155

Letting January 21, 2022

Notice to Bidders, Specifications and Proposal

Illinois Department of Transportation

Contract No. 87763
DEKALB County
Section 20-00046-00-FP (Sandwich)
Route FAU 5414 (Latham Street)
Project 5B33-714 ()
District 3 Construction Funds

Prepared by	F
Checked by	

(Printed by authority of the State of Illinois)

Illinois Department of Transportation

NOTICE TO BIDDERS

1. **TIME AND PLACE OF OPENING BIDS.** Electronic bids are to be submitted to the electronic bidding system (iCX-Integrated Contractors Exchange). All bids must be submitted to the iCX system prior to 12:00 p.m. January 21, 2022 at which time the bids will be publicly opened from the iCX SecureVault.

2. **DESCRIPTION OF WORK**. The proposed improvement is identified and advertised for bids in the Invitation for Bids as:

   Contract No. 87763
   DEKALB County
   Section 20-00046-00-FP (Sandwich)
   Project 5B33-714 ()
   Route FAU 5414 (Latham Street)
   District 3 Construction Funds

Full depth pavement reclamation, HMA pavement, curb & gutter, sidewalks, storm sewer, water main construction and pavement markings on Latham Street from Center Street to Sandhurst Drive in Sandwich.

3. **INSTRUCTIONS TO BIDDERS**. (a) This Notice, the invitation for bids, proposal and letter of award shall, together with all other documents in accordance with Article 101.09 of the Standard Specifications for Road and Bridge Construction, become part of the contract. Bidders are cautioned to read and examine carefully all documents, to make all required inspections, and to inquire or seek explanation of the same prior to submission of a bid.

   (b) State law, and, if the work is to be paid wholly or in part with Federal-aid funds, Federal law requires the bidder to make various certifications as a part of the proposal and contract. By execution and submission of the proposal, the bidder makes the certification contained therein. A false or fraudulent certification shall, in addition to all other remedies provided by law, be a breach of contract and may result in termination of the contract.

4. **AWARD CRITERIA AND REJECTION OF BIDS**. This contract will be awarded to the lowest responsive and responsible bidder considering conformity with the terms and conditions established by the Department in the rules, Invitation for Bids and contract documents. The issuance of plans and proposal forms for bidding based upon a prequalification rating shall not be the sole determinant of responsibility. The Department reserves the right to determine responsibility at the time of award, to reject any or all proposals, to re-advertise the proposed improvement, and to waive technicalities.

By Order of the
Illinois Department of Transportation

Omer Osman,
Acting Secretary

CONTRACT 87763

INDEX
FOR
SUPPLEMENTAL SPECIFICATIONS
AND RECURRING SPECIAL PROVISIONS

Adopted January 1, 2022

This index contains a listing of SUPPLEMENTAL SPECIFICATIONS, frequently used RECURRING SPECIAL PROVISIONS, and LOCAL ROADS AND STREETS RECURRING SPECIAL PROVISIONS.

No ERRATA this year.

SUPPLEMENTAL SPECIFICATIONS

RECURRING SPECIAL PROVISIONS

The following RECURRING SPECIAL PROVISIONS indicated by an "X" are applicable to this contract and are included by reference:

LOCAL ROADS AND STREETS RECURRING SPECIAL PROVISIONS

Table of Contents

TABLE OF CONTENTS

BDE SPECIAL PROVISIONS

The following special provisions indicated by an "X" are applicable to this contract. An * indicates a new or revised special provision for the letting.

	File Name	Pg.		Special Provision Title	Effective	Revised
*	80099			Accessible Pedestrian Signals (APS)	April 1, 2003	Jan. 1, 2022
	80274			Aggregate Subgrade Improvement	April 1, 2012	April 1, 2016
	80192			Automated Flagger Assistance Device	Jan. 1, 2008	
	80173			Bituminous Materials Cost Adjustments	Nov. 2, 2006	Aug. 1, 2017
*	80246			Bituminous Surface Treatment with Fog Seal	Jan. 1, 2020	Jan. 1, 2022
	80436	91	X	Blended Finely Divided Minerals	April 1, 2021	
	80241			Bridge Demolition Debris	July 1, 2009	
	5026I			Building Removal-Case I (Non-Friable and Friable Asbestos)	Sept. 1, 1990	April 1, 2010
	5048I			Building Removal-Case II (Non-Friable Asbestos)	Sept. 1, 1990	April 1, 2010
	5049I			Building Removal-Case III (Friable Asbestos)	Sept. 1, 1990	April 1, 2010
	5053I			Building Removal-Case IV (No Asbestos)	Sept. 1, 1990	April 1, 2010
	80384	92	X	Compensable Delay Costs	June 2, 2017	April 1, 2019
	80198			Completion Date (via calendar days)	April 1, 2008	
	80199			Completion Date (via calendar days) Plus Working Days	April 1, 2008	
	80293			Concrete Box Culverts with Skews > 30 Degrees and Design Fills ≤ 5 Feet	April 1, 2012	July 1, 2016
	80311			Concrete End Sections for Pipe Culverts	Jan. 1, 2013	April 1, 2016
	80261			Construction Air Quality – Diesel Retrofit	June 1, 2010	Nov. 1, 2014
	80434	96	X	Corrugated Plastic Pipe (Culvert and Storm Sewer)	Jan. 1, 2021	
	80029	108	X	Disadvantaged Business Enterprise Participation	Sept. 1, 2000	Mar. 2, 2019
	80229			Fuel Cost Adjustment	April 1, 2009	Aug. 1, 2017
*	80433			Green Preformed Thermoplastic Pavement Markings	Jan. 1, 2021	Jan. 1, 2022
*	80422			High Tension Cable Median Barrier	Jan. 1, 2020	Jan. 1, 2022
*	80442	118	X	Hot-Mix Asphalt – Start of Production	Jan. 1, 2022	
*	80438			Illinois Works Apprenticeship Initiative – State Funded Contracts	June 2, 2021	Sept. 2, 2021
*	80411			Luminaires, LED	April 1, 2019	Jan. 1, 2022
*	80045			Material Transfer Device	June 15, 1999	Jan. 1, 2022
	80418			Mechanically Stabilized Earth Retaining Walls	Nov. 1, 2019	Nov. 1, 2020
*	80441			Performance Graded Asphalt Binder	Jan. 1, 2022	
	80430	119	X	Portland Cement Concrete – Haul Time	July 1, 2020	
*	3426I			Railroad Protective Liability Insurance	Dec. 1, 1986	Jan. 1, 2022
	80395			Sloped Metal End Section for Pipe Culverts	Jan. 1, 2018	
*	80340			Speed Display Trailer	April 2, 2014	Jan. 1, 2022
*	80127			Steel Cost Adjustment	April 2, 2014	Jan. 1, 2022
	80397	120	X	Subcontractor and DBE Payment Reporting	April 2, 2018	
	80391	121	X	Subcontractor Mobilization Payments	Nov. 2, 2017	April 1, 2019
	80437			Submission of Payroll Records	April 1, 2021	
*	80435	122	X	Surface Testing of Pavements – IRI	Jan. 1, 2021	Jan. 1, 2022
	80410			Traffic Spotters	Jan. 1, 2019	
*	20338			Training Special Provisions	Oct. 15, 1975	Sept. 2, 2021
	80318			Traversable Pipe Grate for Concrete End Sections	Jan. 1, 2013	Jan. 1, 2018
*	80429			Ultra-Thin Bonded Wearing Course	April 1, 2020	Jan. 1, 2022
	80439	128	X	Vehicle and Equipment Warning Lights	Nov. 1, 2021	
	80440			Waterproofing Membrane System	Nov. 1, 2021	
	80302	129	X	Weekly DBE Trucking Reports	June 2, 2012	Nov. 1, 2021
	80427	130	X	Work Zone Traffic Control Devices	Mar. 2, 2020	
	80071			Working Days	Jan. 1, 2002	

The following special provisions are in the 2021 Supplemental Specifications and Recurring Special Provisions.

File Name	Special Provision Title	New Location(s)	Effective	Revised
80425	Cape Seal	Sections 405, 1003	Jan. 1, 2020	Jan. 1, 2021
80387	Contrast Preformed Pavement Marking	Articles 780.08, 1095.03	Nov. 1, 2017	
80402	Disposal Fees	Article 109.04(b)	Nov. 1, 2018	
80378	Dowel Bar Inserter	Articles 420.03, 420.05, 1103.20	Jan. 1, 2017	Jan. 1, 2018
80421	Electric Service Installation	Articles 804.04, 804.05	Jan. 1. 2020	
80415	Emulsified Asphalts	Article 1032.06	Aug. 1, 2019	
80423	Engineer's Field Office and Laboratory	Section 670	Jan. 1, 2020	
80417	Geotechnical Fabric for Pipe Underdrains and French Drains	Articles 1080.01(a), 1080.05	Nov. 1, 2019	
80420	Geotextile Retaining Walls	Article 1080.06(d)	Nov. 1, 2019	
80304	Grooving for Recessed Pavement Markings	Articles 780.05, 780.14, 780.15	Nov. 1, 2012	Nov. 1, 2020
80416	Hot-Mix Asphalt – Binder and Surface Course	Sections 406, 1003, 1004, 1030, 1101	July 2, 2019	Nov. 1, 2019
80398	Hot-Mix Asphalt – Longitudinal Joint Sealant	Sections 406, 1032	Aug. 1, 2018	Nov. 1, 2019
80406	Hot-Mix Asphalt – Mixture Design Verification and Production (Modified for I-FIT)	Sections 406, 1030	Jan. 1, 2019	Jan. 2, 2021
80347	Hot-Mix Asphalt – Pay for Performance Using Percent Within Limits – Jobsite Sampling	Sections 406, 1030	Nov. 1, 2014	July 2, 2019
80383	Hot-Mix Asphalt – Quality Control for Performance	Sections 406, 1030	April 1, 2017	July 2, 2019
80393	Manholes, Valve Vaults, and Flat Slab Tops	Articles 602.02, 1042.10	Jan. 1, 2018	Mar. 1, 2019
80424	Micro-Surfacing and Slurry Sealing	Sections 404, 1003	Jan. 1, 2020	Jan. 1, 2021
80428	Mobilization	Article 671.02	April 1, 2020	
80412	Obstruction Warning Luminaires, LED	Sections 801, 822, 1067	Aug. 1, 2019	
80359	Portland Cement Concrete Bridge Deck Curing	Articles 1020.13, 1022.03	April 1, 2015	Nov. 1, 2019
80431	Portland Cement Concrete Pavement Patching	Articles 701.17(e)(3)b, 1001.01(d), 1020.05(b)(5)	July 1, 2020	
80432	Portland Cement Concrete Pavement Placement	Article 420.07	July 1, 2020	
80300	Preformed Plastic Pavement Marking Type D - Inlaid	Articles 780.08, 1095.03	April 1, 2012	April 1, 2016
80157	Railroad Protective Liability Insurance (5 and 10)	Article 107.11	Jan. 1, 2006	
80306	Reclaimed Asphalt Pavement (RAP) and Reclaimed Asphalt Shingles (RAS)	Section 1031	Nov. 1, 2012	Jan. 2, 2021
80407	Removal and Disposal of Regulated Substances	Section 669	Jan. 1, 2019	Jan. 1, 2020
80419	Silt Fence, Inlet Filters, Ground Stabilization and Riprap Filter Fabric	Articles 280.02, 280.04, 1080.02, 1080.03, 1081.15	Nov. 1, 2019	July 1, 2021
80408	Steel Plate Beam Guardrail Manufacturing	Article 1006.25	Jan. 1, 2019	
80413	Structural Timber	Article 1007.03	Aug. 1, 2019	
80298	Temporary Pavement Marking	Section 703, Article 1095.06	April 1, 2012	April 1, 2017
80409	Traffic Control Devices – Cones	Article 701.15(a), 1106.02(b)	Jan. 1, 2019	
80288	Warm Mix Asphalt	Sections 406, 1030, 1102	Jan. 1, 2012	April 1, 2016
80414	Wood Fence Sight Screen	Article 641.02	Aug. 1, 2019	April 1, 2020

STATE OF ILLINOIS

SPECIAL PROVISIONS

The following Special Provisions supplement the "Standard Specifications for Road and Bridge Construction, Adopted January 1, 2022", the latest edition of the "Manual on Uniform Traffic Control Devices for Streets and Highways", and the "Manual of Test Procedures for Materials" in effect on the date of invitation for bids, and the "Supplemental Specifications and Recurring Special Provisions" indicated on the Check Sheet included herein, which apply to and govern the construction of F.A.U. Route 5414 (Latham Street), Section 20-00046-00-FP, in Dekalb County, and in case of conflict with any part, or parts, of said Specifications, the said Special Provisions shall take precedence and shall govern.

Contract No. 87763

LOCATION OF PROJECT

Improvements are proposed on Latham Street between Center Street and just north of Sandhurst Drive within the City of Sandwich, IL.

DESCRIPTION OF PROJECT

The project consists of earth excavation, pavement pulverization, full depth pavement reclamation, preparation of subbase, soil modification, HMA pavement courses, curb and sidewalk removal & replacement, HMA and PCC driveway removal & replacement, sewer construction, water main construction, restoration, and the necessary appurtenant construction.

LOCAL WASTE COLLECTION SERVICES

The Contractor shall coordinate the various waste collection companies servicing the sandwich area within the project limits if there is a potential interruption of waste collection services. The various waste collection companies servicing Sandwich, IL include:

Community Disposal……815-786-7151
Groot Industries……630-587-4673
Waste Management…….800-747-2278

This work will not be paid for separately but will be included in the cost of the various pay items associated with the improvements.

BRUSH COLLECTION SERVICES

The Contractor shall coordinate activities with the City if there is a potential interruption of brush collection services. Brush collection is scheduled on Latham Street the third and fourth Monday of each month. This work will not be paid for separately but will be included in the cost of the various pay items associated with the improvements.

SCHOOL TRANSPORTATION SERVICES

The Contractor shall coordinate activities with Sandwich School District 430 if there is a potential interruption of student transportation services. The District should be notified 48-hours in advance of interruptions at (815) 786-2187. The Contractor shall make all necessary accommodations for special needs students that typically get picked up at their residence. This work will not be paid for separately but will be included in the cost of the various pay items associated with the improvements.

CONSTRUCTION NOISE

Revise the second paragraph of Article 107.35 of the Standard Specifications to read:

Construction within 1000 feet of an occupied residence, motel, hospital, or similar receptor shall be confined to the period beginning at 7:00 a.m. and ending at 8:00 p.m. Monday through Friday and from 7:00 a.m. to 5:00 p.m. on Saturday. No work of any kind shall be done on Sundays. These time restrictions shall not apply to maintenance or operation of safety and traffic-control devices such as barricades, signs, and lighting, or to construction of an emergency nature. However, starting up of equipment does apply.

WINTER SHUTDOWN

The following provisions shall apply for winter shutdown.

The Contractor shall be responsible for stabilizing all disturbed areas in accordance with regulations found in the Illinois Urban Manual and to the satisfaction of Engineer. All items for temporary stabilization shall remain in place and shall be maintained by the Contractor for the duration of winter shutdown. All temporary stockpiles shall be removed from the site.

The Contractor shall take responsibility for streets that are not 100% complete prior to winter shutdown. Therefore, damage to items cause by snow removal operations or other winter conditions as determined by the Engineer shall be removed and replaced according to the Engineer.

The cost of all labor, materials, and equipment required under this special provision regarding winter shutdown shall be the responsibility of the Contractor and is not eligible for payment by the City.

FIRE HYDRANTS

Revise the first paragraph of Article 107.18 of the Standard Specifications to read:

The use of fire hydrants by the Contractor shall not be permitted. If water is needed, the Contractor shall make application to the proper authorities, and shall conform to the municipal ordinances, rules, or regulations concerning their use.

WORKSITE MAINTENANCE AND CLEANUP

The Contractor shall be responsible to maintain the job site free of any debris and deleterious material. The material needed to complete the work shall also be maintained in an orderly manner. All foreign materials deposited or accumulated on or in property shall be cleaned up daily and as instructed by the Engineer. Failure to complete the clean-up within the specified timeframe may result in completion of the work by the City at the Contractor’s expense. Actual costs incurred by the City for performing this work will be deducted from the monies due to the Contractor.

STORAGE OF MATERIAL AND EQUIPMENT

At no time shall the Contractor store material and equipment in areas other than those specified by the Engineer. All damages outside the construction limits or damages within the construction limits due to the negligence shall be restored by the Contractor at his own expense.

The Contractor shall maintain, during the entire construction period, barricades and warning lights at all material storage areas and around construction equipment if located near traffic areas. The cost to comply with the terms of this requirement will be included in the unit prices of the contract.

VANDALIZED OR DAMAGED ITEMS

The Contractor shall be responsible for protecting against and repairing or replacing work items that were vandalized or defaced. Removal and replacement of the item to the nearest construction joint shall be required.

CLEAN CONSTRUCTION OR DEMOLITION DEBRIS

A soil analysis was performed for this project and a completed IEPA LPC-663 form will be provided to the awarded Contractor for use for the disposal of material generated from this project. It is the Contractor's responsibility to locate and dispose of the material at a permitted CCDD facility in accordance with the criteria set forth in 35 Illinois Administrative Code (IAC) 1100 as amended on August 27, 2012.

If the desired CCDD facility requires additional sampling and testing, it is the Contractor's responsibility to provide the additional sampling and testing necessary for appropriate disposal. The Contractor shall not be compensated for the additional sampling, testing, or paperwork necessary as required by the CCDD facility. The cost will be included in the cost of the contract.

TRENCH BACKFILL

Description. This work shall consist of the furnishing, placing, and mechanically compacting backfill for excavated trenches within paved areas. This work shall be in accordance with the applicable portions of Section 208 of the Standard Specifications, Section 20 of the Standard Specifications for Water and Sewer Construction in Illinois, the TRENCH BACKFILL detail contained in the plans, and the following.

Materials. All trench backfill in required locations shall be CA-6 crushed stone or crushed gravel.

Construction Requirements. Selected granular backfill material shall be used where the trench is in existing or proposed pavements and for all trenches outside of existing or proposed pavements where the inner edge of the trench is within two (2) feet of the edge of the pavements, curb, gutter, curb and gutter, stabilized shoulder, or sidewalk. Where selected granular material is not required, suitable material excavated from the trench may be used.

Trench backfill shall also be used in the excavation around manholes, catch basins, inlets, valve vaults, and other appurtenances when any part of that excavation is within 2 feet of any existing or proposed pavement.

Backfilling shall be in accordance with Section 20 of the Standard Specifications for Water and Sewer Construction in Illinois, Method 1 only deposited in uniform layers not exceeding six (6) inches thick (loose material). Each layer shall be compacted to 90% of modified proctor. Locations where trenches cross the road or any other paved surface shall contain trench backfill that is brought up to existing grade in order to maintain vehicular or pedestrian access. Removal of the top layer of trench backfill to install proposed paved features shall be included in the unit cost of this item.

Method of Measurement. This work will be measured for payment and the area computed in cubic yards in accordance with the details included in the plans.

Basis of Payment. This work will be paid for at the contract unit price per cubic yard for TRENCH BACKFILL.

INLET FILTERS

Description. The Contractor shall be responsible for furnishing, installing, cleaning, and removing inlet filters for all drainage structures that accept stormwater within the project limits. This work shall be in accordance with the applicable portions of Section 280 of the Standard Specifications and the following.

Construction Requirements. Revised Article 280.05 to state the following:

The temporary erosion control systems shall be properly maintained as directed by the Engineer. This work shall include any repair of the various systems, removal of trapped sediment, and cleaning of any silt filter fabric. At a minimum,

accumulated silt in any temporary erosion control system shall be removed every two weeks, or when the basin becomes 75 percent filled, whichever comes first. Trapped sediment and accumulated silt shall be disposed of according to Article 202.03.

Method of Measurement. This work will be measured as individual items for each drainage structure that accepts stormwater

Basis of Payment. Protection of drainage structures with inlet filters will be paid for at the contract unit price per each for INLET FILTERS.

PCC DRIVEWAY PAVEMENT, 6 INCH

Description. This work shall consist of constructing a driveway of Portland cement concrete on an aggregate base. The work shall be done in accordance with applicable portions of Sections 351 and 423 of the Standard Specifications and the following provisions.

Materials. The material for the aggregate base course shall be CA 6 course aggregate meeting the requirements of Article 1004.04 of the Standard Specifications.

Construction Requirements. All driveways being reconstructed shall contain a reconstructed aggregate subbase in accordance with the details for driveways shown in the plans unless otherwise specified by the Engineer. Prior to placement of the PCC material, the aggregate base shall be placed, shaped and compacted to the satisfaction of the Engineer.

All residential and commercial PCC Driveway Pavement shall have a minimum concrete depth of 6 inches and a minimum aggregate subbase depth of 4 inches.

Method of Measurement. This work will be measured in place and the area calculated in square yards.

Basis of Payment. This work will be paid for at the contract unit price per square yard for PCC DRIVEWAY PAVEMENT, 6 INCH, which price will include all labor, material, equipment, and incidentals necessary to complete the work as described above.

Removal of existing aggregate subbase and soil to reach the required subgrade depth will be included in the DRIVEWAY PAVEMENT REMOVAL item unit cost.

Aggregate material required to provide a new subbase will be paid for by SUBBASE GRANULAR MATERIAL, TYPE B of the specified depth.

PCC SIDEWALK

Description. This work shall consist of the placement of proposed sidewalk as stated in the contract documents and/or as directed by the Engineer. The work shall be done in accordance with applicable portions of Section 424 of the Standard Specifications, the details in the plans, and the following.

