling".
   e) Modify Article 3.1 C to delete "as specified in Section 03 30 00 Cast-In-Place Concrete".
   f) Delete Article 3.2.
   g) Modify Article 3.5 A to delete "per the requirements of Section 01 55 26 Traffic Control and Regulations".

3. Section 33 11 13 – Ductile Iron Water Pipe and Fittings
   a) Delete Articles 1.2 A, B, C.
   b) Delete Article 1.4 A.
   c) Modify Article 1.6 E to "All existing valves must be operated only by personnel of the Department of Water Management. Notify the Department of Water Management seventy-two (72) hours prior to the need for operation of the valve."
   d) Modify Article 2.2 B to "Pipe joints must be restrained joints as noted on the Drawings, specified here, or as directed by the Engineer."
   e) Delete Article 2.2 E and replace with Article 2.2 E – Thrust Collars, 1. Provide thrust collars on pipes as shown on the Contract Drawings. 2. Thrust collar size shown on the Contract Drawings is a minimum required size and the pipe manufacturer shall increase the size as required to resist the required thrust load at no additional cost to the Project. 3. Provide calculations for the thrust collar design performed by direct staff of the Supplier and stamped by Illinois Licensed Structural Engineer.
   f) Delete Article 2.4 C.
   g) Delete Article 2.7.
   h) Modify Article 3.4 B to delete "specified in Section 33 11 15 – Thrust Restraint,".
   i) Modify Article 3.4 C to delete "as per Section 33 23 19 Dewatering Excavations".
   j) Modify Article 3.4 D to delete "in accordance with Section 31 23 10 Excavation, Trenching and Backfilling".
   k) Delete Article 3.5.
   l) Delete Article 3.7.
   m) Modify Article 3.13 to delete "CLSM flowable material must meet standards specified in Section 31 23 10, "Excavation, Trenching and Backfilling", paragraph 2.3, C of these specifications."

APPENDIX C - STEEL PIPE AND FITTINGS

SECTION 40 23 19

STEEL PIPE AND FITTINGS

Part 1 General

1.01 Description

Scope of Work: Provide and install steel pipe and fittings of the sizes and in the locations shown on the drawings and as specified herein.

1.02 Quality Assurance

The references identified herein are intended to refer to the current published version of the document that is available at the time the project is released for bid.

A. References:

ANSI/AWWA	C200	Steel Water Pipe, 6 Inches and Larger
ANSI/AWWA	C206	Field Welding of Steel Water Pipe
ANSI/AWWA	C208	Dimensions for Fabricated Steel Water Pipe Fittings
ANSI/AWWA	C210	Liquid-Epoxy Coating Systems for the Interior and Exterior of Steel Water Pipelines
ANSI/AWWA	C227	Bolted, Split-Sleeve Restrained and Nonrestrained Couplings for Plain-End Pipe
ANSI/AWWA	C604	Installation of Buried Steel Water Pipe – 4 in. (100 mm) and Larger
AWWA	M11	Steel Pipe - A guide for Design and Installation.
ASTM	A36	Specification for Carbon Structural Steel
ASTM	A139	Specification for Electric-Fusion (Arc)-Welded Steel Pipe (NPS 4 and Over)
ASTM	E165	Method for Liquid Penetrant Examination
ASTM	E709	Guide for Magnetic Particle Examination
ASME	Section V	Nondestructive Testing Examination
ASME	Section VIII	Rules for Construction of Pressure Vessels – Division 1
ASME	Section IX	Welding and Brazing Qualifications

SEWER SETTLEMENT MONITORING

Description. This work shall consist of monitoring portions of the proposed 60" combined sewer for settlement after installation. Portions of the sewer that are installed prior to major work for Retaining Wall 10, including, but not limited to, drilled shaft construction, excavation and excavation for and placement of retaining wall caps and parapets shall be monitored for settlement throughout the remainder of the Contract.

General Requirements. Proposed 60" combined sewer installed north of the UIC Access Road (north of approximately Sta. 604+90) prior to the completion of adjacent portions of Retaining Wall 10, shall be monitored for settlement through the remainder of the Contract or until directed to stop monitoring by the Engineer. If all proposed 60" combined sewer will be installed after the retaining wall is completed, no settlement monitoring will be required unless otherwise directed by the Engineer. Any areas where the east edge of the proposed 60" combined sewer is offset greater than 24' from the outside of the proposed drilled shafts may be omitted with Engineer approval.

Sewer settlement monitoring shall occur at intervals no greater than 100 feet apart and include both the north and south limits of the combined sewer. The Contractor is required to set a monitoring point at the location of minimum offset between the east edge of the proposed 60" combined sewer and the outside of the proposed drilled shafts.

All monitoring locations shall be installed a minimum of one (1) week prior to the start of any work on the retaining wall within 50 feet of any monitoring location.