Construction Requirements. Any excavation required for the purposes of meeting ADA requirements, placing aggregate base course to the proper elevation and thickness, all form work, and placement of P.C.C. material for the proposed sidewalk should be considered included in the unit price for SIDEWALK REMOVAL. Any excavated material shall be disposed of at a suitable offsite location. Any damage to the existing sidewalk and driveways remaining in place due to forming methods or the removal operation shall be replaced to the satisfaction of the Engineer at the Contractor’s own expense.

All sidewalk shall include a minimum 4 in aggregate subbase in accordance with Section 351 of the Standard specifications meeting gradation CA 6 and paid for by SUBBASE GRANULAR MATERIAL, TYPE B of the specified depth.

All sidewalk shall be in accordance with the plans and provided details, and the "IDOT Accessible Public Right-of-Way Field Guide" Published in January of 2016.

PCC Sidewalk shall be a minimum of 5 inches, except at driveways where the minimum thickness is 6 inches.

Expansion joints shall be placed where the sidewalk abuts existing sidewalk, curbs, and between concrete driveway pavement.

Method of Measurement. This work will be measured for payment in place and the area computed in square feet.

Basis of Payment. This work will be paid for at the contract unit price per square foot for PCC SIDEWALK, of the depth specified which price will include all labor, equipment, material, and incidentals necessary to complete the work as described above.

DETECTABLE WARNINGS

Description. This work shall be in accordance with Article 424.09 of the Standard Specifications and the following:

Materials. The warning surfaces shall be brick red cast-in-place, tactile surface tiles with a matte finish, manufactured from glass and carbon reinforced polyester based composite material. Manufacturer catalog cuts or shop drawings shall be approved by the City prior to any tiles being placed.

Construction Requirements. The surfaces shall be placed within the new sidewalk. The sizes shall be calculated to fit the different width sidewalks.

Add the following to Article 424.09 of the Standard Specifications:

> *The Contractor shall make every effort to use radial tiles within sidewalk ramps located along curb line radii where applicable. Where radial tiles cannot be used, rectangular tile shall be cut to fit along the curb line radius in compliance with ADA regulations and to the satisfaction of the Engineer.*

Method of Measurement. This work will be measured in place and the area calculated in square feet.

Basis of Payment. This work will be paid for at the contract unit price per square foot for DETECTABLE WARNINGS.

DRIVEWAY PAVEMENT REMOVAL

Description. This work shall be in accordance with applicable portions of Section 440 of the Standard Specifications and the following provisions:

Construction Requirements. All driveways being reconstructed shall be removed in accordance with the plans. Removal of existing aggregate subbase and soil to reach the required subgrade depth shall be included in this pay item.

Method of Measurement. This work will be measured in place and the area calculated in square yards.

Basis of Payment. This work will be paid for at the contract unit price per square yard for DRIVEWAY PAVEMENT REMOVAL which price will include all labor, material, equipment, and incidentals necessary to complete the work as described above.

SIDEWALK REMOVAL

Description. This work shall be in accordance with applicable portions of Section 440 of the Standard Specifications and the following provisions:

Construction Requirements. All sidewalk removal shown on the plans shall be to the nearest joint or as according to the Engineer.

Any excavation required for the purposes of meeting ADA requirements, placing aggregate base course to the proper elevation and thickness, all form work, and placement of P.C.C. material for the proposed sidewalk should be considered included in the unit price for this item. Any excavated material shall be disposed of at a suitable offsite location.

Any damage to the existing sidewalk and driveways remaining in place due to forming methods or the removal operation shall be replaced to the satisfaction of the Engineer at the Contractor's own expense.

Method of Measurement. This work will be measured in place and the area calculated in square feet.

Basis of Payment. This work will be paid for at the contract unit price per square foot for SIDEWALK REMOVAL which price will include all labor, material, equipment, and incidentals necessary to complete the work as described above.

PIPE CULVERTS

Description. This work shall be in accordance with the applicable portions of Section 542 of the Standard Specifications and the following:

Materials. Driveway pipe culverts shall be constructed of corrugated aluminum alloy pipe of the diameter specified in the plans in accordance with Section 1006.03 of the standard specifications.

Method of Measurement. Pipe culverts will be measured for payment in place in feet.

Basis of Payment. This work will be paid for at the contract unit per foot for PIPE CULVERTS of the class, type, and diameter specified.

DUCTILE IRON WATER MAIN

Description. This work shall consist of furnishing and installing water main of the size and type specified along with any necessary fittings and pipe restraint. This work shall be in accordance with the applicable portions of Section 561 of the Standard Specifications, "Standard Specification for Water and Sewer Construction in Illinois", the details contained in the plans, and the following.

Materials. Materials shall be as follows:

1. Water mains and fittings shall be constructed of ductile iron pipe conforming to the following specifications:
    a. Bell and spigot pipe: ANSI 21.51 (AWWA C151) Class 52.
    b. Pit casted pipe shall not be allowed.
    c. Pipe and fittings shall have an outside bituminous coating with an inside cement lining in accordance with ANSI A21.4 (AWWA C104) Specifications.
    d. Shall have a rated working pressure of three hundred fifty (350) psi plus a surge allowance of one hundred (100) psi. Thickness design shall be in conformance with ANSI/AWWA C150 requirements.

2. Pipe joints shall be mechanical joint or push on joint ductile iron pipe and fittings in accordance with ANSI A21.11 (AWWA C111). Retainer glands shall be required on all fittings. Lengths of pipe restraint shall be determined from manufacturers installation specifications.

All water main pipe and fittings shall be stamped manufactured in the United States of America. The contractor shall submit catalog cuts for the water main pipe and fittings for approval by the Engineer before the start of construction.

All proposed ductile iron pipe shall be wrapped in a black, cross-laminated, linear low density polyethylene encasement a minimum of 8 mils thick. Polyethylene encasement materials and installation methods shall conform to ANSI/AWWA C105/A21.5, using “Method A” or “Method C” installation. Any rips or punctures in the encasement shall be repaired prior to backfilling of the pipe.

Thrust blocking shall be provided as designated in Section 41 of the Standard Specifications for Water and Sewer Construction in Illinois and shall be accomplished using a joint restraint system consisting of MEGALUG mechanical joint restraints designed for the type of piping on which it shall be installed. Mechanical thrust restraint shall utilize multiple gripping wedges incorporated into a follower gland meeting the applicable requirements of ANSI/AWWA C110/A21.10-03. Preformed concrete block thrust blocking shall be provided at all bends greater than 10 degrees, at all mechanical joint connections, and at all fire hydrants. Poured-in-place concrete thrust blocks are not allowed.

A continuous, 10-gauge solid insulated copper tracer wire shall be installed along all water main and hydrant branch lines. The tracer wire shall be carefully placed along the top of the pipe and securely taped in three locations along the pipe prior to placing initial backfill. Any splices in the copper wire shall be soldered and fitted with an insulated watertight boot. Tracer wire shall be brought to grade at all fire hydrants along the outside of the hydrant barrel and terminated in a flush-type access box. Wire connection to the access box shall have a minimum of 24” of slack to permit removal of the lid with the wire intact.

Testing. All construction and testing of the water main and related appurtenances shall conform to the applicable requirements of Section 41 of the Standard Specifications for Water and Sewer Construction in Illinois. The City Water Department shall be notified a minimum of forty-eight hours prior to the start of any testing. Testing shall take place for the entire length of water main constructed and shall consist of the following tests:

- Pressure Test
- Leakage Test
- Fire Service Test

The pressure and leakage tests for all water mains shall be conducted at a pressure of 150 psi. Tapped plugs with temporary flushing risers may be required for testing the water main. Proper blocking must be in place during testing. All water mains and appurtenances shall be tested at 150 psi for a two-hour period. The Contractor shall submit a map identifying all of the water main pressure tested, identifying multiple pressure tests if they are used.

The leakage test shall be completed in accordance with Section 41-2.14C of the Standard Specifications for Water and Sewer Construction in Illinois.

All fire service testing described below shall require a minimum of forty-eight hours’ notice to the Water Department and the Building Inspector. The City will be present to witness all tests and will contact the Sandwich Fire Protection District to be in attendance. The fire service shall be subjected to a hydrostatic pressure of 200 psi or 50 psi in excess of the system working pressure, whichever is greater, and shall maintain that pressure without loss for two hours. (NFPA 13, Chapter 10.10.2.2.1)

All testing shall be completed prior to the removal of the existing main. The Engineer shall be notified prior to the execution of any testing procedure. Should the Contractor fail to notify the Engineer, the tests shall be repeated under the Engineer's supervision at the Contractor's expense.

Disinfection. Disinfection of the water main shall conform to Section 41-2.15 of the Standard Specifications for Water and Sewer Construction in Illinois. The Engineer and the City shall be notified prior to any disinfection-related work. All water mains and appurtenances shall be disinfected before they are put into service. The installer is responsible for disinfecting the mains. After completion of the leakage testing, disinfection of the water main shall be in accordance with AWWA C651-99, Standard for Disinfection of Water Mains. Disinfection of the water main shall use the liquid chlorine form and the continuous feed method. 50ppm concentration at the start; 25ppm after 24 hours.

After final flushing of the disinfected water main, bacteriological testing shall be performed in accordance with AWWA C651-99 and the provisions of the Illinois Environmental Protection Agency Public Water Supply Construction Permit. The chlorine

residual at the time of bacteriological testing shall not be in excess of that residual present at the points of connection to the existing system. The City may collect their own additional samples for verification of contractor's results. Original bacteriological test results from the testing laboratory, certified by the Illinois Department of Public Health, are to be submitted to the City. The Contractor shall also submit a map of the water main identifying all of the sample locations. All water mains must be shown to be free of bacterial contamination before being placed into service. Satisfactory disinfection is demonstrated when two consecutive water samples, collected at least twenty-four hours apart, indicate no bacterial contamination. The original test results, the sample location map, and the construction permit shall all be transmitted by the City to the Illinois Environmental Protection Agency for approval of the IEPA water main permit.

Cost to provide all disinfection and testing shall be included in the price of water main.

Construction Requirements. All water main components shall be installed to maintain a minimum depth of 5.5 feet below proposed finished grade to the top of pipe. Variations from these standards will require approval of the Engineer.

All water main and sewer horizontal and vertical separation shall conform to the latest version of the Standard Specifications for Water & Sewer Construction in Illinois. Reference to these standards should be made when it is impossible to meet separation requirements for casing pipe requirements. Where the proposed water main cannot maintain the required separation from the existing sanitary and storm sewers, the water main of the size and type specified shall be placed in a casing pipe which extends a minimum of ten feet to each side of the crossing or as specified in the plans.

Existing pipelines shall be properly supported during construction of the water main so that cracking and leakage or failure of the existing pipeline does not occur. Fittings (bends, tees, crosses, etc.) in all ductile iron pipe systems shall be restrained to prevent joint separation. Thrust restraint design shall be in accordance with the procedures of the AWWA Manual of Water Supply Practices - M41, Second Edition. Dead end water main ends with caps or plugs shall be mechanically restrained for three joints prior to the dead end in addition to concrete thrust blocking. Restraint harness for push-on bells of ductile iron pipe shall be used on all water main pipe joints within proposed encasement pipe.

Pipe bedding, haunching, and initial backfill shall be of gradation CA-6 from 4 inches below the pipe to a depth 12" above the top of pipe as shown on the detail for Trench Backfill, Special included in the plans.

The contractor shall notify the Engineer of any planned shutdown of existing water mains a minimum of 48 hours in advance of this work to properly notify residents. Residents shall not be without water supply for a period lasting more than 4 hours at any given time. Water main shutdowns shall not occur without approval by the Engineer and proper notification to residents affected.

No new water main should be connected to the existing water main unless the new water main can be pressure tested separately. Connection to an existing water main shall be done by pressure connection only unless authorized by the Engineer. Pressure connection and valve shall be located within the valve vault. No pressure connection shall be within 3 feet of an existing water main joint. If a pressure connection cannot be done, a cut in sleeve and tee connection shall be used. All fittings shall be swabbed out with a chlorine solution of at least 50 mg/L as approved by the City of Sandwich Public Works Department.

Method of Measurement. Water main will be measured for payment in place in feet. The length measured will include stops fittings and valves.

Water main installed in casing pipe will be measured for payment in place in feet of water main pipe installed within the ends of water main encasement.

Basis of Payment. All of the above, except for water main encasement pipe and water main installed within casing pipe, will be paid for at the contract unit price per foot for DUCTILE IRON WATER MAIN of the diameter specified which price will include all fittings, polyethylene encasement, thrust blocking, tracer wire, tracer wire access boxes, testing, disinfection, cutting, capping, and connections to existing water mains to remain in place.

Water main installed within encasement pipe will be paid for at the contract unit price per foot for DUCTILE IRON WATER MAIN, RESTRAINED JOINT PIPE of the diameter specified.

CUT AND CAP EXISTING WATER MAIN

Description. This work shall be done in accordance with the current edition of the Standard Specs Water and Sewer Construction in Illinois insofar as applicable and the following provisions. This work shall consist of "cutting and capping" existing water main at the locations shown on the plans or as directed by the Engineer.

Basis of Payment. This work will be included in the contract unit price for the various sizes of water main to be installed. The work will include all labor, equipment, trench backfill, and fittings to complete the work.

WATER VALVES

Description. This work shall consist of furnishing and installing valves in vaults, of the size and type specified. This work shall be in accordance with the applicable portions of the Standard Specifications for Water and Sewer Construction in Illinois, the details contained in the plans, and the following.

Materials. All water valves shall be in accordance with Section 42 of the Standard Specifications for Water and Sewer Construction in Illinois and meet the following requirements:

Type: Resilient Wedge Gate Valve
Size: 6" to 12" Diameter
Connections: Mechanical Joint per AWWA C111
Operating Nut: 2" Square – Open Left
Stem: Non-Rising Stem
Coating: Exterior Epoxy and Interior Epoxy Coating per AWWA C550
Seals: O-ring seals
Wedge: Solid iron encapsulated with rubber
Approved manufacturers and models include:
Mueller A2360-XX Resilient Wedge Gate Valve with MJ Ends
Clow ULFM – AWWA R/W Valve F-6100
Waterous RW AWWA C-509

All below grade factory installed bolts and fasteners shall be 304-grade stainless steel.

The Contractor shall provide catalog cuts for all appurtenant items pertaining to water valves prior to the start of construction for approval by the Engineer.

Basis of Payment. This work will be paid for at the contract unit price per each for WATER VALVES of the size specified, which price will include all labor, materials, and equipment necessary to complete this item in accordance with the plans and specifications.

TAPPING VALVES AND SLEEVES 10"

Description. This work shall consist of installing tapping connections of the proposed water main to the existing live water main at locations designated on the plans. This work shall be in accordance with the requirements of Section 46 of the Standard Specifications for Water and Sewer Construction in Illinois.

Materials. Tapping sleeves shall be ductile iron with mechanical joint connections meeting the following requirements:

- Outlet flange drilling complies with ASME/ANSI B16.42 class 150
- Certified ANSI/NSF 61
- Ductile Iron body with ¾" NPT test plug

All nuts, bolts and washers shall be Type 304 stainless steel or better. Tapping sleeves shall be rated with a working pressure of 150 psi and be capable of withstanding a test pressure of 225 psi. A test port shall be provided to facilitate pressure testing the apparatus prior to cutting the main.

All tapping connections shall be located within a precast concrete valve vault. Tapping valves shall meet the following criteria:

Tapping Valve – Valves shall meet the requirements of AWWA C509.
- Type: Resilient Wedge Tapping Valve
- Connections: Mechanical Joint x Flanged End
- Operating Nut: 2" Square – Open Left
- Stem: Non-Rising Stem
- Coating: Interior and Exterior Epoxy Coating per AWWA C550
- Seals: O-ring seals
- Wedge: Solid iron encapsulated with rubber

Valve vaults shall be in accordance with the special provision for VALVE VAULTS.

The Contractor shall provide catalog cuts for all appurtenant items pertaining to tapping valves and valve vaults prior to the start of construction for approval by the Engineer.

Construction Requirements. All water taps shall require a minimum of 48 hours notice to the City Water Department prior to this work being performed. This item shall include making a permanent branch connection to the existing water main by performing a live tap of the existing pipe while in continuous service. This shall include preparation of the site and the existing pipe, furnishing, placement and set-up of the tapping sleeve, tapping valve, tapping machine and ancillary equipment, testing the equipment prior to making the tap and performing the tapping procedure.

The site of the proposed tap shall be excavated to the dimensions necessary to install and secure the tapping equipment and support the existing pipe. The tapping equipment shall be supported such that it does not impose any external load upon the existing pipe. The existing pipe shall be excavated around its full circumference to provide for placement of the tapping sleeve. The existing pipe shall be supported as required to compensate for the removed pipe bedding, haunch and backfill removed.

The Contractor shall be responsible for verifying the size and type of existing water main to be tapped prior to procuring the tapping sleeve. The full circumference of the outer surface of the existing main within the limits of the tapping sleeve shall be thoroughly cleaned. The outer surface of the existing watermain and the inner surface of the tapping sleeve and gasket shall be disinfected with a 1% chlorine solution prior to installation.

The complete apparatus, including the tapping sleeve, tapping valve, and tapping machine shall be pressure tested to 120 psi as a complete unit prior to cutting the main. Following completion of the pressure connection, the tapping sleeve and valve shall be placed within a valve vault. Trench backfill, consisting of CA-6, shall be placed, and compacted up to existing grade to maintain vehicular access in accordance with the provisions for Trench Backfill, Special.

Method of Measurement. Pressure connections will be measured per each pressure connection installed.

Valve Vaults will be measured separately in place per each.

Basis of Payment. This work will be paid for at the contract unit price per each for TAPPING VALVES AND SLEEVES of the size specified which price will include all labor, equipment, materials, excavation, preparation, pipe supports, tapping sleeve, tapping valve, bedding, backfill and all ancillary materials and equipment. This will also include the use of the tapping machine, disposal of surplus materials and all testing.

Valve Vaults will be paid for separately per each according to the special provision for VALVE VAULTS.

ADJUSTING WATER SERVICE LINES

Description: This work shall consist of furnishing and installing new water service lines to adjust for conflicts due to installation of new storm sewer utilities as they are found in the field. This work shall be in accordance with Section 562 of the Standard Specifications, the applicable portions of the Standard Specifications for Water and Sewer Construction in Illinois, the details in the plans, and the provisions herein.

Materials. Materials shall be in accordance with the WATER SERVICES CONNECTION (SHORT AND LONG) special provision located herein.

Construction Requirements. Water service lines in conflict with the proposed storm sewer shall be removed and replaced between the existing corporation stop and curb stop. Replacement of the corporation stop and curb stop shall only occur with the approval of the Engineer. All water service lines shall be installed at a minimum depth of 5.5 feet and shall be continuous without joints from the corporation stop to the curb stop.

Selected granular backfill material shall be used where the trench is in existing or proposed pavements and for all trenches outside of existing or proposed pavements where the inner edge of the trench is within two (2) feet of the edge of the pavements, curb, gutter, curb and gutter, stabilized shoulder, or sidewalk. Where selected granular material is not required, suitable material excavated from the trench may be used. All trench backfill in required locations shall be CA-6 crushed stone or crushed gravel and compacted to 90% of modified proctor. Backfilling shall be in accordance with Section 20 of the Standard Specifications for Water and Sewer Construction in Illinois, Method 1 only deposited in uniform layers not exceeding six (6) inches thick (loose material). Each layer shall be compacted. Locations where trenches cross the road shall contain trench backfill that is brought up to existing grade in order to maintain vehicular access.

The Contractor shall provide catalog cuts for all appurtenant items for water services prior to the start of construction.

Proposed water services shall be installed out of driveways where possible. The letter “W” shall be imprinted in the curb at the location of all water service crossings.

All water service taps shall require a minimum of forty-eight hours’ notice to the City Water Department to have time to properly notify residents. No existing water service may be shut down without consent of the Engineer and/or the City. The City or the Engineer shall be present to witness the service taps. An Illinois licensed plumber shall be required to be present during, and to inspect, all proposed water service line connections to existing water service lines and water mains

Method of Measurement. Water service lines will be measured in place for payment in feet.

Basis of Payment. This work will be paid for at the contract unit price per foot for ADJUSTING WATER SERVICE LINES which price will include the cost of all copper tubing, fittings, connections, service clamps, pavement removal, trench excavation, trench backfill and all labor (including any hand digging), materials, and equipment to make a complete and finished installation.

FIRE HYDRANTS TO BE REMOVED

Description: This work shall consist of the removal of existing fire hydrants at locations shown on the plans or as directed by the Engineer.

Construction Requirements. The hydrant, auxiliary valve and lead pipe to the water main shall be removed. The City shall be notified a minimum of one week in advance of the required shutdown.

Trench backfill for this item will not be paid for separately but will be included in the cost of this item.

The removed fire hydrants shall be delivered to the City yard as directed by the Engineer. Delivery shall be included in the cost of this item.

Basis of Payment. This work will be paid for at the contract unit price each for FIRE HYDRANTS TO BE REMOVED, which price will be payment in full for all labor, equipment, and materials for a complete removal.

DOMESTIC WATER SERVICE BOXES TO BE ADJUSTED

Description. This work shall be in accordance with the applicable portions of Section 602 of the Standard Specifications and the following.

Materials. Broken service (curb) boxes shall be replaced with materials meeting the following criteria:

Curb Box – Curb boxes to be extension type.
Minimum ±6" of adjustment (72" long to 60" long for 5'-6" cover)
Minneapolis base thread pattern
Cast iron construction with brass pentagon plug

Construction Requirements. Existing domestic water service boxes shall be adjusted so that the top of the box is flush with the adjacent finished surface. In the event any service box is found to be broken, the Contractor shall furnish a new service (curb) box in accordance with the materials section of this special provision.

After adjustment, the valve box shall be clean and the operating nut readily accessible.

Basis of Payment. This work will be paid for at the contract unit price per each for DOMESTIC WATER SERVICE BOXES TO BE ADJUSTED. Furnishing and replacing broken service boxes will be paid according to Article 109.04 of the Standard Specifications.

PIPE UNDERDRAINS 6" (SPECIAL)

Description. This work shall consist of furnishing and constructing perforated, fabric encased pipe underdrains of the specified inside diameter in fabric lined trenches backfilled with coarse aggregate in accordance with the applicable portions of Section 601 of the Standard Specifications and the plans.

Materials. Pipe underdrains shall be Perforated Corrugated Polyethylene (PE) Pipe with a Smooth Interior encased in a fabric envelope. The manufacturer shall be listed as compliant through the NTPEP program and the pipe shall be according to AASHTO M 252 (nominal size – 3 to 10 inch). The pipe shall have a minimum pipe stiffness of 46 psi at five percent deflection and shall be capable of 60 percent vertical deflection in parallel plate loading without splitting or cracking.

Geotechnical Fabric for encasing the pipe underdrains and for lining the trench of the pipe underdrains shall consist of woven or nonwoven filaments of polypropylene, polyester, or polyethylene. Nonwoven fabric shall be needle punched. The filaments shall be dimensionally stable (i.e., filaments shall maintain their relative position with respect to each other) and resistant to delamination. The filaments shall be free from any chemical treatment or coating that might significantly reduce porosity and permeability. The fabric shall have a minimum weight of 3.5 ounces per square yard per ASTM D 3776, minimum grab tensile strength of 100 pounds per ASTM D 4632, minimum grab elongation break of 20% per ASTM D 4632, and apparent opening size (AOS No.) of 30 maximum for nonwoven and 50 maximum for woven
fabric per ASTM D 4751.

Method of Measurement. Pipe underdrains 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 PIPE UNDERDRAINS 6" (SPECIAL) which price will be payment in full for all labor, equipment, and materials for a complete installation as specified above.

VALVE VAULTS

Description. This work shall consist of furnishing and installing valve vaults, of the size and type specified. This work will be in accordance with the applicable portions of the Standard Specifications for Water and Sewer Construction in Illinois, the details contained in the plans, and the following.

Materials. Valve vaults shall be precast concrete meeting the requirements of Section 32-4 of the Standard Specifications for Water and Sewer Construction in Illinois and the details in the plans. Barrel sections shall be sealed using a butyl rubber or rubber strip. A maximum of 8-inches of adjusting rings shall be used. All valve vault structures shall have lids furnished with "WATER" cast into the top surface and contain a concealed pick hole. The valve shall be supported on concrete blocks. All wall penetrations shall be filled and finished smooth with non-shrink grout and barrel sections shall be sealed using a butyl rubber or rubber strip to form a water-tight seal.

Basis of Payment. This work will be paid for at the contract unit price per each for VALVE VAULTS of the size, type, and frame and grate specified, which price will include all labor, materials, and equipment necessary to complete this item in accordance with the plans and specifications.

VALVE BOXES TO BE ADJUSTED

Description. This work shall be in accordance with the applicable portions of Section 602 of the Standard Specifications and the following:

Materials. Broken valve boxes shall be replaced with materials meeting the following criteria:

Valve Box shall be a two-piece screw-type.
Material: Cast Iron – no welded threads
Lid: "WATER"
Extension: 39" to 60" (assuming 5'-6" cover)
Adapter: Rubber Valve Box Adaptor

Construction Requirements. Existing valve boxes shall be adjusted so that the top of the box is flush with the adjacent finished surface. After adjustment, the valve box shall be clean and the operating nut readily accessible.

In the event any valve box is found to be broken, the Contractor shall furnish and replace the broken valve box with a new valve box in accordance with the Materials section of this special provision.

Basis of Payment. This work will be paid for at the contract unit price per each for VALVE BOXES TO BE ADJUSTED. No additional compensation will be allowed for replacing broken valve boxes with those furnished by the City.

SANITARY SEWER SERVICE REMOVAL AND REPLACEMENT

Description: This work shall consist of the removal and replacement of sanitary sewer services in conflict with proposed water main and storm sewer utilities being installed as found in the field. This work shall be in accordance with the applicable portions of Section 551 of the Standard Specifications, the Standard Specifications for Water and Sewer Construction in Illinois, and the following provisions.

Materials: Sanitary sewer pipe shall be in accordance with the special provision for SANITARY SEWER.

Trench Backfill Shall be in accordance with the TRENCH BACKFILL, SPECIAL detail in the plans and special provision.

Couplings for joining pipes of dissimilar materials shall be "non-shear" flexible rubber with stainless steel bands and shall meet the approval of the Engineer.

Construction Requirements: This item shall consist of the work and materials necessary to remove and replace sanitary sewer services in accordance with the Standard Specifications for Water and Sewer Construction in Illinois meeting the approval of the Engineer.

Method of Measurement: This item will be measured in place per each sanitary sewer services removed and replaced.

Basis of Payment: This work will be paid for the contract unit price per each for SANITARY SEWER SERVICE REMOVAL AND REPLACEMENT. This price will include the cost of all removal, pipe, fittings, trench backfill, connections, materials, equipment, and labor (including any hand digging) required to make a complete and finished installation.

TELEVISION INSPECTION OF SEWER

Description. This work shall consist of televising all sanitary sewer service lines from the service cleanout to the main sanitary line prior to the installation of the water main and storm sewer.

Construction Requirements. The Contractor shall furnish a videotape of a televised inspection of the interior of all sanitary sewer service lines located within the project limits to the Engineer. This film will be used by the Engineer to determine where service line pipe is to be removed and replaced.

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

RELOCATE EXISTING MAILBOX

Description. This work shall consist of removing and relocating existing mailboxes as indicated on the plans.

Construction Requirements. The Contractor shall remove the existing mailbox using caution to not damage the existing mailbox during removal. Any damage caused to existing mailboxes during removal shall be repaired or replaced to the satisfaction of the Engineer.

The Contractor shall temporarily set mailboxes that interfere with construction operation that comply with staging for adequate mail delivery as approved by the Engineer. After completion of roadway construction, mailboxes shall be set in their permanent locations as indicated in the plans and this special provision, as directed by the Engineer. This work shall be in conformance with article 107.20 of the standard specifications. Coordination with the local Postmaster will be required to ensure there are no disruptions to the delivery of mail to any residents within the project limits.

Mailboxes shall be relocated to a final location the mailbox face is 6” to 8” behind the proposed edge of pavement and 41” to 45” above the proposed edge of pavement elevation or as approved by the Engineer. Mailboxes shall be anchored into the ground by burying the vertical post a minimum of 24” into the ground and encasing it in concrete.

Basis of Payment. This work will be paid for at the contract unit price per each for RELOCATE EXISTING MAILBOX, which price will include all labor, equipment, and materials required to completely remove and provide a complete installation.

WATER MAIN ENCASEMENT

Description. This work shall consist of furnishing and installing casing pipe where water main and sewer separation requirements cannot be met. This work shall be in accordance with the applicable portions of the Standard Specifications for Water and Sewer Construction in Illinois, the details contained in the plans, and the following.

Materials. Water main encasement material shall be C905 PVC conforming to AWWA C05, DR 18 (235 psi) with a minimum inner diameter of 20”. The water main shall be installed through the center of the encasement pipe using stainless steel casing spacers. A minimum of two supports shall be used per pipe for lengths up to 12.5 feet, and a minimum of three supports shall be used for lengths greater than 12.5 feet, or per manufacturer’s recommendation.

Restraint harness for push-on bells of ductile iron pipe shall be used on all water main pipe joints within the proposed encasement pipe. The ends of the encasement pipe shall be sealed using a pull over type rubber end seal secured with stainless steel bands to preclude entrance of foreign material into the encasement, which might prevent ready removal of the water main at some future date. The Contractor may install larger-diameter pipe than called for above, if he believes it would be beneficial to placement or pipe stability, at no extra cost.

Basis of Payment. This work will be measured for payment in place in feet as WATER MAIN ENCASEMENT.

The water main installed within the casing pipe will be paid for at the contract unit price per foot for DUCTILE IRON WATER MAIN, 10” RESTRAINED JOINT PIPE of the diameter specified, which price will include the joint restraints.

The Contractor shall provide catalog cuts for all appurtenant items pertaining to WATER MAIN ENCASEMENT and DUCTILE IRON WATER MAIN, 10" RESTRAINED JOINT PIPE prior to the start of construction for approval by the Engineer.

SANITARY SEWER REMOVAL

Description. This work shall consist of the removal of sanitary sewers.

Construction Requirements. Existing sanitary sewers shall be removed and disposed of according to Article 202.03. Excavation of trenches shall be performed according to the applicable requirements of Article 550.04 and the Trench Backfill, Special detail in the plans.

Method of Measurement. Removal of sanitary sewers will be measured in place in feet.

Basis of Payment. This work will be paid for at the contract unit price per foot for SANITARY SEWER REMOVAL of the size specified, which price will include all labor, materials, and equipment necessary to complete this item in accordance with the plans and specifications.

TRENCH BACKFILL, SPECIAL

Description. This work shall consist of the furnishing, placing, and mechanically compacting backfill for excavated trenches within paved areas pertaining to water main and sanitary pipes. This work shall be in accordance with the applicable portions of Section 208 of the Standard Specifications, Section 20 of the Standard Specifications for Water and Sewer Construction in Illinois, the TRENCH BACKFILL, SPECIAL detail contained in the plans, and the following.

Materials. All trench backfill in required locations shall be CA-6 crushed stone or crushed gravel.

Construction Requirements. Selected granular backfill material shall be used where the trench is in existing or proposed pavements and for all trenches outside of existing or proposed pavements where the inner edge of the trench is within two (2) feet of the edge of the pavements, curb, gutter, curb and gutter, stabilized shoulder, or sidewalk. Where selected granular material is not required, suitable material excavated from the trench may be used.

Trench backfill shall also be used in the excavation around manholes, catch basins, inlets, valve vaults, and other appurtenances when any part of that excavation is within 2 feet of any existing or proposed pavement.

Backfilling shall be in accordance with Section 20 of the Standard Specifications for Water and Sewer Construction in Illinois, Method 1 only deposited in uniform layers not exceeding six (6) inches thick (loose material). Each layer shall be compacted to 90% of modified proctor. Locations where trenches cross the road or any other paved surface shall contain trench backfill that is brought up to existing grade in order to maintain vehicular or pedestrian access. Removal of the top layer of trench backfill to install proposed paved features shall be included in the unit cost of this item.

Method of Measurement. This work will be measured for payment and the area computed in cubic yards in accordance with the details included in the plans.

Basis of Payment. This work will be paid for at the contract unit price per cubic yard for TRENCH BACKFILL, SPECIAL.

AGGREGATE SURFACE COURSE, TYPE B

Description. This work shall be in accordance with Section 402 of the Standard Specifications and the following provisions.

Construction Requirements. Add the following to Article 402.07 of the Standard Specifications:

The top layer shall be given a final rolling with a roller meeting the requirements of Article 1101.01.

Method of Measurement. This work will be measure for payment and the area calculated in square yards.

Basis of Payment. This work shall be paid for at the contract unit price per square yard for AGGREGATE SURFACE COURSE, TYP B of the depth specified which price shall include all labor, equipment, and materials.

WATER MAIN REMOVAL

Description. This work shall consist of removing portions of the existing water main as shown on the plans or as directed by the Engineer. This work shall be done in accordance with the Standard Specifications for Water and Sewer Construction in Illinois insofar as applicable and the following provisions.

Construction Requirements. Existing water main pipe scheduled for removal shall be completely removed and disposed of by the Contractor. This work shall include dewatering (if necessary), excavating down to the existing water main, removal, disposal, backfilling the excavated trench, and all other labor, materials, and equipment necessary to complete the removal of the existing water main.

Trench Backfill shall be in accordance with the Trench Backfill special provisions herein.

Method of Measurement. This work will be measured for payment in feet of existing water main removed.

Basis of Payment. This work will be paid for at the contract unit price per foot for WATER MAIN REMOVAL of the diameter specified.

FIRE HYDRANT COMPLETE

Description. This work shall consist of furnishing and installing new fire hydrants in accordance with the Standard Specifications for Water and Sewer Construction in Illinois insofar as applicable and the details in the plans at locations shown on the plans or as directed by the Engineer.

Materials. Fire hydrants, auxiliary valves and valve boxes shall meet the following criteria:

Fire Hydrant – Fire hydrants shall meet the requirements of AWWA C502.
- Pumper Nozzle: One pumper nozzle - 4½" Diameter NH Thread
- Hose Nozzle: Two hose nozzles - 2½" Diameter NH Thread
- Main Valve Opening: 5¼" Diameter
- Burial Depth: 6'-0" (assuming 5'-6" cover)
- Inlet Connection: 6" Diameter Mechanical Joint per AWWA C111
- Operating Nut: 1½" Pentagon – Open Left
- Exterior Coating: Yellow (Sherwin Williams Yellow KEM 400 F75YH1.)
- Interior Coating: Epoxy Coating per AWWA C550
- Approved Manufacturers and models:
  - Mueller Super Centurian 250 Fire Hydrant A-423
  - Clow Medallion Fire Hydrant
  - Waterous Fire Hydrant

Auxiliary Valve – Valves shall meet the requirements of AWWA C509.
- Type: Resilient Wedge Gate Valve
- Size: 6" Diameter
- Connections: Mechanical Joint per AWWA C111
- Operating Nut: 2" Square – Open Left
- Stem: Non-Rising Stem
- Coating: Exterior Epoxy and Interior Epoxy Coating per AWWA C550
- Seals: O-ring seals
- Wedge: Solid iron encapsulated with rubber
- Approved Manufacturers and models:
  - Mueller A2360-20 Resilient Wedge Gate Valve with MJ Ends
  - Clow ULFM – AWWA R/W Valve 6" F-6100
  - Waterous

Valve Box – Valve box to be two-piece screw-type.
Material: Cast Iron – no welded threads
Lid: "WATER"
Extension: 39" to 60" (assuming 5'-6" cover)
Adapter: Rubber Valve Box Adaptor

Hydrants shall be connected to water mains with a minimum diameter of 6" DIWM CL 52 pipe. All hydrants shall also include a "Hydrafinder" standard hydrant locator, installed. Valve boxes shall have a valve box stabilizer, installed.

The Contractor shall provide catalog cuts for all appurtenant items for the fire hydrant assembly for approval by the Engineer prior to the start of construction.

Construction Requirements. Fire hydrants complete shall include the hydrant assembly, the auxiliary valve, and the branch line off the main. The maximum distance between hydrants shall not exceed 300 feet. A fire hydrant shall be located at each intersection and at the end of a cul-de-sac. The pumper nozzle shall be oriented to face the street. No obstructions (signage, street light poles, etc.) shall be installed within 4'-0" of the fire hydrant. Centerline distance between the auxiliary valve stem and the hydrant barrel shall not be less than 2'-0". Fire hydrants shall be rodded to the tee for the hydrant lead and all joints are to be mechanically restrained along the hydrant branch line. All costs associated with providing thrust blocking shall be included in the unit cost of this pay item.

Direct connection of the auxiliary valve to the water main tee may be required as directed by the Engineer and approved by the City.

Fire hydrants shall be installed with a maximum of one extension kit used, and a maximum extension of 12". Fire hydrant extension kits must be of the same manufacture as the hydrant and must be installed according to the manufacturer's specifications using original manufacturer parts.

The center of the fire hydrant shall be set at the locations indicated on the plans. All hydrants shall be oriented so that the pumper nozzle faces the roadway. All hydrants and any required adjustment fittings shall receive one coat of rustproof base yellow paint prior to final Engineer acceptance.

All fire hydrants that have yet to be approved for use must be covered and identified as being "NOT IN SERVICE". Identification bags shall be N.I.S. BAGS. N.I.S. BAGS shall be made of 27" x 42" x 4 mil rugged polypropylene material, orange in color and in bold print clearly show in very large, easy-to-read print the words "NOT IN SERVICE". Tie Straps shall be provided to firmly secure bags to the hydrant. If the bag is removed for flushing, testing, or for any other reason prior to full operation, it shall be re-bagged.

Basis of Payment. This work will be paid for at the contract unit price each for FIRE HYDRANT COMPLETE, which price will be payment in full for all labor and materials required to complete the installation including auxiliary valve and cast-iron valve box and adjusting the barrel length to provide 18 to 24 inches between the pump nozzle and ground.

SANITARY MANHOLES

Description. This work shall consist of constructing 4 foot diameter sanitary manholes with new frames and lids at locations shown in the plans. This work shall be in accordance with the applicable portions of Section 602 of the Standard Specifications, Section 32 of the Standard Specifications for Water and Sewer Construction in Illinois, and the details in the plans.

Basis of Payment. This work will be paid for at contract unit price per each for MANHOLES SANITARY, 4'-DIAMETER, TYPE 1 FRAME, CLOSED LID. This price will include all labor, materials, and equipment necessary to complete this item in accordance with the plans and specifications.

SANITARY MANHOLES TO BE REMOVED

Description. This work shall consist of removing sanitary manholes. The work shall be done in accordance with the applicable portions of Section 605 of the Standard Specifications and the Standard Specifications for Water and Sewer Construction in Illinois.

Construction Requirements. The work shall be performed in a manner approved by the Engineer. All portions of the existing sanitary manhole are to be removed and disposed of properly including the existing frame and lid.

Basis of Payment. This work will be paid for at the contract unit price per each for SANITARY MANHOLES TO BE REMOVED.

VALVE VAULTS TO BE REMOVED

Description. This work shall consist of removing valve vaults. The work shall be done in accordance with the applicable portions of Section 605 of the Standard Specifications and the Standard Specifications for Water and Sewer Construction in Illinois.

Construction Requirements. The work shall be performed in a manner approved by the Engineer. All portions of the existing valve vault are to be removed and disposed of properly including the existing frame and lid.

Basis of Payment. This work will be paid for at the contract unit price per each for VALVE VAULTS TO BE REMOVED.

FRAMES AND LIDS TO BE ADJUSTED (SPECIAL)

Description. This work shall consist of adjusting frames and lids in accordance with the applicable portions of Section 603 of the Standard Specifications and the following.

Construction Requirements. Prior to the full-depth reclamation operations, the Contractor shall remove all frames and lids of manholes and water valves including a minimum of 12 inches of pavement from around the structure. After removal, the Contractor shall place a suitable metal plate over the manhole and water valve locations and backfill the area with a temporary hot-mix or cold-mix asphalt mixture. The Contractor shall then complete the full-depth reclamation operations and placement of all HMA lifts except surface course.

Prior to placing the surface course, the Contractor shall reinstall the frames and lids and water valves and adjust them to the finished pavement elevation.

The excavated area around the manholes and water valves shall be filled with Class PP-1 or PP-2 concrete.

Method of Measurement. This work will be measured for payment per each frame and lid to be adjusted within the pavement scheduled for full depth reclamation operations.

Basis of Payment. This work will be paid for at the contract unit price per each for FRAMES AND LIDS TO BE ADJUSTED (SPECIAL) which price will include all labor, equipment, and materials necessary to perform a complete adjustment in accordance with the above.

TRAFFIC CONTROL PLAN

Description. Traffic control shall be in accordance with the applicable sections of the Standard Specifications, the Supplemental Specifications, the "Illinois Manual on Uniform Traffic Control Devices for Streets and Highways", any special details, and Highway Standards contained in the plans, and the Special Provisions contained herein.

Special attention is called to Articles 107.09 and 107.14 of the Standard Specifications and the following Highway Standards, Details, Quality Standard for Work Zone Traffic Control Devices, Recurring Special Provisions, and Special Provisions contained herein as they relate to traffic control.

Revise Article 701.10 of the Standard Specifications to read: "The Contractor shall conduct inspections of the worksite at a frequency that shall allow for the timely replacement of any traffic control device that has become displaced, worn, or damaged. A sufficient quantity of replacement devices, based on vulnerability to damage, shall be readily available to meet this requirement." Delete Articles 701.19(d) and Article 701.20(g) of the Standard Specifications

Revise the last paragraph of Article 701.13 of the Standard Specifications to read: "Flaggers are required only when workers are present."

Standard Drawings.
701006, 701011, 701201, 701301, 701501, 701801, 701901

Standard Specifications and Recurring Special Provisions.
Work Zone Traffic Control and Protection (Section 701)
Work Zone Traffic Control Surveillance (LRS3)

Project Special Provisions.
Work Zone Control
Maintenance of Roadways
Detour Signing

Details.
720-8 Temporary Information Signing

At the preconstruction meeting, the Contractor shall furnish the name of the individual in his direct employee who is to be responsible for the installation and maintenance of the traffic control for this project. If the actual installation and maintenance are to be accomplished by a subcontractor, consent shall be requested of the Engineer at the time of the submittal of bids. This shall not relieve the Contractor of the foregoing requirement for a responsible individual in his direct employ. The City will provide the Contractor the name of its representative who will be responsible for the administration of the Traffic Control Plan.

The Contractor shall notify the City at least 72 hours in advance of beginning work. Two-way traffic shall be maintained at all times during the prosecution of this work. When lane assignments conflict with existing pavement markings, approved traffic control devices such as signs, cones, barrels, barricades, etc. shall be used to delineate traffic lanes. When available street width is not sufficient to allow for two-lane, two- way traffic, certified flaggers shall be required in accordance with the standards included herein.