Submittals. The Contractor must submit a Sewer Settlement Monitoring plan to the Engineer for approval. The Plan must be approved prior to the start of 60" combined sewer work. The plan must include, but is not limited to the following:

- Intended monitoring techniques
- Locations of all monitoring points
- Monitoring point protection plan
- Shop drawings and product data for all materials and instruments
- Monitoring point installation plan, procedures and equipment
- Calibration reports for all survey instrumentation (reports shall be updated during construction to be no greater than 180 days old while instrumentation is in use)
- Procedure and outline for how the data will be provided to the Engineer
- Monitoring location abandonment plan
- Other pertinent data or procedures that the Contractor will use or employ

Added 7/26/17

Monitoring Requirements. The Contractor shall monitor settlement monitoring points on a daily basis during any drilled shaft construction or excavation in front of completed drilled shafts for the retaining wall within the area between Harrison Street and the UIC Access Road. After drilled shafts and excavation in front of drilled shafts has been completed, monitoring shall be performed on a weekly basis, regardless if retaining wall improvements have actively been worked on until all portions of the retaining wall parapet are installed. After parapet completion, monitoring shall be on a monthly basis until construction is complete or as directed by the Engineer.

After initial monitoring locations have been installed and accepted, the baseline value (x,y,z coordinates) shall be recorded in logs and identified at each monitoring location. The following values are considered offsets from the baseline values. Vertical displacement shall be considered the difference between the measured elevation and the baseline elevation. Horizontal displacement shall be considered the arithmetic difference between the measured x,y coordinate and the baseline x,y coordinate.

- Threshold Value – 1/8 inches vertical
- Response Value – 3/16 inches vertical
- Shutdown Value – 1/4 inches vertical

When measurements indicate that the Threshold Value has been reached, the Engineer shall be notified. After reconfirming measurements that led to reaching the Threshold Value, the Contractor shall provide a review of the activities that transpired prior to the Threshold Value being reached. Contractor means and methods shall be reviewed to determine what changes, if any, shall be made to better control movement that may contribute to the displacement reading. Monitoring readings shall be made daily for five (5) consecutive days after the Threshold Value was reached, regardless of daily construction activities.

When measurements indicate that the Response Value has been reached, the Engineer shall be notified. After reconfirming measurements that led to reaching the Response Value, the Contractor shall provide a review of the activities that transpired prior to the Response Value being reached. The Contractor shall provide a plan to actively control ground movements and any other contributing factors to the Response Value being reached. Monitoring readings shall be made daily for five (5) consecutive days after the Response Value was reached, regardless of daily construction activities, or until measurement values below the Threshold Value are observed.

When measurements indicate that the Shutdown Value has been reached, the Engineer shall be notified and all work within 150 feet from the monitoring point that recorded the Shutdown Value must be stopped immediately. After reconfirming measurements that led to reaching the Shutdown Value, the upstream and downstream monitoring location measurements shall be reconfirmed. If in the Engineer's judgement, the Shutdown Value was determined to be due to an anomaly, work may resume with monitoring at the monitoring location in question occurring every hour. If the Engineer determines that the Shutdown Value was reached due to a settlement/deflection incident, all work north of the UIC access road shall be stopped immediately. The Contractor shall meet with the Engineer to develop a plan of action before work can resume.

Added 7/26/17

Completion. At the completion of monitoring activities, the Contractor shall abandon all monitoring locations to the satisfaction of the Engineer and in accordance with the approved plan for abandonment.

Method of Measurement. The work under this item will not be measured separately.

Basis of Payment. This work will not be paid for directly, but shall be considered as included in the various combined sewer pay items identified to include sewer settlement monitoring.

TEMPORARY CHAIN LINK FENCE

Description. This work shall consist of furnishing, installing temporary chain link fence and gates behind proposed Retaining Wall 10 at the exposed drilled shaft section in order to secure the area where there is a gap in the parapet wall. The fence and gates are to be installed at the location as specified on the plans, or as directed by the Engineer. Work under this item shall be performed according to section 664 of the IDOT Standard Specifications for Road and Bridge Construction, except as herein modified. The fence will remain in place and will be removed by others under a future contract.

General Requirements. The Temporary Chain Link Fence shall be at least 8 feet in height. The stand shall be made of galvanized steel pipe or similar materials. Each fence panel shall be made from welded wire panels or out of chain link fence materials. All the necessary bases, panel clamps and bolts shall be included and installed in accordance to the manufacturer specifications and to the satisfaction of the Engineer.

Due to the fall potential, there shall be no more than a two (2) inch gap between the last fence post of the Temporary Chain Link Fence and the corners of the parapet wall, without the ability to move the fence. A temporary base will not be allowed adjacent to the parapet and posts shall not be set in concrete. The Contractor shall propose methods to anchor the fence and fence posts to the retaining wall parapet wall on concrete surfaces along the joint faces that will be covered by the future parapet and concrete cap completion. All proposed connection details, materials and methods shall be approved by the Engineer prior to installation.

The Temporary Chain Link Fence at the proposed Retaining Wall 10 area shall utilize opaque fabric meshing affixed to the chain link fence face. The fabric meshing shall allow passage of air but shall contain dust and dirt. The mesh fabric shall be the full height of the fence and cover the entire length of the fence including any gated opening. The fabric meshing and fence shall not contain any advertisement. The color of the fabric shall be approved by the Engineer.

Method of Measurement. Temporary Chain Link Fence shall be measured for payment in feet, along the top of the fence from center to center of end posts, including the length occupied by gates.

Basis of Payment. Temporary Chain Link Fence will be paid for at the contract unit price per foot for TEMPORARY CHAIN LINK FENCE for which said price shall include all labor, materials, equipment, furnishing, installing, maintaining and incidentals necessary for placement of the temporary chain link fence and gates.

Added 7/26/17