Basis of Payment. This work will be paid for at the contract Lump Sum price for TRAFFIC CONTROL AND PROTECTION, (SPECIAL), which price will be payment in full for all labor, materials, and equipment, required to complete the work as specified herein.

WORK ZONE CONTROL

Description. This work shall be done in accordance with Section 701 of the Standard Specifications insofar as applicable and the following provisions.

Construction Requirements. This work shall include furnishing, installing, maintaining, relocating, and removing all traffic control devices used for the purpose of regulating, warning, or directing traffic during the construction or maintenance of this improvement.

The Contractor will be responsible for the proper location, installation, and arrangement of all traffic control devices. Special attention shall be given to advance warning signs during construction operations in order to keep lane assignments consistent with barricade placement at all times. The Contractor will be required to cover all traffic control devices which are inconsistent with lane assignment patterns during the transition from one construction stage to another.

Construction signs referring to daytime lane closures during working hours shall be removed or covered during non-working hours.

The Contractor shall be responsible for coordination of all traffic control work on this project with adjoining or overlapping projects and for coordination of barricade placement necessary to provide a uniform traffic detour pattern. When directed by the Engineer, the Contractor will be required to remove all traffic control devices which were furnished, installed, and maintained by him under this contract, and such devices shall remain the property of the Contractor. All traffic control devices shall remain in place until specific authorization for relocation or removal is received from the Engineer.

The Contractor shall ensure that all applicable traffic control devices installed by him are operational 24 hours a day, including Sundays and holidays.

The Contractor shall provide a manned telephone on a continuous 24-hour-a-day basis to receive notification of any deficiencies regarding traffic control and protection and shall dispatch personnel, materials, and equipment to correct any such deficiencies. The Contractor shall be required to respond to any call from the City or Resident Engineer concerning any request for improving or correcting traffic control devices and begin making the requested corrections within two (2) hours from the time of notification.

The Contractor is to plan his work so that there will be no open holes in the pavement and that all barricades have been removed from the pavement during non-working hours. Steel plates over trenches will be permitted; however, they must be of sufficient strength and stability to accommodate all traffic.

The governing factor in the execution and staging of work for this project is to provide the motoring public with the safest possible travel conditions along the roadway through this construction zone. The Contractor shall so arrange his operations as to keep the closing of any lane of the roadway to a minimum. Temporary road closures may be used with the approval of the Engineer. See the Typical Road Closure Detail for road closure requirements.

Basis of Payment. This work will not be paid for separately but will be included in the contract lump sum price for TRAFFIC CONTROL AND PROTECTION (SPECIAL) which cost will include provisions for all labor, materials, transportation, handling, and incidentals necessary to furnish, install, maintain, and remove all traffic control devices indicated in the plans, specifications or required by the Engineer, as specified herein.

Revisions in the phasing of construction or maintenance operations requested by the Engineer may require traffic control to be installed in accordance with standards and/or designs other than those included in the plans. In such cases, the standards and/or design will be made available to the Contractor at least one week in advance of the change in traffic control. Payment for traffic control required by these standards and/or design will be in accordance with Article 109.04 of the Standard Specifications.

Revisions in the phasing of construction or maintenance operations requested by the Contractor may require traffic control to be installed in accordance with standards and/or designs other than those included in the plans. Revisions or modifications to the traffic control shown in the contract shall be submitted by the Contractor for approval by the Engineer.

MAINTENANCE OF ROADWAYS

Description. This work shall consist of maintaining the existing pavement and shoulders for the length of this project.

Construction Requirements. Beginning on the date that the Contractor begins work on this project, he shall assume responsibility for the normal maintenance of all existing roadways within the limits of the improvement. This normal maintenance shall include all repair work deemed necessary by the Engineer but shall not include snow removal operations. Traffic control and protection for this work shall be provided by the Contractor as required by the Traffic Control and Protection Special Provision, the plans, and the Engineer.

The work involved in maintaining the existing pavement and shoulders will be paid for separately at the contract unit prices for the various items of work involved, unless otherwise specified elsewhere in these Special Provisions.

Basis of Payment. This work will not be paid for separately but will be included in the contract lump sum price for TRAFFIC CONTROL AND PROTECTION (SPECIAL) which cost will include provisions for all labor, equipment, and materials required to provide roadway maintenance as specified herein.

If items of work have not been provided for in the contract or otherwise specified for payment, such items - including the accompanying traffic control and protection required by the Engineer - will be paid for in accordance with Article 109.04 of the Standard Specifications.

DETOUR SIGNING

Description. This work shall consist of providing, installing, maintaining, and removing the signs shown in the plans for the detour of southbound Latham Street.

Materials. The materials for the signs and posts shall be in accordance with Sections 720 and 729 or 730 of the Standard Specifications insofar as applicable.

Construction Requirements. Signs shall be installed at the locations shown in the plans or as directed by the Engineer and kept covered until the detour is placed in effect. Once the detour is placed in effect, the signs shall be uncovered and barricades placed as shown on the Detour Plan and Detour Detail. All signs, lights, and barricades shall be maintained in working order 24 hours per day, 7 days per week by the Contractor.

When the detour is no longer needed, as approved by the Engineer, the signs shall be covered or removed.

Basis of Payment. This work will not be paid for separately but will be included in the contract lump sum price for TRAFFIC CONTROL AND PROTECTION (SPECIAL), which will be payment in full for providing, installing, maintaining, and removing all signs necessary for the detour shown in the plans.

CONCRETE TRUCK WASHOUT

Description. This work shall consist of providing and maintaining a concrete truck washout to contain concrete liquids when chutes of concrete trucks are rinsed out after delivery of concrete to the construction site. The washout facility functions to consolidate solids for disposal and prevent the runoff of liquids associated with concrete. The plans include details for constructing non-portable facilities.

General Requirements. The Contractor shall submit a plan for his/her proposed concrete truck washout facility to the Engineer for approval at least 10 days prior to the first concrete pour. The concrete truck washout facility shall be in place prior to any delivery of concrete to the construction site. The concrete truck washout shall be located at least 50 feet from storm drain structures, open drainage facilities, or water bodies. Each facility is to be located away from construction traffic or access areas to prevent disturbance or tracking. A sign shall be installed adjacent to each concrete truck washout to inform concrete equipment operators of the designated washout facility.

Design. Two types of concrete truck washout facilities are available for use on this project:

1. Prefabricated portable facilities as approved by the Engineer

2. Non-portable facilities

    a. Above Grade: Constructed using barrier wall and polyethylene sheeting. Barrier walls are constructed to create a berm with a single sheet of 10-mil polyethylene sheeting which is free of holes, tears, or other defects which may compromise the impermeability of the material. Sandbags are used to hold the sheeting in place on top of the berm. Sheeting must extend over the entire basin and berm to prevent discharge of liquids or solids.

    b. Below Grade: Constructed via excavation and the use of polyethylene sheeting and sandbags. A pit is first excavated at a designated location with a single sheet of 10-mil polyethylene sheeting which is free of holes tears, or other defects, which may compromise the impermeability of the material. Sandbags are placed around the perimeter to hold the sheeting in place to prevent discharge of liquids or solids.

3. Size of Concrete Truck Washouts: The number and size of the concrete truck washout facilities is to be determined by the Contractor. It is his/her responsibility to provide enough storage for the excess concrete and water produced from the construction activities.

Inspection, Maintenance and Removal.

1. Concrete truck washout facilities shall be inspected by the Engineer during his/her weekly erosion and sediment control inspection per the requirements of the SWPPP. The inspector is to ensure there are no leaks, spills, and the capacity of the facility has not yet been compromised.

2. Any overflowing of the concrete truck washout onto the ground shall be cleaned up and removed within 24 hours of discovery.

3. If a rain or snow event is forecasted, a non-collapsing, non-water collecting cover shall be placed over the concrete truck washout and secured to prevent accumulation and overflow of the facility.

4. Contents of each facility are not to exceed 75% of the design capacity. If contents reach 75% capacity, discontinue pouring concrete until the facility has been cleaned out.

5. The slurry shall be allowed to evaporate and then be removed from the site in a safe manner, for example with a vacuum truck. All hardened material shall be removed and disposed of properly.

6. If a lined facility is used, immediately replace the liner if it becomes damaged.

7. Remove the concrete truck washout facilities when they are no longer needed and restore the disturbed areas to their original condition.

8. The locations of these facilities and any changes to the locations shall be shown on the SWPPP.

Basis of Payment. This work will be paid for at the contract unit price per lump sum for CONCRETE TRUCK WASHOUT.

CATCH BASINS, SPECIAL

Description. This work shall include furnishing and installing 2' diameter catch basins with type 8 frames and grates and rubber boots for water tight seals near water mains in accordance with Section 602 of the Standards Specifications, the applicable portions of the Standard Specifications for Water and Sewer Construction in Illinois, and the following.

Materials. All catch basins within 10' of existing water main or proposed water main that is not cased will require flexible connectors for pipes according to Article 32-8 of the Standard Specifications for Water and Sewer Construction in Illinois.

Method of Measurement. This work will be measured in place per catch basin installed with flexible connectors.

Basis of Payment. This work will be paid for at the contract unit price per each for CATCH BASINS, SPECIAL which price will include the catch basin, type 8 frame and grate, rubber boot, and all labor, equipment, and materials required to make a complete installation.

FULL-DEPTH RECLAMATION WITH CEMENT

Description. This work shall consist of pulverizing and mixing the existing flexible pavement, base material and/or subgrade soil, cement, and water in accordance with the applicable portions of Section 302 and 352 of the Standard Specifications, as included within this specification, and in conformity with the lines, grades, thickness, and typical cross sections shown on the plans. Cement-treated subgrade shall be constructed in a series of parallel lanes such that longitudinal and transverse joints are minimized.

Equipment. The equipment used shall be capable of pulverizing the existing bituminous pavement to a minimum 95 percent passing a two-inch sieve and mixing it with the underlying aggregate base course and soils by means of rotary mixing to a depth of 17 inches. The mixing machine shall be capable of maintaining a uniform depth of cut and producing a homogeneous and uniformly blended mixture.

General Construction Requirements. The existing bituminous courses shall be pulverized with the underlying base materials and/or subgrade soil to the specified depths and widths in conformance to the Plans and Special Provisions. The asphalt surfacing and underlying base/soil materials shall be pulverized such that 95 percent of the material exclusive of rock and aggregate shall pass a 2-inch sieve, or to the satisfaction of the Engineer. The pulverized material shall be free of roots, sod, weeds, wood and construction debris.

The existing asphalt material is estimated to be between 8" and 10" in depth. The actual depth of pulverization will be determined in the field and may be adjusted to accommodate field conditions, but the minimum depth to be pulverized and mixed shall be 17 inches.

Rubberized crack filler, pavement markers, loop wires, thermoplastic markers and other similar materials shall be removed from the roadway as observed during the pulverization/mixing process. Residual materials that cannot be completely removed from the processed materials may be incorporated into the prepared base if the Contractor can demonstrate that those added materials will not adversely affect the performance of the base. Any such materials retained in the mixture shall be appropriately sized and blended so as not to adversely affect the appearance or strength of the base.

Preparation of Base. Trimming and disposal of excess material, if required, shall be performed on the mixture of pulverized asphalt concrete, base materials and subgrade soil prior to cement treatment. Excess pulverized material is the surplus that results after trimming and grading the pulverized section to the lines and grades shown on the plans. The subgrade should be trimmed sufficiently to allow for the added cement volume, width of base according to plan, proper material compaction, and subsequent layers of leveling and surface course asphalt overlays.

Once this material has been thoroughly mixed and trimmed, it shall be graded to a uniform cross section and compacted with a vibratory roller to a minimum of 95% of a field compacted modified Proctor provided by the Contractor and to the satisfaction of the Engineer. The subgrade stability shall be verified by proof rolling with a fully loaded tandem-axle truck.

Any water necessary to achieve the required compaction shall be furnished by the Contractor.

At locations adjacent to driveways, entrances, or side streets, the base course shall be graded such that the entire thickness of proposed bituminous courses can be placed to match the existing surface of the existing driveway, entrance or side street.

In addition to signing required by the Special Provision for Traffic Control and Protection, ***LOOSE GRAVEL*** **signs (W8-7)** shall be provided in advance of the area being prepared.

Contractor Submittals. At the time of bid, the Contractor shall furnish the following information regarding the subgrade cement treatment to the Engineer. Approval of the cement source and the Contractor (or Subcontractor) performing the subgrade cement treatment is at the discretion of the Engineer.

1. The proposed source and supplier of cement with supplier's certificate of compliance.
2. Description and specifications of the proposed construction equipment, construction methods, expected production rates, and planned sequence of subgrade treatment.
3. Prior soil-cement project experience of the Contractor (or Subcontractor) performing the subgrade cement treatment.
4. Quality Control Plan detailing testing and inspection procedures on the cement treatment that will ensure compliance with the project specifications.
5. During the cement treatment work, the Contractor shall furnish the following information to the City on a daily basis:
    a. Certified weight tickets of cement delivered to the site and spread and mixed into the subgrade.
    b. A summary of the quantity of cement used each day, areas treated and compacted, and areas with curing completed.

Application. Cement shall be distributed with a non-pressurized mechanical vane-feed spreader equipped with on-board scales and controls capable of spreading the cement at a prescribed weight per unit area. Cement shall not be spread upon the prepared material more than 2 hours prior to the mixing operation. No traffic other than the mixing equipment shall be allowed to pass over the spread cement until the mixing operation is completed.

Cement shall be applied at a rate of not less than 6.25 percent based on the in-place dry unit weight of soil and for the depth of subgrade treatment shown on the plans to achieve a 500 psi compressive strength for the cement treated subbase. For estimating purposes, an in-place dry unit weight of soil of 125 pcf should be used as a basis for the application rate. The contractor shall verify dry unit weight prior to distribution of the cement.

The cement content shall vary no more than 0.5 percent under and not more than 1.0 percent over the specified cement content (example: tolerance on spread rate of 6.25% is 5.75% to 6.75%).

However, the moving average of the rate of cement content tests/inspections shall not be less than the specified cement content. The Engineer reserves the right to increase the rate of application of cement from the specified rate during the progress of construction as necessary to maintain the desired characteristic of the stabilized subgrade.

Mixing. Mixing of the soil, cement, and water shall be done with a four-wheel drive rotary mixer. The mixing machine shall have equipment provisions for introducing water at the time of mixing through a metering device.

The full depth of the treated subgrade shall be mixed a minimum of two times with the approved mixing machine. At least one of the two mixes shall be done while introducing water into the soil through the metering device on the mixer. Water shall be added to the subgrade during mixing to provide a moisture content not less than 3 percentage points below nor more than one percentage point above (-1 to +3 of OMC) the optimum moisture of the soil-cement mixture to ensure chemical action of the cement and soil.

Finishing and Curing. After the final layer of cement treated subgrade has been compacted, it shall be brought to the required lines and grades in accordance with the plans, and shall be kept moist. The completed section shall then be finished by rolling with a steel drum or other suitable roller approved by the Engineer. However, trimming (cuts only) can be completed within 24 hours of mixing.

The completed cement treated subgrade shall be surfaced with a curing seal consisting of SS or CSS grade asphalt emulsion at a rate of 0.12 to 0.20 gallons per square yard of surface until completion of micro-cracking. The cement treated subgrade

shall be kept free from heavy traffic during the curing period or until the asphalt concrete surfacing is placed whichever is less, unless otherwise directed by the Engineer.

Should additional curing be required, curing shall continue in accordance with Section 3-1.5, unless otherwise directed by the Engineer.

Maintenance and Repair. The Contractor shall maintain, at his/her own expense, the entire cement treated subgrade in good condition from the start of work until all the work has been completed, cured, and accepted by the Engineer. If the soil-cement is damaged, it shall be repaired by removing and replacing the entire depth of affected layers in the damaged area. Feathering shall not be permitted for repair of low areas.

Method of Measurement. This work will be measured in place and the area computed in square yards. PORTLAND CEMENT will be measured for payment in tons, but payment will not be made for cement more than 105 percent of the amount specified by the Engineer.

Basis of Payment. This work will be paid for at the contract unit price per square yard for FULL-DEPTH RECLAMATION WITH CEMENT, and will include all costs for all pulverizing, and mixing of the existing pavement and underlying materials; verifying unit weight of pulverized material, for all water; for all spreading, compacting and trimming to the proper grade as shown on the plans and as specified; for all haul away of all excess pulverized and cement treated material; curing, protection and sealing of the cement treated subgrade. PORTLAND CEMENT will be paid for at the contract unit price per ton.

HOT-MIX ASPHALT DRIVEWAY PAVEMENT, 4”

Description. This work shall consist of constructing a driveway of hot-mix asphalt surface and binder courses on an aggregate base. The work shall be done in accordance with applicable portions of Sections 351 and 406 of the Standard Specifications and the following provisions.

Materials. The material for the aggregate base course shall be CA 6 course aggregate meeting the requirements of Article 1004.04 of the Standard Specifications.

Construction Requirements. All driveways being reconstructed shall contain a reconstructed aggregate subbase in accordance with the details for driveways shown in the plans unless otherwise specified by the Engineer. Prior to placement of the PCC material, the aggregate base shall be placed, shaped and compacted to the satisfaction of the Engineer.

The driveway shall be constructed with a minimum 6 inches of aggregate base course, 2¼ inches of binder course and 1¾ inches of surface course.

Method of Measurement. This work will be measured in place and the area calculated in square yards.

Basis of Payment. This work will be paid for at the contract unit price per square yard for HOT-MIX ASPHALT DRIVEWAY PAVEMENT, 4”, which price will include all labor, material, equipment, and incidentals necessary.

Removal of existing aggregate subbase and soil to reach the required subgrade depth will be included in the DRIVEWAY PAVEMENT REMOVAL item unit cost.

Aggregate material required to provide a new subbase will be paid for by SUBBASE GRANULAR MATERIAL, TYPE B of the specified depth.

STORM SEWER, WATER MAIN QUALITY PIPE

Description. This work shall be done in accordance with Section 550 and 561 of the Standard Specifications insofar as applicable, the applicable portions of the Standard Specifications for Water and Sewer Construction in Illinois, and the following provisions.

Materials. Materials shall be concrete pressure pipe, ductile iron pipe, or plastic pipe as follows:

Concrete pressure pipe shall be in accordance with Section 550 of the Standard Specifications and Article 40-2.01A of the Standard Specifications for Water and Sewer Construction in Illinois.

Ductile Iron Pipe:

1. Bell and spigot pipe: American National Standard. ANSI A21.51 (AWWA C151) Class 52.
2. Pit casted pipe shall not be allowed.
3. Pipe and fittings shall have an outside bituminous coating with an inside cement lining in accordance with American Standard's Association A.S.A. A21.4 (AWWA C104) Specifications.
4. Shall have a rated working pressure of three hundred fifty (350) psi plus a surge allowance of one hundred (100) psi. Thickness design shall be in conformance with ANSI/AWWA C150 requirements.
5. Pipe joints shall be mechanical joint or push on joint ductile iron pipe and fittings in accordance with A.S.A. A21.11 (AWWA C111). Retainer glands shall be required on all fittings.

Plastic pipe shall be in accordance with Article 40-2.01C of the Standard Specifications for Water and Sewer Construction in Illinois.

Basis of Payment. This work will be paid for at the contract unit price per foot for STORM SEWER, WATER MAIN QUALITY PIPE of the type and size specified, which price will include all labor, materials, and equipment necessary to complete this item in accordance with the plans and specifications.

SANITARY SEWER

Description. This work shall consist of constructing sanitary sewer in accordance with the applicable portions of Section 551 of the Standard Specifications, the Standard Specifications for Water and Sewer Construction in Illinois, and the following provisions.

Materials. All sanitary sewer pipe shall be polyvinyl chloride (PVC) conforming to ASTM 3034 type PSM for sizes 4" – 15" and ASTM F-679 (lattest edition) for sizes 18" – 27". The pipe shall have a minimum standard dimension ratio (SDR) of 26 and a minimum cell classification of 12454-B or 12364-C conforming to ASTM D 1784. All joints shall contain flexible elastomeric seals and conform to ASTM D 3212 and F 477.

Method of Measurement. Sanitary sewer pipe will be measured in place per foot. No deductions in length will be made for tees, fittings, or manholes. Where sanitary sewers are connected to manholes or special structures, the length of sanitary sewer shall extend to the nearest inside wall of the manhole or special structure.

Basis of Payment. This work will be paid for at the contract unit price per foot for SANITARY SEWER of the size specified, which price will include all labor, materials, equipment, and fittings necessary to complete this item in accordance with the plans and specifications.

WATER SERVICES CONNECTION (SHORT AND LONG)

Description: This work shall consist of furnishing and installing new water service lines, corporation stops and saddles, and curb stops and boxes of the required size and removing existing curb stops and boxes in accordance with Section 562 of the Standard Specifications, the applicable portions of the Standard Specifications for Water and Sewer Construction in Illinois, the details in the plans, and the provisions herein.

Materials. Corporation stops, curb stops, curb boxes, and copper tubing shall meet the following criteria:

Corporation Stops:
Corporation Valves shall meet the requirements of Section 40-2.06C of the Standard Specifications for Water and Sewer Construction in Illinois, AWWA C800 and the following.

- Inlet Connection: AWWA Taper Thread
- Outlet Connection: Compression Fitting
- Approved Manufacturers:
  - Mueller
  - A.Y. McDonald
  - Ford Meter Box

Curb Stop:
Curb Valves shall meet the requirements of Section 40-2.06C of the Standard Specifications for Water and Sewer Construction in Illinois, AWWA C800 and the following.

- Quarter Turn Check
- Minneapolis top thread pattern
- Inlet Connection: Compression Fitting
- Outlet Connection: Compression Fitting
- Approved Manufacturers:
  - Mueller
  - A.Y. McDonald
  - Ford Meter Box

Copper Tubing shall be 1” Minimum Diameter Type K Soft Copper Tubing in accordance with Section 40-2.06A of the Standard Specifications for Water and Sewer Construction in Illinois.

Curb Box – Curb boxes to be extension type.

- Minimum ±6” of adjustment (72” long to 60” long for 5’-6” cover)
- Minneapolis base thread pattern
- Cast iron construction with brass pentagon plug

The Contractor shall provide catalog cuts for all appurtenant items for water services prior to the start of construction.

Construction Requirements. The Contractor shall provide and install Type K copper service pipe, a curb stop, a corporation stop, and curb box for each service as shown on the plans and in standard drawing No. 17. Exact existing service diameters are unknown, however, the plans contain pay items for 1”, 1-1/2” and 2” service diameters in order to account for differences in service sizes. All water service taps are to be 1” minimum in diameter. The Contractor shall make efforts to determine the existing service size before installing the new service. The Contractor may install the largest diameter service size at his choosing to be reduced down at the curb stop. However, each service shall be paid for with the pay item that equals the existing service diameter at the curb stop. All water service lines and corporation stops shall be installed at a minimum depth of 5.5 feet and shall be continuous without joints from the corporation stop to the curb stop. Compression type fittings with stainless steel inserts shall be used at all applicable fittings. Flare fittings shall not be accepted.

Tapping saddles for ductile iron pipe shall be used for each service tap. Tapping saddles shall be installed a minimum of 3 feet from the edge of the saddle to any pipe joint or other saddle. Multiple taps into the water main shall be no closer than 1’-6” apart.

Selected granular backfill material shall be used where the trench is in existing or proposed pavements and for all trenches outside of existing or proposed pavements where the inner edge of the trench is within two (2) feet of the edge of the pavements, curb, gutter, curb and gutter, stabilized shoulder, or sidewalk. Where selected granular material is not required, suitable material excavated from the trench may be used. All trench backfill in required locations shall be CA-6 crushed stone or crushed gravel and compacted to 90% of modified proctor. Backfilling shall be in accordance with Section 20 of the Standard Specifications for Water and Sewer Construction in Illinois, Method 1 only deposited in uniform layers not exceeding six (6) inches thick (loose material). Each layer shall be compacted. Locations where trenches cross the road shall contain trench backfill that is brought up to existing grade in order to maintain vehicular access.

Proposed water services shall be installed out of driveways where possible. The letter “W” shall be imprinted in the curb at the location of all water service crossings.

All water service taps shall require a minimum of forty-eight hours’ notice to the City Water Department to have time to properly notify residents. No existing water service may be shut down without consent of the Engineer and/or the City. The City or the Engineer shall be present to witness the service taps. An Illinois licensed plumber shall be required to be present during, and to inspect, all proposed water service line connections to existing water service lines and water mains.

Method of Measurement. Water service lines will be measured for payment per each service connection.

Basis of Payment. This work will be paid for at the contract unit price per each for WATER SERVICE (SHORT) on the short side of the proposed water main and WATER SERVICE CONNECTION (LONG) on the long side of the proposed water main which price will include the cost of all copper tubing, corporation stop, curb stop, curb box, fittings, connections, saddle, service clamps, tapping, blocking, pavement removal, trench excavation, trench backfill and all labor (including any hand digging), materials, and equipment to make a complete and finished installation.

1B

STATUS OF UTILITIES TO BE ADJUSTED

(Effective January 1, 2007; Revised January 24, 2011)

Name & Address of Utility	Type	Location	Estimated Date Relocation Complete
Comcast Cable 688 Industrial Drive Elhurst, IL 60126	Underground Cable TV	West side Latham St (Entire Project Limits) East side Latham St (Center – 3rd, 5th – 6th, & Arnold – n/o Bender)	
ComED Public Relocation Center One Lincoln Center, Suite 600 Oakbrook Terrace, IL 60181	Aerial Wire	West side Latham St (Project Limits)	
ComED Public Relocation Center One Lincoln Center, Suite 600 Oakbrook Terrace, IL 60181	Underground Cable	West side Latham St (Knights - Sandhurst) East side Latham St (Bender – Sandhurst)	
Frontier Communications 112 W Elm Street Sycamore, IL. 60178	Aerial Cable	East side Latham St (Center to Arnold)	
Frontier Communications 112 W Elm Street Sycamore, IL. 60178	Underground Cable	East side Latham St (Project Limits)	
Frontier Communications 112 W Elm Street Sycamore, IL. 60178	Underground Fiber Optic	East side Latham St (Project Limits)	
Metro Fibernet 3701 Communications Way Evansville, IN. 47715	Underground Fiber Optic	East side Latham St (Center – 4th)	
Metro Fibernet 3701 Communications Way Evansville, IN. 47715	Aerial Fiber Optic	East side Latham St (4th – n/o Taylor) West side Latham St (Center – n/o Knights)	
Nicor Gas 1844 Ferry Rd. Naperville, IL 60563	Underground Gas	West side Latham St (Center – 4th, Allen – Project Limit)	

		East side Latham St (4th - Allen)	
WIN Technology 4955 Bullis Farm Rd Eau Claire, WI. 54701	Underground Fiber Optic	East side Latham St (Center – 3rd)	
Windstream KDL 385 W Oak Street Coal City, IL 60416	Underground Fiber Optic	East side Latham St (3rd - Pleasant) West side Latham St (Pleasant – Project Limit)	

The above represents the best information of the Department and is only included for the convenience of the bidder. The applicable provisions of Section 102 and Articles 105.07, 107.20, 107.37, 107.38, 107.39, 107.40, and 108.02 of the Standard Specifications for Road and Bridge Construction shall apply.

The estimated utility relocation dates should be part of the progress schedule submitted by the Contractor.

1L

COMPLETION DATE

(Effective February 16, 2001; Revised August 15, 2005)

All work associated with this project shall be completed on or before September 2, 2022.

2E

EXPLORATION TRENCH, SPECIAL

(Revised January 1, 2007)

This work shall consist of constructing a trench for the purpose of verifying clearances and locations of existing utilities and storm sewers. The exploration trench shall be constructed at the locations directed by the Engineer.

The depth of the trench shall be variable. The width of the trench shall be sufficient to allow proper investigation of the entire trench.

After the trench has been inspected by the Engineer. The excavated material shall be used to backfill the trench in a manner satisfactory to the Engineer. Any excess materials shall be disposed of according to Article 202.03 of the Standard Specifications.

This work will be paid for at the contract unit price per foot (meter) for EXPLORATION TRENCH, SPECIAL.

7S

TEMPORARY INFORMATION SIGNING

(Effective: September 24, 2013, Revised July 31, 2020)

Description. This work shall consist of the furnishing, installation, maintenance, and removal of temporary information signs.

Materials. Materials shall be according to the applicable portions of Section 701 of the Standard Specifications and as shown on the plans.

Construction Requirements. The temporary information signs shall be in place at least one week prior to the beginning of construction activities that impact traffic flow and shall remain in place until the completion of the project. If all lanes are open for an extended period of time during the project the Contractor shall cover the signs until lane closures resume. If the project is shut down for the winter the signs shall read “Road Work Resumes Spring XXXX”.

Signs shall be installed according to the requirements of Section 701.

Method of Measurement: This work will be measured for payment in square feet in place. The auxiliary sign panel will not be measured for payment.

Basis of Payment. This work will be paid for at the contract unit price per square foot for TEMPORARY INFORMATION SIGNING.

State of Illinois
Department of Transportation
Bureau of Local Roads and Streets

SPECIAL PROVISION FOR INSURANCE

Effective: February 1, 2007
Revised: August 1, 2007

All references to Sections or Articles in this specification shall be construed to mean specific Section or Article of the Standard Specifications for Road and Bridge Construction, adopted by the Department of Transportation.

The Contractor shall name the following entities as additional insured under the Contractor's general liability insurance policy in accordance with Article 107.27:

City of Sandwich

The entities listed above and their officers, employees, and agents shall be indemnified and held harmless in accordance with Article 107.26.

State of Illinois
DEPARTMENT OF TRANSPORTATION
Bureau of Local Roads & Streets
SPECIAL PROVISION
FOR
LOCAL QUALITY ASSURANCE/ QUALITY MANAGEMENT QC/QA
Effective: January 1, 2022

Replace the first five paragraphs of Article 1030.06 of the Standard Specifications with the following:

"**1030.06 Quality Management Program.** The Quality Management Program (QMP) will be Quality Control / Quality Assurance (QC/QA) according to the following."

Delete Article 1030.06(d)(1) of the Standard Specifications.

Revise Article 1030.09(g)(3) of the Standard Specifications to read:

"(3) If core testing is the density verification method, the Contractor shall provide personnel and equipment to collect density verification cores for the Engineer. Core locations will be determined by the Engineer following the document "Hot-Mix Asphalt QC/QA Procedure for Determining Random Density Locations" at density verification intervals defined in Article 1030.09(b). After the Engineer identifies a density verification location and prior to opening to traffic, the Contractor shall cut a 4 in. (100 mm) diameter core. With the approval of the Engineer, the cores may be cut at a later time."

Revise Article 1030.09(h)(2) of the Standard Specifications to read:

"(2) After final rolling and prior to paving subsequent lifts, the Engineer will identify the random density verification test locations. Cores or nuclear density gauge testing will be used for density verification. The method used for density verification will be as selected below.

Density Verification Method	
☐	Cores
☑	Nuclear Density Gauge (Correlated when paving ≥ 3,000 tons per mixture)

Density verification test locations will be determined according to the document "Hot-Mix Asphalt QC/QA Procedure for Determining Random Density Locations". The density testing interval for paving wider than or equal to 3 ft (1 m) will be 0.5 miles (800 m) for lift thicknesses of 3 in. (75 mm) or less and 0.2 miles (320 m) for lift thicknesses greater than 3 in. (75 mm). The density testing interval for paving less than 3 ft (1 m) wide will be 1 mile (1,600 m). If a day's paving will be less than the prescribed density testing interval, the length of the day's paving will be the interval for that day. The density testing interval for mixtures used for patching will be 50 patches with a minimum of one test per mixture per project.

If core testing is the density verification method, the Engineer will witness the Contractor coring, and secure and take possession of all density samples at the

density verification locations. The Engineer will test the cores collected by the Contractor for density according to Illinois Modified AASHTO T 166 or AASHTO T 275.

If nuclear density gauge testing is the density verification method, the Engineer will conduct nuclear density gauge tests. The Engineer will follow the density testing procedure detailed in the document "Illinois Modified ASTM D 2950, Standard Test Method for Density of Bituminous Concrete In-Place by Nuclear Method".

A density verification test will be the result of a single core or the average of the nuclear density tests at one location. The results of each density test must be within acceptable limits. The Engineer will promptly notify the Contractor of observed deficiencies."

Revise the seventh paragraph and all subsequent paragraphs in Section D. of the document "Hot-Mix Asphalt QC/QA Initial Daily Plant and Random Samples" to read:

"Mixtures shall be sampled from the truck at the plant by the Contractor following the same procedure used to collect QC mixture samples (Section A). This process will be witnessed by the Engineer who will take custody of the verification sample. Each sample bag with a verification mixture sample will be secured by the Engineer using a locking ID tag. Sample boxes containing the verification mixture sample will be sealed/taped by the Engineer using a security ID label."

Illinois Department of Transportation

Storm Water Pollution Prevention Plan

Route	Marked Route	Section Number
Latham Street	F.A.U. 5414	20-00046-00-FP
Project Number	**County**	**Contract Number**
5B33(714)	DeKalb	87763

This plan has been prepared to comply with the provisions of the National Pollutant Discharge Elimination System (NPDES) Permit No. ILR10 (Permit ILR10), issued 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.

Signature	Date
Nicholas Piekarski	10-25-2021

Print Name	Title	Agency
Nicholas Piekarski	Project Manager	Hampton, Lenzini & Renwick, Inc.

Note: Guidance on preparing each section of BDE 2342 can be found in Chapter 41 of the IDOT Bureau of Design and Environment (BDE) Manual. Chapter 41 and this form also reference the IDOT Drainage Manual which should be readily available.

I. Site Description:

A. Provide a description of the project location; include latitude and longitude, section, town, and range:

Roadway Improvements at Township 37 North, Range 5 East, Section 25

B. Provide a description of the construction activity which is the subject of this plan. Include the number of construction stages, drainage improvements, in-stream work, installation, maintenance, removal of erosion measures, and permanent stabilization:

Reconstruction of roadway with full-depth reclamation, water main upsizing and storm sewer installation. Ditch regrading, erosion control blankets also included

C. Provide the estimated duration of this project:

120 days

D. The total area of the construction site is estimated to be 7.89 acres.

The total area of the site estimated to be disturbed by excavation, grading or other activities is 7.89 acres.

E. The following are weighted averages of the runoff coefficient for this project before and after construction activities are completed; see Section 4-102 of the IDOT Drainage Manual:

0.55

F. List all soils found within project boundaries; include map unit name, slope information, and erosivity:

154A Flanagan Silt Loam 0-2% slopes; 171A Catlin Silt Loam 0-2% slopes; 356A Elpaso Silty Clay Loam 0-2% slopes

G. If wetlands were delineated for this project, provide an extent of wetland acreage at the site; see Phase I report:

None delineated

H. Provide a description of potentially erosive areas associated with this project:

Ditches alongside roadway throughout the project during construction operations

I. The following is a description of soil disturbing activities by stages, their locations, and their erosive factors (e.g., steepness of slopes, length of slopes, etc.):

Installation of water main in parkway, installation of storm sewer in parkway. Grading and reshaping ditches. Adding shoulders and replacing sidewalk

J. See the erosion control plans and/or drainage plans for this contract for information regarding drainage patterns, approximate slopes anticipated before and after major grading activities, locations where vehicles enter or exit the site and controls to prevent offsite sediment tracking (to be added after contractor identifies locations), areas of soil disturbance, the location of major structural and non-structural controls identified in the plan, the location of areas where stabilization practices are expected to occur, surface waters (including wetlands) , and locations where storm water is discharged to surface water including wetlands.

K. Identify who owns the drainage system (municipality or agency) this project will drain into:

City of Sandwich

L. The following is a list of General NPDES ILR40 permittees within whose reporting jurisdiction this project is located:

Sandwich

M. The following is a list of receiving water(s) and the ultimate receiving water(s) for this site. In addition, include receiving waters that are listed as Biologically Significant Streams by the Illinois Department of Natural Resources (IDNR). The location of the receiving waters can be found on the erosion and sediment control plans:

Drainage to local storm sewer system, eventually drains to Fox River

N. Describe areas of the site that are to be protected or remain undisturbed. These areas may include steep slopes (i.e., 1:3 or steeper), highly erodible soils, streams, stream buffers, specimen trees, natural vegetation, nature preserves, etc. Include any commitments or requirements to protect adjacent wetlands.

For any storm water discharges from construction activities within 50-feet of Waters of the U.S. (except for activities for water-dependent structures authorized by a Section 404 permit, describe: a) How a 50-foot undisturbed natural buffer will be provided between the construction activity and the Waters of the U.S. or b) How additional erosion and sediment controls will be provided within that area.

NA

O. Per the Phase I document, the following sensitive environmental resources are associated with this project and may have the potential to be impacted by the proposed development. Further guidance on these resources is available in Section 41-4 of the BDE Manual.

NA

☐ 303(d) Listed receiving waters for suspended solids, turbidity, or siltation.
The name(s) of the listed water body, and identification of all pollutants causing impairment:

NA

Provide a description of how erosion and sediment control practices will prevent a discharge of sediment resulting from a storm event equal to or greater than a twenty-five (25) year, twenty-four (24) hour rainfall event:

NA

Provide a description of the location(s) of direct discharge from the project site to the 303(d) water body:

NA

Provide a description of the location(s) of any dewatering discharges to the MS4 and/or water body:

NA

☐ Applicable Federal, Tribal, State, or Local Programs

NA

☐ Floodplain

NA

☐ Historic Preservation

NA

☐ Receiving waters with Total Maximum Daily Load (TMDL) for sediment, total suspended solids, turbidity or siltation

TMDL (fill out this section if checked above)

The name(s) of the listed water body:

NA

Provide a description of the erosion and sediment control strategy that will be incorporated into the site design that is consistent with the assumptions and requirements of the TMDL:

NA

If a specific numeric waste load allocation has been established that would apply to the project's discharges, provide a description of the necessary steps to meet that allocation:

NA

☐ Threatened and Endangered Species/Illinois Natural Areas (INAI)/Nature Preserves

NA

☐ Other

NA

☐ Wetland

NA

P. The following pollutants of concern will be associated with this construction project:

- ☐ Antifreeze / Coolants
- ☒ Concrete
- ☒ Concrete Curing Compounds
- ☒ Concrete Truck Waste
- ☒ Fertilizers / Pesticides
- ☐ Paints
- ☒ Petroleum (gas, diesel, oil, kerosene, hydraulic oil / fluids)
- ☒ Soil Sediment
- ☒ Solid Waste Debris
- ☐ Solvents
- ☒ Waste water from cleaning construction equipments
- ☐ Other (Specify) _____
- ☐ Other (Specify) _____
- ☐ Other (Specify) _____
- ☐ Other (Specify) _____
- ☐ Other (Specify) _____

II. Controls:

This section of the plan addresses the controls that will be implemented for each of the major construction activities described in Section I.C above and for all use areas, borrow sites, and waste sites. For each measure discussed, the Contractor will be responsible for its implementation as indicated. The Contractor shall provide to the Resident Engineer a plan for the implementation of the measures indicated. The Contractor, and subcontractors, will notify the Resident Engineer of any proposed changes, maintenance, or modifications to keep construction activities compliant with the Permit ILR10. Each such Contractor has signed the required certification on forms which are attached to, and are a part of, this plan:

A. **Erosion and Sediment Controls:** At a minimum, controls must be coordinated, installed and maintained to:

1. Minimize the amount of soil exposed during construction activity;
2. Minimize the disturbance of steep slopes;
3. Maintain natural buffers around surface waters, direct storm water to vegetated areas to increase sediment removal and maximize storm water infiltration, unless infeasible;
4. Minimize soil compaction and, unless infeasible, preserve topsoil.

B. **Stabilization Practices:** Provided below is a description of interim and permanent stabilization practices, including site- specific scheduling of the implementation of the practices. Site plans will ensure that existing vegetation is preserved where attainable and disturbed portions of the site will be stabilized. Stabilization practices may include but are not limited to: temporary seeding, permanent seeding, mulching, geotextiles, sodding, vegetative buffer strips, protection of trees, preservation of mature vegetation, and other appropriate measures. Except as provided below in II.B.1 and II.B.2, stabilization measures shall be initiated **immediately** where construction activities have temporarily or permanently ceased, but in no case more than **one (1) day** after the construction activity in that portion of the site has temporarily or permanently ceases on all disturbed portions of the site where construction will not occur for a period of fourteen (14) or more calendar days.

1. Where the initiation of stabilization measures is precluded by snow cover, stabilization measures shall be initiated as soon as practicable.

2. On areas where construction activity has temporarily ceased and will resume after fourteen (14) days, a temporary stabilization method can be used.

The following stabilization practices will be used for this project:

- ☒ Erosion Control Blanket / Mulching
- ☐ Geotextiles
- ☒ Permanent Seeding
- ☐ Preservation of Mature Seeding
- ☐ Protection of Trees
- ☐ Sodding
- ☐ Temporary Erosion Control Seeding
- ☐ Temporary Turf (Seeding, Class 7)
- ☐ Temporary Mulching
- ☐ Vegetated Buffer Strips
- ☐ Other (Specify) _____
- ☐ Other (Specify) _____
- ☐ Other (Specify) _____
- ☐ Other (Specify) _____

Describe how the stabilization practices listed above will be utilized during construction:

Erosion control blankets will be used to reduce erosion in the ditches alongside the roadway until permanent vegetation is established

Describe how the stabilization practices listed above will be utilized after construction activities have been completed:

Permanent seeding will be placed in the ditches alongside the roadway after the grading and shaping of the ditches.

C. **Structural Practices:** Provided below is a description of structural practices that will be implemented, to the degree attainable, to divert flows from exposed soils, store flows or otherwise limit runoff and the discharge of pollutants from exposed areas of the site. Such practices may include but are not limited to: perimeter erosion barrier, earth dikes, drainage swales, sediment traps, ditch checks, subsurface drains, pipe slope drains, level spreaders, storm drain inlet protection, rock outlet protection, reinforced soil retaining systems, gabions, and temporary or permanent sediment basins. The installation of these devices may be subject to Section 404 of the Clean Water Act.

- ☐ Aggregate Ditch
- ☐ Concrete Revetment Mats
- ☐ Dust Suppression
- ☐ Dewatering Filtering
- ☐ Gabions
- ☐ In-Stream or Wetland Work
- ☐ Level Spreaders
- ☐ Paved Ditch
- ☐ Permanent Check Dams
- ☐ Perimeter Erosion Barrier
- ☐ Permanent Sediment Basin
- ☐ Retaining Walls
- ☐ Riprap
- ☐ Rock Outlet Protection
- ☐ Sediment Trap
- ☒ Storm Drain Inlet Protection
- ☐ Stabilized Construction Exits
- ☐ Stabilized Trench Flow
- ☐ Slope Mattress
- ☐ Slope Walls
- ☒ Temporary Ditch Check
- ☐ Temporary Pipe Slope Drain
- ☐ Temporary Sediment Basin
- ☐ Temporary Stream Crossing
- ☐ Turf Reinforcement Mats
- ☒ Other (Specify) Concrete Washout
- ☐ Other (Specify) _____
- ☐ Other (Specify) _____
- ☐ Other (Specify) _____
- ☐ Other (Specify) _____
- ☐ Other (Specify) _____
- ☐ Other (Specify) _____

Describe how the structural practices listed above will be utilized during construction:

Inlet filters, as well as inlet and pipe protection when necessary, will be used on all inlets within the project boundaries. Temporary ditch checks will be placed along the roadway throughout the project as denoted on the erosion control plans. Concrete washout bins will be used to isolate & manage concrete washout waste

Describe how the structural practices listed above will be utilized after construction activities have been completed:

NA

D. **Treatment Chemicals**

Will polymer flocculants or treatment chemicals be utilized on this project: ☐ Yes ☒ No

If *yes* above, identify where and how polymer flocculants or treatment chemicals will be utilized on this project.

NA

E. **Permanent (i.e., Post-Construction) Storm Water Management Controls:** Provided below is a description of measures that will be installed during the construction process to control volume and pollutants in storm water discharges that will occur after construction operations have been completed.The installation of these devices may be subject to Section 404 of the Clean Water Act.

1. Such practices may include but are not limited to: storm water detention structures (including wet ponds), storm water retention structures, flow attenuation by use of open vegetated swales and natural depressions, infiltration of runoff on site, and sequential systems (which combine several practices).

   The practices selected for implementation were determined based on the technical guidance in Chapter 41 (Construction Site Storm Water Pollution Control) of the IDOT BDE Manual. If practices other than those discussed in Chapter 41 are selected for implementation or if practices are applied to situations different from those covered in Chapter 41, the technical basis for such decisions will be explained below.

2. Velocity dissipation devices will be placed at discharge locations and along the length of any outfall channel as necessary to provide a non-erosive velocity flow from the structure to a water course so that the natural physical and biological characteristics and functions are maintained and protected (e.g., maintenance of hydrologic conditions such as the hydroperiod and hydrodynamics present prior to the initiation of construction activities).

Description of permanent storm water management controls:

Ditches alongside the roadway increase infiltration

F. **Approved State or Local Laws:** The management practices, controls and provisions contained in this plan will be in accordance with IDOT specifications, which are at least as protective as the requirements contained in the IEPA's Illinois Urban Manual. Procedures and requirements specified in applicable sediment and erosion site plans or storm water management plans approved by local officials shall be described or incorporated by reference in the space provided below. Requirements specified in sediment and erosion site plans, site permits, storm water management site plans or site permits approved by local officials that are applicable to protecting surface water resources are, upon submittal of an NOI, to be authorized to discharge under the Permit ILR10 incorporated by reference and are enforceable under this permit even if they are not specifically included in the plan.

Description of procedures and requirements specified in applicable sediment and erosion site plans or storm water management plans approved by local officials:

NA

G. **Contractor Required Submittals:** Prior to conducting any professional services at the site covered by this plan, the Contractor and each subcontractor responsible for compliance with the permit shall submit to the Resident Engineer a Contractor Certification Statement, BDE 2342A.

1. The Contractor shall provide a construction schedule containing an adequate level of detail to show major activities with implementation of pollution prevention BMPs, including the following items:
   - Approximate duration of the project, including each stage of the project
   - Rainy season, dry season, and winter shutdown dates
   - Temporary stabilization measures to be employed by contract phases
   - Mobilization time-frame
   - Mass clearing and grubbing/roadside clearing dates
   - Deployment of Erosion Control Practices

- Deployment of Sediment Control Practices (including stabilized cons

- Deployment of Construction Site Management Practices (including concrete washout facilities, chemical storage, refueling locations, etc.)
- Paving, saw-cutting, and any other pavement related operations
- Major planned stockpiling operation
- Time frame for other significant long-term operations or activities that may plan non-storm water discharges as dewatering, grinding, etc
- Permanent stabilization activities for each area of the project

2. During the pre-construction meeting, the Contractor and each subcontractor shall provide, as an attachment to their signed Contractor Certification Statement, a discussion of how they will comply with the requirements of the permit in regard to the following items and provide a graphical representation showing location and type of BMPs to be used when applicable:
   - Temporary Ditch Checks - Identify what type and the source of Temporary Ditch Checks that will be installed as part of the project. The installation details will then be included with the SWPPP.
   - Vehicle Entrances and Exits - Identify type and location of stabilized construction entrances and exits to be used and how they will be maintained.
   - Material Delivery, Storage and Use - Discuss where and how materials including chemicals, concrete curing compounds, petroleum products, etc. will be stored for this project.
   - Stockpile Management - Identify the location of both on-site and off-site stockpiles. Discuss what BMPs will be used to prevent pollution of storm water from stockpiles.
   - Waste Disposal - Discuss methods of waste disposal that will be used for this project.
   - Spill Prevention and Control - Discuss steps that will be taken in the event of a material spill (chemicals, concrete curing compounds, petroleum, etc.)
   - Concrete Residuals and Washout Wastes - Discuss the location and type of concrete washout facilities to be used on this project and how they will be signed and maintained.
   - Litter Management - Discuss how litter will be maintained for this project (education of employees, number of dumpsters, frequency of dumpster pick-up, etc.).
   - Vehicle and Equipment Fueling - Identify equipment fueling locations for this project and what BMPs will be used to ensure containment and spill prevention.
   - Vehicle and Equipment Cleaning and Maintenance - Identify where equipment cleaning and maintenance locations for this project and what BMPs will be used to ensure containment and spill prevention.
   - Dewatering Activities - Identify the controls which will be used during dewatering operations to ensure sediments will not leave the construction site.
   - Polymer Flocculants and Treatment Chemicals - Identify the use and dosage of treatment chemicals and provide the Resident Engineer with Material Safety Data Sheets. Describe procedures on how the chemicals will be used and identify who will be responsible for the use and application of these chemicals. The selected individual must be trained on the established procedures.
   - Additional measures indicated in the plan.

III. Maintenance:

When requested by the Contractor, the Resident Engineer will provide general maintenance guides (e.g., IDOT Erosion and Sediment Control Field Guide) to the Contractor for the practices associated with this project. Describe how all items will be checked for structural integrity, sediment accumulation and functionality. Any damage or undermining shall be repaired immediately. Provide specifics on how repairs will be made. The following additional procedures will be used to maintain, in good and effective operating conditions, the vegetation, erosion and sediment control measures and other protective measures identified in this plan. It will be the Contractor's responsibility to attain maintenance guidelines for any manufactured BMPs which are to be installed and maintained per manufacture's specifications.

NA

IV. Inspections:

Qualified personnel shall inspect disturbed areas of the construction site including Borrow, Waste, and Use Areas, which have not yet been finally stabilized, structural control measures, and locations where vehicles and equipment enter and exit the site using IDOT Storm Water Pollution Prevention Plan Erosion Control Inspection Report, BC 2259. Such inspections shall be conducted at least once every seven (7) calendar days and within twenty-four (24) hours of the end of a storm or by the end of the following business or work day that is 0.5 inch or greater or equivalent snowfall.

Inspections may be reduced to once per month when construction activities have ceased due to frozen conditions. Weekly inspections will recommence when construction activities are conducted, or if there is 0.5” or greater rain event, or a discharge due to snowmelt occurs.

If any violation of the provisions of this plan is identified during the conduct of the construction work covered by this plan, the Resident

Engineer shall notify the appropriate IEPA Field Operations Section office by email at: epa.swnoncomp@illinois.gov, telephone or fax within twenty-four (24) hours of the incident. The Resident Engineer shall then complete and submit an "Incidence of Non-Compliance" (ION) report for the identified violation within five (5) days of the incident. The Resident Engineer shall use forms provided by IEPA and shall include specific information on the cause of noncompliance, actions which were taken to prevent any further causes of noncompliance, and a statement detailing any environmental impact which may have resulted from the noncompliance. All reports of non-compliance shall be signed by a responsible authority in accordance with Part VI. G of the Permit ILR10.

The Incidence of Non-Compliance shall be mailed to the following address:
Illinois Environmental Protection Agency
Division of Water Pollution Control
Attn: Compliance Assurance Section
1021 North Grand East
Post Office Box 19276
Springfield, Illinois 62794-9276

V. Failure to Comply:

Failure to comply with any provisions of this Storm Water Pollution Prevention Plan will result in the implementation of a National Pollutant Discharge Elimination System/Erosion and Sediment Control Deficiency Deduction against the Contractor and/or penalties under the Permit ILR10 which could be passed on to the Contractor.

rubino ENGINEERING INC.

ADDENENDUM TRANSMITTAL

July 27, 2020

To: Randal G. Newkirk, P.E.
Hampton, Lenzini and Renwick, Inc.
380 Shepard Drive
Elgin, IL 60123
Phone: 847.697.6700

Re: **Full Depth Reclamation Addendum Letter**
Latham Street Reconstruction and Rehabilitation
From Sandhurst Drive to Center Street
Sandwich, Illinois

Rubino Report No. G20.029

Via email: rnewkirk@hlreng.com

Dear Mr. Newkirk,

Rubino Engineering, Inc. (Rubino) is pleased to submit our addendum to the Geotechnical Engineering Services Reports for the proposed Latham Street Reconstruction and Rehabilitation in the above referenced locations.

Correspondence and Report History

- Rubino Report Number G20.029 dated May 6, 2020.
- Request to provide addendum letter for recommendations for Full Depth Reclamation from Daniel Sherman of HLR, Inc. on July 13, 2020.

Full Depth Reclamation Discussion

Upon review of the soils and subbase stone observed in the borings completed for this project, Rubino believes that Full Depth Reclamation (FDR) may be an option for roadway reconstruction at the site. See table below for observed pavement and subbase stone thickensses. In order to further verify the feasibility of FDR, mix design testing should be performed. The mix design testing should meet the minimum requirements for mix design standards.

Surface Conditions

Borings performed for this project were taken within existing pavement of Latham Street and the surface conditions are as follows:

Table 1: Existing Pavement Section Summary

Boring No.	Total Observed Pavement Thickness	Total Observed Base Stone Thickness
B-01	10 inches of Asphalt	Subbase Stone Not Observed
B-02	9 inches of Asphalt	7 inches of Subbase Stone
B-03	9 inches of Asphalt	6 inches of Subbase Stone
B-04	9 inches of Asphalt	5 inches of Subbase Stone
B-05	8 inches of Asphalt	4 inches of Subbase Stone

BORING NO.	TOTAL OBSERVED PAVEMENT THICKNESS	TOTAL OBSERVED BASE STONE THICKNESS
B-06	9 INCHES OF ASPHALT	5 INCHES OF SUBBASE STONE
B-07	10 INCHES OF ASPHALT	4 INCHES OF SUBBASE STONE
B-08	8 INCHES OF ASPHALT	7 INCHES OF SUBBASE STONE
B-09	10 INCHES OF ASPHALT	5 INCHES OF SUBBASE STONE
B-10	10 INCHES OF ASPHALT	6 INCHES OF SUBBASE STONE

Please note that the above referenced thicknesses are considered approximate and based on visual observations. Pavement and sub-base type and thickness may vary between core/boring locations. More specific pavement thickness would need to be determined by obtaining a physical pavement core.

Closing

Rubino appreciates the opportunity to provide supplemental geotechnical services for this project and we look forward to continued participation during the design and in future construction phases of this project.

All other recommendations, terms, and conditions from the above referenced reports remain in effect except as explicitly stated in this letter.

If you have questions pertaining to this addendum letter, or if Rubino may be of further service, please contact our office at (847) 931-1555.

Respectfully submitted,
RUBINO ENGINEERING, INC.

Michelle A. Lipinski, PE
President

michelle.lipinski@rubinoeng.com
MAL/file/ Enclosures: Boring Logs

rubino
ENGINEERING INC.

REPORT TRANSMITTAL

May 6, 2020

To: Randal G. Newkirk, P.E.
Hampton, Lenzini and Renwick, Inc.
380 Shepard Drive
Elgin, IL 60123
Phone: 847.697.6700

Re: **Geotechnical Engineering Services Report**
Latham Street Reconstruction and Rehabilitation
From Sandhurst Drive to Center Street
Sandwich, Illinois

Rubino Report No. G20.029

Via email: rnewkirk@hlreng.com

Dear Mr. Newkirk,

Rubino Engineering, Inc. (Rubino) is pleased to submit our Geotechnical Engineering Services Report for the proposed Latham Street Reconstruction and Rehabilitation in Sandwich, Illinois.

Report Description

Enclosed is the Geotechnical Services Report including results of field and laboratory testing, as well as recommendations for pavement design, roadway reconstruction, and general site development.

Authorization and Correspondence History

- Rubino Proposal No. Q18.243g dated May 2, 2018; Signed and authorized by Amy McSwane, Treasurer of Hampton, Lenzini and Renwick, Inc. on February 13, 2020.

Closing

Rubino appreciates the opportunity to provide geotechnical services for this project and we look forward to continued participation during the design and in future construction phases of this project.

If you have questions pertaining to this report, or if Rubino may be of further service, please contact our office at (847) 931-1555.

Respectfully submitted,
RUBINO ENGINEERING, INC.

Michelle A. Lipinski, PE
President

michelle.lipinski@rubinoeng.com

MAL/file/ Enclosures

Geotechnical Engineering Services Report

Drilling
Laboratory Testing
Geotechnical Analysis

LATHAM STREET RECONSTRUCTION AND REHABILITATION

FROM SANDHURST DRIVE TO CENTER STREET

SANDWICH, ILLINOIS

RUBINO PROJECT NO. G20.029

PREPARED BY:

rubino ENGINEERING INC.

_____

Michelle A. Lipinski, PE
President
IL No. 062-061241, Exp. 11/30/21

PREPARED FOR:

HAMPTON, LENZINI AND RENWICK, INC.

380 SHEPARD DRIVE

ELGIN, ILLINOIS 60123

MAY 6, 2020

TABLE OF CONTENTS

PROJECT INFORMATION

Rubino Engineering, Inc. (Rubino) understands that the City of Sandwich is planning to reconstruct and rehabilitate Latham Street (approximately 4,500 linear feet) from Sandhurst Drive to Center Street in Sandwich, Illinois.

Documents received:

- "Location Map" – prepared by Hampton, Lenzini and Renwick, Inc.

Project Correspondence:

- RFP Email from Randal G. Newkirk of Hampton, Lenzini and Renwick, Inc. via Email on April 30th, 2018.

The geotechnical recommendations presented in this report are based on the available project information and the subsurface materials described in this report. If any of the information on which this report is based is incorrect, please inform Rubino in writing so that we may amend the recommendations presented in this report (if appropriate, and if desired by the client). Rubino will not be responsible for the implementation of our recommendations if we are not notified of changes in the project.

Purpose / Scope of Services

The purpose of this study was to explore the subsurface conditions at the site in order to prepare geotechnical recommendations for pavement design, roadway reconstruction, and general site development for the proposed construction. Rubino's scope of services included the following drilling program:

Table 1: Drilling Scope

NUMBER OF BORINGS	DEPTH (FEET BEG*)	LOCATION
10	7 ½	See Boring Location Plan

*BEG = below existing grade

Representative soil samples obtained during the field exploration program were transported to the laboratory for additional classification and laboratory testing.

This report briefly outlines the following:

- *Summary of client-provided project information and report basis*
- *Overview of encountered subsurface conditions*
- *Overview of field and laboratory tests performed including results*
- *Geotechnical recommendations pertaining to:*
  - *Subgrade preparation*

- *Subgrade Stability*
- *Estimated IBV value at each boring location*

- *Construction considerations, including temporary excavation and construction control of water*

DRILLING, FIELD, AND LABORATORY TEST PROCEDURES

Rubino selected the number of borings, the boring locations, and the boring depths. Rubino located the borings in the field by measuring distances from known fixed site features. The borings were advanced utilizing 3 ¼ inch inside-diameter, hollow stem auger drilling methods and soil samples were routinely obtained during the drilling process.

Selected soil samples were tested in the laboratory to determine material properties for this report. Drilling, sampling, and laboratory tests were accomplished in general accordance with ASTM procedures. The following items are further described in the Appendix of this report.

- *Field Penetration Tests and Split-Barrel Sampling of Soils (ASTM D1586)*
- *Field Water Level Measurements*
- *Laboratory Determination of Water (Moisture) Content of Soil by Mass (ASTM D2216)*
- *Laboratory Determination of Atterberg Limits (ASTM D4318)*
- *Laboratory Organic Content by Loss on Ignition (ASTM D2974)*

The laboratory testing program was conducted in general accordance with applicable ASTM specifications. The results of these tests are to be found on the accompanying boring logs located in the Appendix.

SUMMARY OF GEOTECHNICAL CONSIDERATIONS

The main geotechnical design and construction considerations at this site are:

- Based on the SPT N values and Qp values, **undercuts** have been estimated along Latham Street. See *Subgrade Stability Recommendations* section for more detailed information.

- In general, the **asphalt thicknesses** observed at boring locations ranged between 8 and 10 inches. In general, the **subbase stone** thickness generally ranged between 4 and 7 inches. One location did not have subbase stone. See *Surface Conditions* section for more detailed information

- **Subgrade soils** generally consisted of undocumented fill and brown, black, and/or gray silty clay and brown sand. See *Subsurface Conditions* and *Undocumented Fill Discussion* sections for more detailed information.

    - One boring was highlighted for **undercut**. See the Subgrade Stability section for more specific information.

- **Free groundwater was observed** within some of the borings during drilling operations. See *Groundwater Conditions* section for more information.

- Positive drainage of the subgrade soils combined with interceptor drains and positive surface drainage will help the life expectancy of the new pavement section. See the *Pavement Drainage and Maintenance* section for more detailed information.

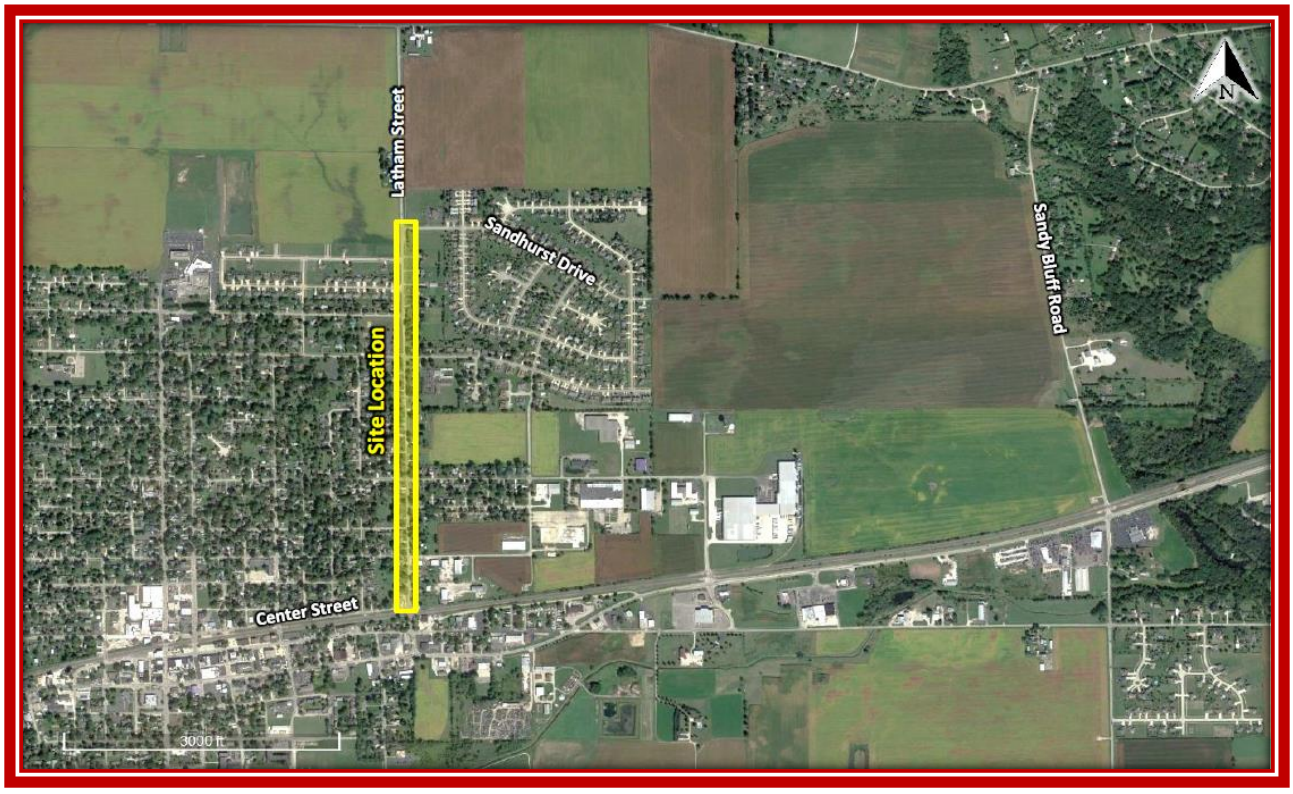
- During subgrade preparation, Rubino recommends that one of our representatives be onsite for typical **observations and documentation** of proof-rolling and penetrometer testing of the pavement subgrade.

The geotechnical-related recommendations in this report are presented based on the subsurface conditions encountered and Rubino's understanding of the project. Should changes in the project criteria occur, a review must be made by Rubino to determine if modifications to our recommendations will be necessary.

SITE AND SUBSURFACE CONDITIONS

Site Location and Description

The project site covers approximately 4,500 linear feet of Latham Street from Sandhurst Drive to Center Street in Sandwich, Illinois. The street gradually slopes to the south and is lined with mainly residential housing.



The midpoint of the project site has an approximate latitude and longitude of 41.652585° N and -88.612176° W, respectively.

Surface Conditions

Borings were taken within existing pavement of Latham Street and the surface conditions are as follows:

Table 2: Existing Pavement Section Summary

BORING NO.	TOTAL OBSERVED PAVEMENT THICKNESS	TOTAL OBSERVED BASE STONE THICKNESS
B-01	10 INCHES OF ASPHALT	SUBBASE STONE NOT OBSERVED
B-02	9 INCHES OF ASPHALT	7 INCHES OF SUBBASE STONE
B-03	9 INCHES OF ASPHALT	6 INCHES OF SUBBASE STONE
B-04	9 INCHES OF ASPHALT	5 INCHES OF SUBBASE STONE
B-05	8 INCHES OF ASPHALT	4 INCHES OF SUBBASE STONE
B-06	9 INCHES OF ASPHALT	5 INCHES OF SUBBASE STONE
B-07	10 INCHES OF ASPHALT	4 INCHES OF SUBBASE STONE
B-08	8 INCHES OF ASPHALT	7 INCHES OF SUBBASE STONE
B-09	10 INCHES OF ASPHALT	5 INCHES OF SUBBASE STONE
B-10	10 INCHES OF ASPHALT	6 INCHES OF SUBBASE STONE

Please note that the above referenced thicknesses are considered approximate and based on visual observations in the borehole. Pavement and sub-base type and thickness may vary between core/boring locations. More specific pavement thickness would need to be determined by obtaining a physical pavement core.

Subsurface Conditions

Beneath the existing surficial pavement and subbase stone, subsurface conditions generally consisted of brown, black, and/or gray silty clay and brown sand.

- The **undocumented fill** soils were both granular and cohesive in nature
- The **granular** soils were generally medium dense in apparent density
- The native **silty clay** soils were generally soft to stiff in consistency

Table 3: Subsurface Conditions Summary

DEPTH RANGE (FEET BEG*)	SOIL DESCRIPTION	SPT N-VALUES (BLOWS PER FOOT)	MOISTURE CONTENT (%)	ESTIMATED SHEAR STRENGTH
1 – 3 ½	FILL: Brown gravel with sand *(B-01)*	18	7 – 13	---
1 – 2	FILL: brown and gray silty clay, trace to with sand, gravel, and asphalt	---	18 – 26	---
1 – 7 ½	Soft to stiff, brown, black, and/or gray silty CLAY, trace sand and gravel	2 – 11	11 – 29	c = 300 – 1,650 psf
6 ½ - 7 ½	Medium dense, brown well-graded SAND with gravel *(B-09)*	15	9	ϕ = 31°

*BEG = Below existing grade

The native soils were visually classified as silty clay (CL) and well-graded sand (SW) according to the Unified Soil Classification System (USCS). The above table is a general summary of subsurface conditions. Please refer to the boring logs for more detailed information.

Estimated shear strength of clay soils is based on empirical correlations using N-values, moisture content, and unconfined compressive strength.

Groundwater Conditions

Groundwater was encountered in some of the borings during drilling operations. The following table summarizes groundwater observations from the field:

Table 4: Groundwater Observation Summary

BORING NUMBER	GROUNDWATER LEVEL DURING DRILLING (FEET BEG*)	GROUNDWATER LEVEL UPON AUGER REMOVAL (FEET BEG*)
B-02	6	N/A
B-03	6	N/A
B-05	6	N/A
B-06	6	N/A
B-07	6	N/A
B-08	6	N/A

*BEG = below existing grade

It should be noted that fluctuations in the groundwater level should be anticipated throughout the year depending on variations in climatological conditions and other factors not apparent at the time the borings were performed. Groundwater may not have been observed in some areas due to the low permeability of soils. Additionally, discontinuous zones of perched water may exist within the

soils. The possibility of groundwater level fluctuation should be considered when developing the design and construction plans for the project.

EVALUATION AND RECOMMENDATIONS

The geotechnical-related recommendations in this report are presented based on the subsurface conditions encountered and Rubino's understanding of the project. Should changes in the project criteria occur, a review must be made by Rubino to determine if modifications to our recommendations will be necessary.

Undocumented Fill Discussion

Undocumented fill and possible fill soils were observed in some of the borings to depths ranging from about 1 to 3 ½ feet below existing grade.

Undocumented fill materials should be carefully evaluated by proof-rolling and subgrade stability testing (as recommended herein) at the time of construction to document the in-place consistency of these materials.

Undocumented fill is defined as fill that has been placed without being documented as to its placed density and moisture content.

Deleterious materials could include, but are not limited to, bricks, asphalt, concrete, metal, wood, or other building debris.

Deleterious materials, such as asphalt, were observed within the undocumented fill materials during the drilling operations. Although deleterious materials were not encountered in all of the undocumented fill materials, this does not eliminate the possibility that deleterious materials could

Pavement Subgrade Preparation

Rubino recommends that unsuitable soils or deleterious materials be removed from the construction area, as applicable. Unsuitable soils or deleterious materials can be described as, but are not limited to:

- Organic soil / topsoil / plants / trees / shrubs / grass
- Frozen soil
- Existing asphalt or concrete pavement sections
- Concrete curb & gutter

Prior to paving, the prepared subgrade should be proof rolled using a loaded tandem axle dump truck or similar type of pneumatic tired equipment with a minimum gross weight of 9 tons per single axle. Localized soft areas identified should be repaired prior to paving. Moisture content of the subgrade be maintained between -2% and +3% of the optimum at the time of paving. It may require rework when the subgrade is either desiccated or wet.

Areas of low support or soft spots should be tested with either a Static Cone Penetrometer (SCP) or Dynamic Cone Penetrometer (DCP). The results of the DCP or SCP tests should be evaluated

according to the IDOT Subgrade Stability Manual (2005), to determine the necessary depth of corrective action.

Please note that fine grained subgrade soils are sensitive to moisture and can be easily disturbed by precipitation, groundwater, or construction equipment. Therefore, extra care should be used to avoid disturbing these soils during construction activities.

District One Aggregate Subgrade Improvement

Rubino recommends supporting all new pavement on 12 inches of improved subgrade, meeting the requirements to the District One, Aggregate Subgrade Improvement Special Provision (April 1, 2016).

There will be a need for two separate Aggregate Subgrade improvement line items in the Schedule of Quantities (SOQ) included in the design plans:

1) **Aggregate Subgrade Improvement 12" (SQ YD)** – This will be used for the 12-inch aggregate subgrade improvement below new pavement section and widening pavement sections.
2) **Aggregate Subgrade Improvement (CU YD)** – This will be used in locations where there are undercuts (below the 12-inch improved subgrade layer) where poor soils were removed.

Both of these line items reference back to the District One Aggregate Subgrade Improvement Special Provision.

Subgrade Stability Recommendations

The recommendations located in this report are based on the data obtained at each particular soil boring location. Soil subgrade stability may vary in the field between the borings and could be affected by the weather at the time of construction.

- See attached IDOT IBV Based Remedial Action chart from the IDOT Subgrade Stability Manual for reference.
- Subgrade with an IBV value of 2 or less is a candidate for additional remediation.
- **Undocumented Fill materials** should be carefully evaluated by proof-rolling and subgrade stability testing at the time of construction to document the in-place consistency of these materials

Based on the above criteria, the following boring locations have been highlighted for potential subgrade stabilization:

Table 3: Undercut Recommendations

LOCATION	IBV VALUE	REMEDIAL THICKNESS (UNDERCUT)	GEOTECHNICAL CONSIDERATIONS
Latham St (B-03)	1 – 2	12 inches	Soft dark gray to greenish brown clay soils, Moisture Content = 29%, Qp = 0.5 tsf

*** Rubino anticipates the pavement design will include the IDOT District 1 Aggregate Subgrade Improvement layer,12 inches (SY). This undercut estimate is intended to extend below the proposed final subgrade elevation.

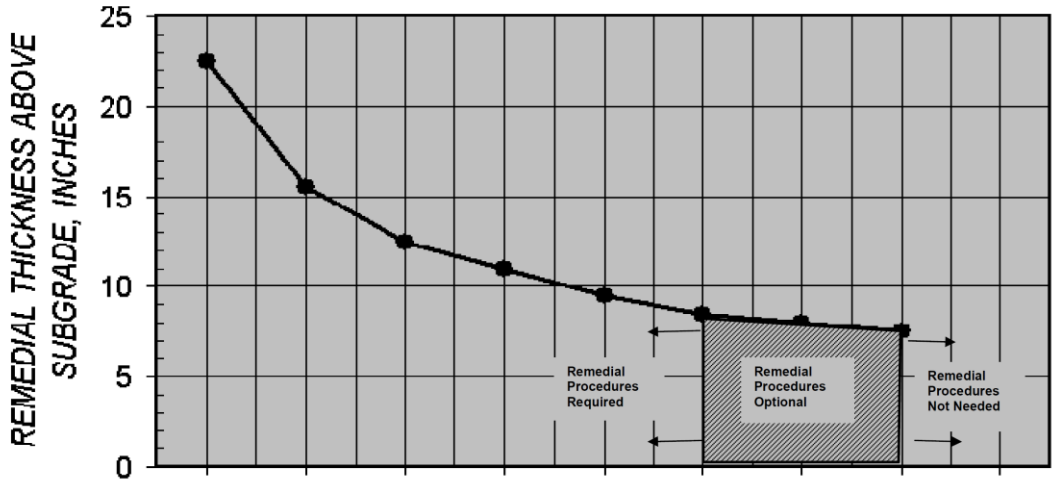
Subgrade soils may be stabilized by one of the following options:

- Remove and replace with Aggregate Subgrade Improvement 12 inch (CY).
- A layer of geotextile should be placed in areas of additional undercut.
- In areas of greater instability, geogrid and stone could be installed per manufacturer's installation specifications, maintaining positive drainage below pavements.

Unstable soil should be treated in accordance with Article 301.04 of the standard specifications and undercut guidelines in the IDOT Subgrade Stability Manual.

Reference IDOT Subgrade Stability Manual 2005

IBV BASED REMEDIAL ACTION



IBV	1	2	3	4	5	6	7	8	9
Cone Index(CI)	40	80	120	160	200	240	280	320	360
Shear Strength (psi)	2.25	4.50	6.75	9.00	11.25	13.50	15.75	18.00	20.25
Qu (tsf)	0.32	0.64	1.00	1.28	1.60	1.94	2.24	2.56	2.88
Rate (in./Blow)	4.6	2.6	2.0	1.5	1.3	1.1	1.0	0.9	0.8
Rate (Blows/6")	1.3	2.3	3.0	4.0	4.6	5.5	6.0	6.7	7.5
Treatment Thickness	22.5	15.5	12.5	11	9.5	8.5	8	7.5	0

Figure A-2. Thickness design as a function of IBV, CI, Shear Strength, and Q_u for subgrade treatment (granular backfill or modified soil).

Pavement Drainage and Maintenance

Fine-grained soils can be sensitive to remolding in the presence of water. In the areas of surficial clays, the surface should be maintained in a graded condition to prevent standing water on the subgrade. Appropriate measures may include, but are not limited to:

- Shaping/pitching the sub-grade to drain toward side drainage ditch along the pavement.
- Providing proper filtration for runoff waters. Proper drainage of the pavement is mandated by Article 202.05 of the IDOT Standard Specifications.
- Rubino recommends placing CA-6 as the fill at the interface of clay and the new pavement. If open-graded stone is used, a geotextile should be placed between the fine-grained soil and the stone.
- Rubino recommends pavements be sloped to provide rapid surface drainage. Water allowed to pond on or adjacent to the pavement could saturate the subgrade and cause premature deterioration of pavements, and removal and replacement may be required.
- Consideration should be given to the use of an interceptor drain to collect and remove water collecting in the granular base. The interceptor drains could be incorporated with the storm drains of other utilities located in the pavement areas.

Recommendations for Additional Testing

Once the site plans and grading plans are finalized, please notify Rubino so that we can review our recommendations for the direct use of the structure and development of the site.

During construction, Rubino recommends that one of our representatives be onsite for typical **observations and documentation** of exposed subgrade for pavements, including proofrolling and penetrometer testing.

CLOSING

The recommendations submitted are based on the available subsurface information obtained by Rubino Engineering, Inc. and design details furnished by Hampton, Lenzini and Renwick, Inc. for the proposed project. If there are any revisions to the plans for this project or if deviations from the subsurface conditions noted in this report are encountered during construction, Rubino should be notified immediately to determine if changes in the recommendations are required. If Rubino is not retained to perform these functions, we will not be responsible for the impact of those conditions on the project.

The scope of services did not include an environmental assessment to determine the presence or absence of wetlands, or hazardous or toxic materials in the soil, bedrock, surface water, groundwater or air on, below, or around this site. Any statements in this report and/or on the

boring logs regarding odors, colors, and/or unusual or suspicious items or conditions are strictly for informational purposes.

After the plans and specifications are more complete, the geotechnical engineer should be retained and provided the opportunity to review the final design plans and specifications to check that our engineering recommendations have been properly incorporated into the design documents. At this time, it may be necessary to submit supplementary recommendations. This report has been prepared for the exclusive use of Hampton, Lenzini and Renwick, Inc. and their consultants for the specific application to the proposed Latham Street Reconstruction and Rehabilitation in Sandwich, Illinois.

Appendix A – Drilling, Field, and Laboratory Test Procedures

ASTM D1586 Penetration Tests and Split-Barrel Sampling of Soils

During the sampling procedure, Standard Penetration Tests (SPT's) were performed at regular intervals to obtain the standard penetration (N-value) of the soil. The results of the standard penetration test are used to estimate the relative strength and compressibility of the soil profile components through empirical correlations to the soils' relative density and consistency. The split-barrel sampler obtains a soil sample for classification purposes and laboratory testing, as appropriate for the type of soil obtained.

Water Level Measurements

Water level observations were attempted during and upon completion of the drilling operation using a 100-foot tape measure. The depths of observed water levels in the boreholes are noted on the boring logs presented in the appendix of this report. In the borings where water is unable to be observed during the field activities, in relatively impervious soils, the accurate determination of the groundwater elevation may not be possible even after several days of observation. Seasonal variations, temperature and recent rainfall conditions may influence the levels of the groundwater table and volumes of water will depend on the permeability of the soils.

Ground Surface Elevations

At this time, no site-specific elevations were available to Rubino. The depths indicated on the attached boring logs are relative to the existing ground surface for each individual boring at the time of the exploration. Copies of the boring logs are located in the Appendix of this report.

ASTM D2216 Water (Moisture) Content of Soil by Mass (Laboratory)

The water content is an important index property used in expressing the phase relationship of solids, water, and air in a given volume of material and can be used to correlate soil behavior with its index properties. In fine grained cohesive soils, the behavior of a given soil type often depends on its natural water content. The water content of a cohesive soil along with its liquid and plastic limits as determined by Atterberg Limit testing are used to express the soil's relative consistency or liquidity index.

ASTM D2974 Standard Test Method for Organic Soils using Loss on Ignition (Laboratory)

These test methods cover the measurement of moisture content, ash content, and organic matter in peats and other organic soils, such as organic clays, silts, and mucks. Ash content of a peat or organic soil sample is determined by igniting the oven-dried sample from the moisture content determination in a muffle furnace at 440°C (Method C) or 750°C (Method D). The substance remaining after ignition is the ash. The ash content is expressed as a percentage of the mass of the oven-dried sample. 2.4 Organic matter is determined by subtracting percent ash content from 100.

ASTM D4318 Atterberg Limits (Laboratory)

Atterberg limit testing defines the liquid limit (LL) and plastic limit (PL) states of a given soil. These limits are used to determine the moisture content limits where the soil characteristics changes from behaving more like a fluid on the liquid limit end to where the soil behaves more like individual soil particles on the plastic limit end. The liquid limit is often used to determine if a soil is a low or high plasticity soil. The plasticity index (PI) is difference between the liquid limit and the plastic limit. The plasticity index is used in conjunction with the liquid limit to determine if the material will behave like a silt or clay.

Appendix B – Report Limitations

Subsurface Conditions:

The subsurface description is of a generalized nature to highlight the major subsurface stratification features and material characteristics. The boring logs included in the appendix should be reviewed for specific information at individual boring locations. These records include soil descriptions, stratifications, penetration resistances, locations of the samples and laboratory test data as well as water level information. The stratifications shown on the boring logs represent the conditions only at the actual boring locations. Variations may occur and should be expected between boring locations. The stratifications represent the approximate boundary between subsurface materials and the actual transition between layers may be gradual. The samples, which were not altered by laboratory testing, will be retained for up to 60 days from the date of this report and then will be discarded.

Geotechnical Risk:

The concept of risk is an important aspect of the geotechnical evaluation. The primary reason for this is that the analytical methods used to develop geotechnical recommendations do not comprise an exact science. The analytical tools that geotechnical engineers use are generally empirical and must be used in conjunction with engineering judgment and experience. Therefore, the solutions and recommendations presented in the geotechnical evaluation should not be considered risk-free, and more importantly, are not a guarantee that the interaction between the soils and the proposed structure will perform as planned. The engineering recommendations, presented in the preceding section, constitute Rubino's professional estimate of the necessary measures for the proposed structure to perform according to the proposed design based on the information generated and reference during this evaluation, and Rubino's experience in working with these conditions.

Warranty:

The geotechnical engineer warrants that the findings, recommendations, specifications, or professional advice contained herein have been made in accordance with generally accepted professional geotechnical engineering practices in the local area. No other warranties are implied or expressed.

Federal Excavation Regulations:

In Federal Register, Volume 54, No. 209 (October 1989), the United States Department of Labor, Occupational Safety and Health Administration (OSHA) amended its "Construction Standards for Excavations, 29 CFR, part 1926, Subpart P". This document was issued to better ensure the safety of workmen entering trenches or excavations. This federal regulation mandates that all excavations, whether they be utility trenches, basement excavation or footing excavations, be constructed in accordance with the new OSHA guidelines. It is our understanding that these regulations are being strictly enforced and if they are not closely followed, the owner and the contractor could be liable for substantial penalties.

The contractor is solely responsible for designing and constructing stable, temporary excavations and should shore, slope, or bench the sides of the excavations as required to maintain stability of both the excavation sides and bottom. The contractor's "responsible person," as defined in 29 CFR Part 1926, should evaluate the soil exposed in the excavations as part of the contractor's safety procedures. In no case should slope height, slope inclination, or excavation depth, including utility trench excavation depth, exceed those specified in local, state, and federal safety regulations. Rubino is providing this information solely as a service to our client. Rubino is not assuming responsibility for construction site safety or the contractor's activities; such responsibility is not being implied and should not be inferred.

Appendix C – Soil Classification General Notes

DRILLING & SAMPLING SYMBOLS:

SS:	Split Spoon - 1 3/8" I.D., 2" O.D., unless otherwise noted	PS:	Piston Sample
ST:	Thin-Walled Tube - 3" O.D., Unless otherwise noted	WS:	Wash Sample
PM:	Pressuremeter	HA:	Hand Auger
RB:	Rock Bit	HS:	Hollow Stem Auger
DB:	Diamond Bit - 4", N, B	BS:	Bulk Sample

Standard "N" Penetration: Blows per foot of a 140-pound hammer falling 30 inches on a 2-inch O.D. split spoon sampler (SS), except where noted.

WATER LEVEL MEASUREMENT SYMBOLS:
Water levels indicated on the boring logs are the levels measured in the borings at the times indicated. In pervious soils, the indicated levels may reflect the location of groundwater. In low permeability soils, the accurate determination of ground water levels is not possible with only short-term observations.

DESCRIPTIVE SOIL CLASSIFICATION:
Soil Classification is based on the Unified Soil Classification System as defined in ASTM D-2487 and D-2488. Coarse Grained Soils have more than 50% of their dry weight retained on a #200 sieve; they are described as: boulders, cobbles, gravel or sand. Fine Grained Soils have less than 50% of their dry weight retained on a #200 sieve; they are described as: clays, if they are plastic, and silts if they are slightly plastic or non-plastic. Major constituents may be added as modifiers and minor constituents may be added according to the relative proportions based on grain size. In addition to gradation, coarse grained soils are defined on the basis of their relative in-place density and fine-grained soils on the basis of their consistency. Example: Lean clay with sand, trace gravel, stiff (CL); silty sand, trace gravel, medium dense (SM).

CONSISTENCY OF FINE-GRAINED SOILS:

Unconfined Compressive Strength, Qu (tsf)			N-Blows/ft.			Consistency
	<	0.25	< 2			Very Soft
0.25	-	0.5	2	-	4	Soft
0.5	-	1	4	-	8	Medium Stiff
1	-	2	8	-	15	Stiff
2	-	4	15	-	30	Very Stiff
4	-	8	30	-	50	Hard
>	-	8	> 50			Very Hard

RELATIVE DENSITY OF COARSE-GRAINED SOILS

N-Blows/ft.			Relative Density
0	-	3	Very Loose
4	-	9	Loose
10	-	29	Medium Dense
30	-	49	Dense
50	-	80	Very Dense
		80+	Extremely Dense

RELATIVE PROPORTIONS OF SAND & GRAVEL

Descriptive Term	% of Dry Weight		
Trace		<	15
With	15	-	29
Modifier		>	30

RELATIVE PROPORTIONS OF FINES

Descriptive Term	% of Dry Weight		
Trace		<	5
With	5	-	12
Modifier		>	12

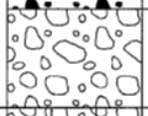
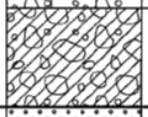
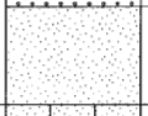
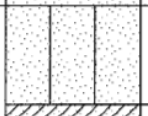
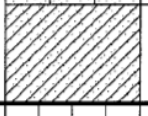
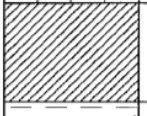
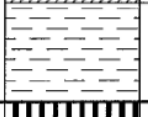
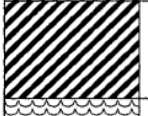
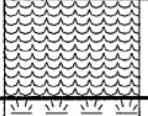
*Descriptive Terms apply to components also present in sample

GRAIN SIZE TERMINOLOGY

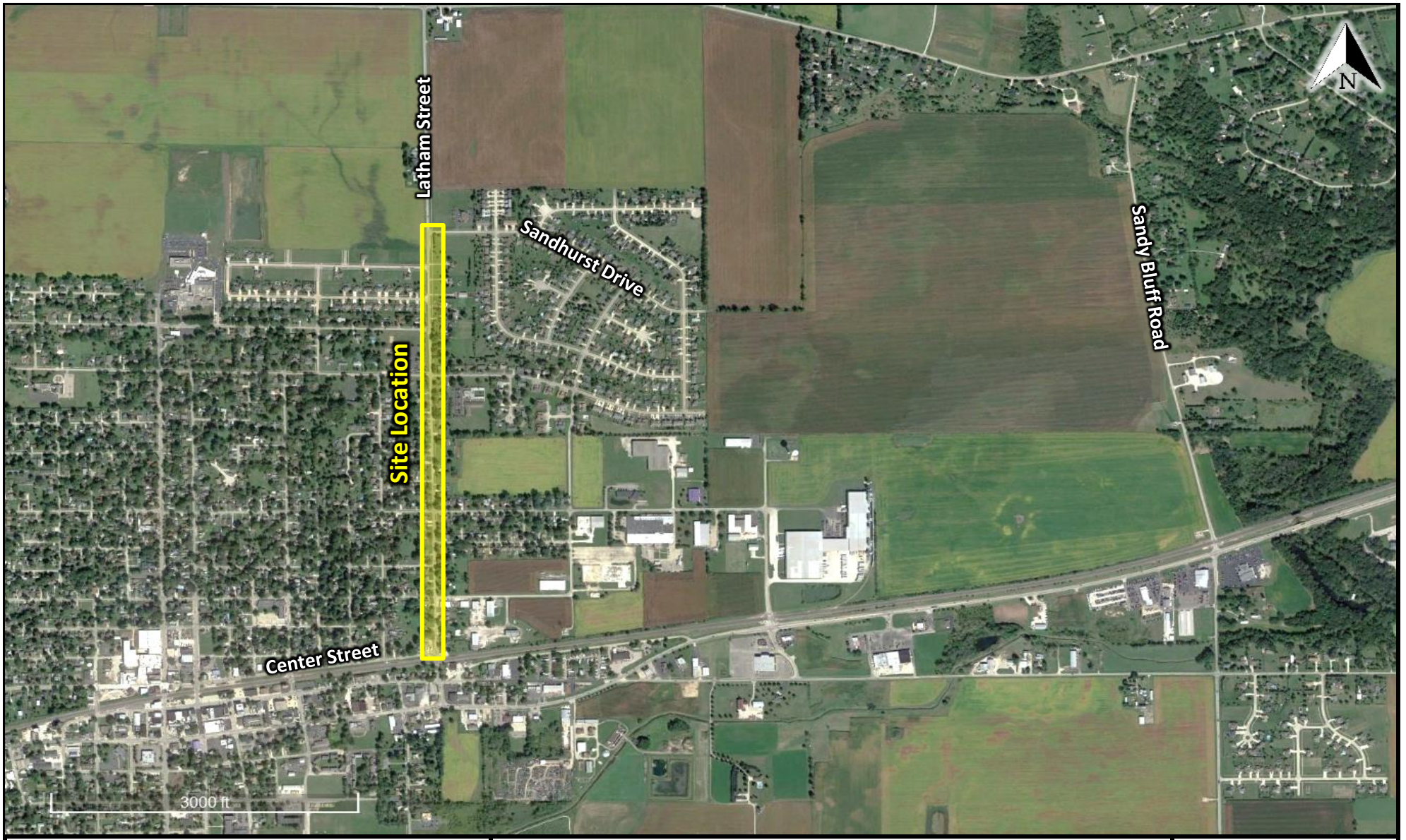
Major Component	Size Range
Boulders	Over 12 in. (300mm)
Cobbles	12 in. To 3 in. (300mm to 75mm)
Gravel	3 in. To #4 sieve (75mm to 4.75mm)
Sand	#4 to #200 sieve (4.75mm to 0.75mm)

SOIL CLASSIFICATION CHART

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

MAJOR DIVISIONS			SYMBOLS: GRAPH	SYMBOLS: LETTER	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS — MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS — MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS — MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS — MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

Appendix E – Site Vicinity Map & Boring Location Plans

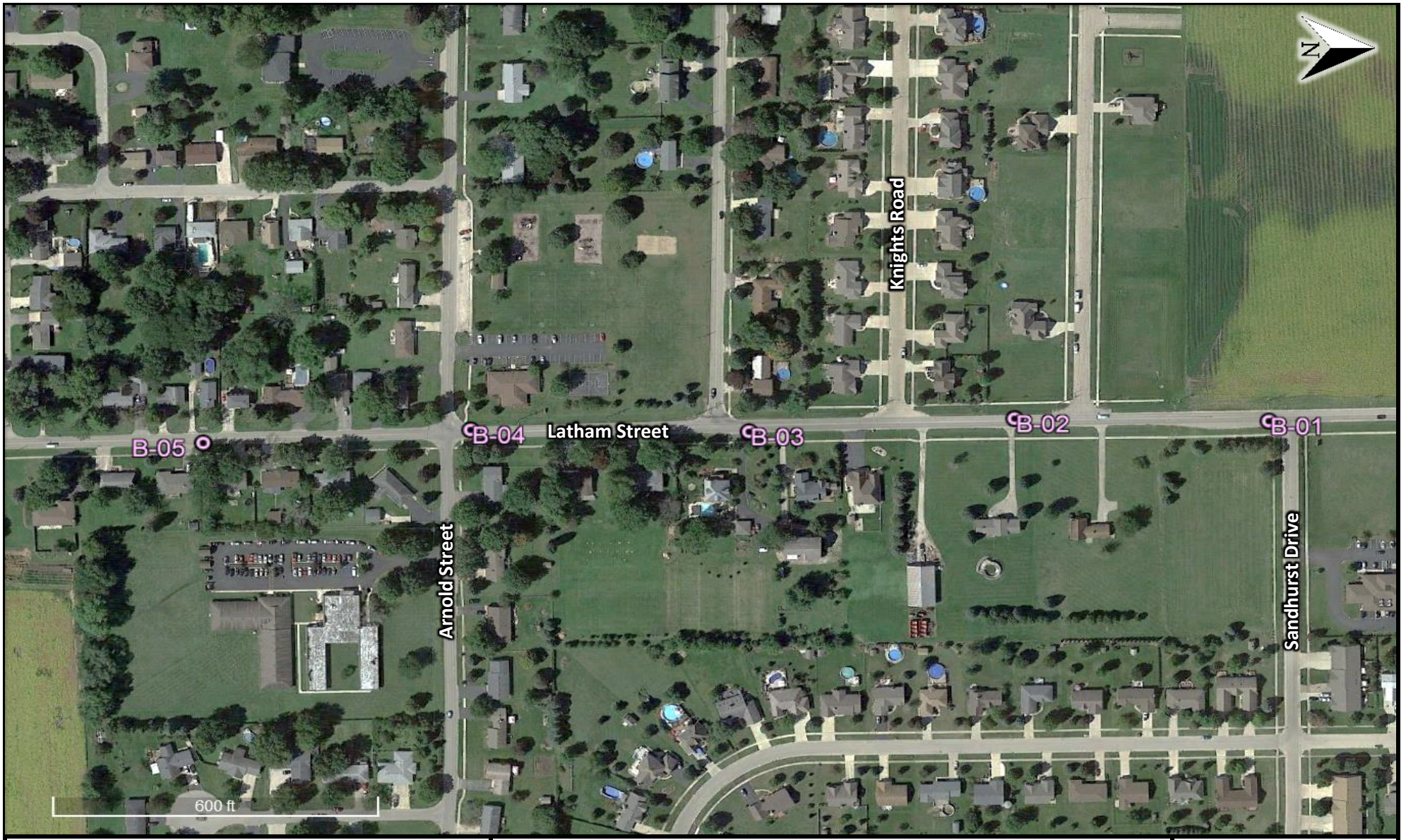


rubino ENGINEERING INC.

425 Shepard Drive
Elgin, Illinois 60123

Project Name:	**Latham Street Reconstruction and Rehabilitation**
Project Location:	Latham Street Sandwich, Illinois
Client:	**Hampton, Lenzini and Renwick, Inc.**
Rubino Project # :	G20.029

Site Vicinity Map

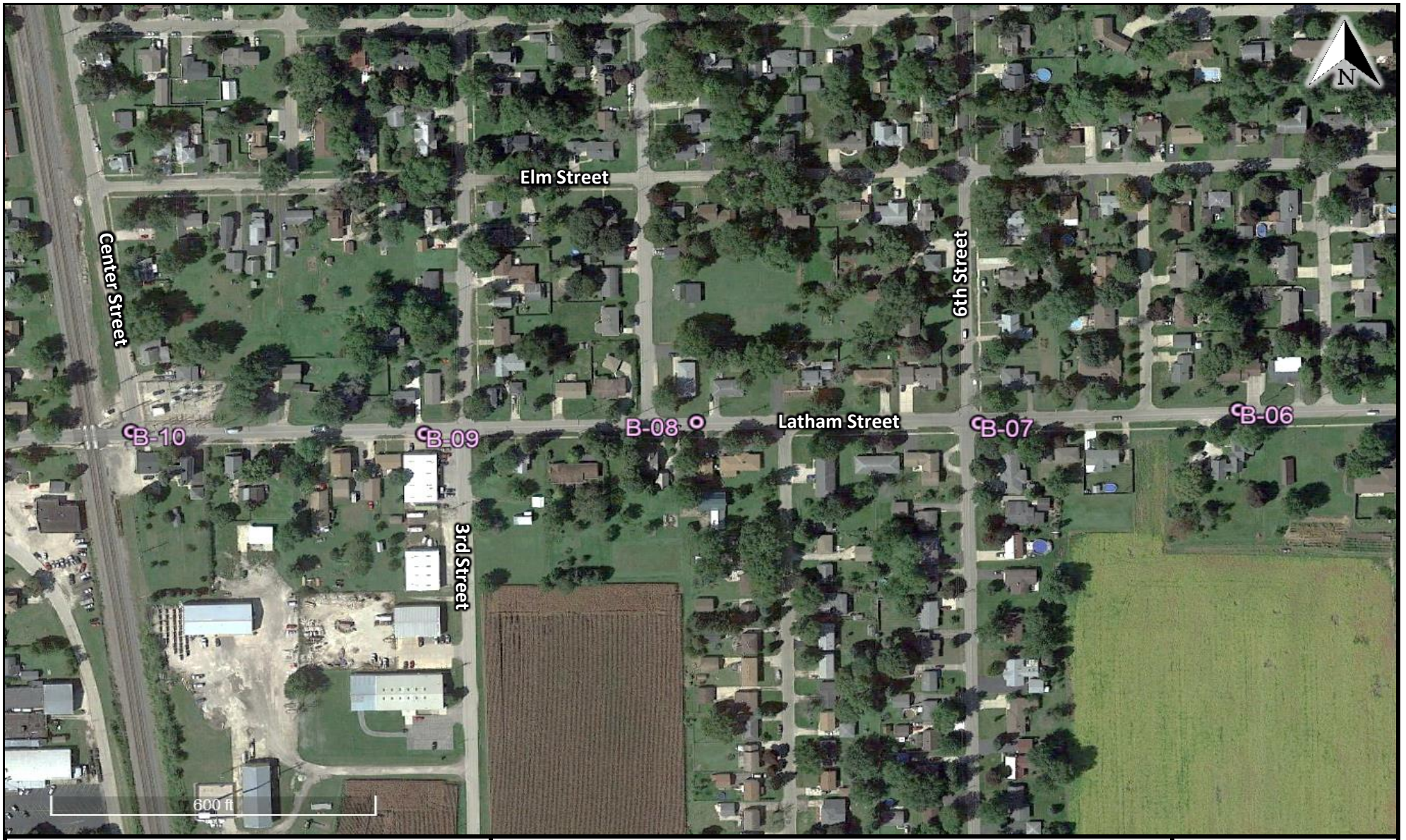


rubino ENGINEERING INC.

425 Shepard Drive
Elgin, Illinois 60123

Project Name:	**Latham Street Reconstruction and Rehabilitation**
Project Location:	Latham Street Sandwich, Illinois
Client:	**Hampton, Lenzini and Renwick, Inc.**
Rubino Project # :	G20.029

Boring Location Plan 1



rubino ENGINEERING INC.

425 Shepard Drive
Elgin, Illinois 60123

Project Name:	**Latham Street Reconstruction and Rehabilitation**
Project Location:	Latham Street Sandwich, Illinois
Client:	**Hampton, Lenzini and Renwick, Inc.**
Rubino Project # :	G20.029

Boring Location Plan 2

Appendix F – Borings Logs

Rubino Engineering, Inc.
425 Shepard Drive
Elgin, IL 60123
Telephone: 847-931-1555
Fax: 847-931-1560

LOG OF BORING B-01

Rubino Job No.:	G20.029	Drilling Method:	3 ¼ Hollow Stem Auger	WATER LEVELS***	
Project:	Latham Street Reconstruction	Sampling Method:	Split Spoon	While Drilling	N/A
Location:	Sandhurst Dr to Center St	Hammer Type:	Automatic	Upon Completion	N/A
City, State:	Sandwich, Illinois	Boring Location:	NB lane of Latham Street	Delay	N/A
Client:	Hampton, Lenzini and Renwick, Inc.		6 feet east from center line		

Station: N/A
Offset: N/A

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch	Moisture, %	STANDARD PENETRATION TEST DATA / STRENGTH, tsf	Additional Remarks
	0					Approximately 10 inches of ASPHALT					
				1	16	FILL: brown gravel with sand		4 9 9 N=18	13 7		2% Organic Content
				2	14	Soft, dark gray to black silty CLAY, trace sand and gravel	CL	1 1 1 N=2	28		Qp=0.5 tsf 3% Organic Content
	5			3	18	Stiff, brown and gray silty CLAY, trace sand and gravel	CL	3 3 6 N=9	23		Qp=3.5 tsf
						End of boring at approximately 7½ feet below existing grade.					

Moisture: ✕ | PL: ◪ | LL: ✚ (0 – 25 – 50)
Qu: ▲ | Qp: ✳ (0 – 2.0 – 4.0)

Completion Depth:	7.5 ft	Sample Types:	Pressuremeter, Shelby Tube, Auger Cutting, Hand Auger, Split-Spoon, No Recovery, Rock Core
Date Boring Started:	4/10/20		
Date Boring Completed:	4/10/20		
Logged By:	J.W.		
Drilling Contractor:	Rubino Engineering, Inc.		

Latitude: 41.659075
Longitude: -88.612333
Drill Rig: Geoprobe 7822DT
Remarks:

The stratification lines represent approximate boundaries. The transition may be gradual.
***Please reference the geotechnical report text for specific groundwater / dewatering recommendations.

Rubino Engineering, Inc.
425 Shepard Drive
Elgin, IL 60123
Telephone: 847-931-1555
Fax: 847-931-1560

LOG OF BORING B-02

Rubino Job No.:	G20.029	Drilling Method:	3 ¼ Hollow Stem Auger	WATER LEVELS***	
Project:	Latham Street Reconstruction	Sampling Method:	Split Spoon	While Drilling	6 ft
Location:	Sandhurst Dr to Center St	Hammer Type:	Automatic	Upon Completion	N/A
City, State:	Sandwich, Illinois	Boring Location:	SB lane of Latham Street	Delay	N/A
Client:	Hampton, Lenzini and Renwick, Inc.		8 feet west from center line		

Station: N/A
Offset: N/A

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch	Moisture, %	STANDARD PENETRATION TEST DATA / STRENGTH, tsf	Additional Remarks
	0					Approximately 9 inches of ASPHALT					
						Approximately 7 inches of SUBBASE STONE					
						FILL: brown silty clay with gravel					
				1	16			7 5 3 N=8	26		2% Organic Content
						Soft to medium stiff, brown silty CLAY, trace sand and gravel					
				2	12		CL	2 2 3 N=5	28		Qp=2.0 tsf 2% Organic Content
	5										
				3	16			1 1 2 N=3	18		Qp=0.3 tsf
						End of boring at approximately 7½ feet below existing grade.					

Moisture: ✕ PL: ◪ LL: ✚ (0, 25, 50)
STRENGTH, tsf: ▲ Qu ✳ Qp (0, 2.0, 4.0)

Completion Depth:	7.5 ft
Date Boring Started:	4/10/20
Date Boring Completed:	4/10/20
Logged By:	J.W.
Drilling Contractor:	Rubino Engineering, Inc.

Sample Types:
- Auger Cutting
- Split-Spoon
- Rock Core
- Pressuremeter
- Shelby Tube
- Hand Auger
- No Recovery

Latitude: 41.657797
Longitude: -88.612362
Drill Rig: Geoprobe 7822DT
Remarks:

The stratification lines represent approximate boundaries. The transition may be gradual.
***Please reference the geotechnical report text for specific groundwater / dewatering recommendations.

Rubino Engineering, Inc.
425 Shepard Drive
Elgin, IL 60123
Telephone: 847-931-1555
Fax: 847-931-1560

LOG OF BORING B-03

Rubino Job No.:	G20.029	Drilling Method:	3 ¼ Hollow Stem Auger	WATER LEVELS***	
Project:	Latham Street Reconstruction	Sampling Method:	Split Spoon	While Drilling	6 ft
Location:	Sandhurst Dr to Center St	Hammer Type:	Automatic	Upon Completion	N/A
City, State:	Sandwich, Illinois	Boring Location:	NB lane of Latham Street	Delay	N/A
Client:	Hampton, Lenzini and Renwick, Inc.		6½ feet east from center line		

Station: N/A
Offset: N/A

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch	Moisture, %	STANDARD PENETRATION TEST DATA / STRENGTH, tsf	Additional Remarks
	0					Approximately 9 inches of ASPHALT					
						Approximately 6 inches of SUBBASE STONE					
				1	16	Soft, dark gray to greenish-brown silty CLAY, trace sand and gravel *Possible Fill*	CL	4 1 2 N=3	29		Qp=0.5 tsf LL = 37 PL = 22 3% Organic Content
	5			2	15	Stiff, brown and gray mottled silty CLAY, trace sand and gravel	CL	3 4 4 N=8	29		Qp=2.0 tsf 2% Organic Content
				3	14	Medium stiff, brown silty CLAY, trace sand and gravel	CL	2 2 5 N=7	14		Qp=2.0 tsf
						End of boring at approximately 7½ feet below existing grade.					

Moisture ✕ | PL ◪ | LL ✚ (0 – 25 – 50)
Qu ▲ | Qp ✳ (0 – 2.0 – 4.0)

Completion Depth:	7.5 ft	Sample Types:	Auger Cutting	Pressuremeter	Latitude: 41.656463
Date Boring Started:	4/10/20		Split-Spoon	Shelby Tube	Longitude: -88.612275
Date Boring Completed:	4/10/20		Rock Core	Hand Auger	Drill Rig: Geoprobe 7822DT
Logged By:	J.W.			No Recovery	Remarks:
Drilling Contractor:	Rubino Engineering, Inc.				

The stratification lines represent approximate boundaries. The transition may be gradual.
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Rubino Engineering, Inc.
425 Shepard Drive
Elgin, IL 60123
Telephone: 847-931-1555
Fax: 847-931-1560

LOG OF BORING B-04

Rubino Job No.:	G20.029	Drilling Method:	3 ¼ Hollow Stem Auger	WATER LEVELS***	
Project:	Latham Street Reconstruction	Sampling Method:	Split Spoon	While Drilling	N/A
Location:	Sandhurst Dr to Center St	Hammer Type:	Automatic	Upon Completion	N/A
City, State:	Sandwich, Illinois	Boring Location:	SB lane of Latham Street	Delay	N/A
Client:	Hampton, Lenzini and Renwick, Inc.		5½ feet west from center line		

Station: N/A
Offset: N/A

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch	Moisture, %	STANDARD PENETRATION TEST DATA (Moisture, PL, LL; STRENGTH, tsf: Qu, Qp)	Additional Remarks
	0					Approximately 9 inches of ASPHALT					
						Approximately 5 inches of SUBBASE STONE					
						FILL: brown silty clay with gravel					
				1	12	Medium stiff to stiff, brown silty CLAY, trace sand and gravel		6 4 4 N=8	22		Qp=2.5 tsf
				2	12		CL	2 3 3 N=6	25		Qp=2.0 tsf 2% Organic Content
	5			3	9			2 8 3 N=11	23		Qp=1.5 tsf
						End of boring at approximately 7½ feet below existing grade.					

Completion Depth:	7.5 ft	Sample Types:	Pressuremeter
Date Boring Started:	4/10/20	Auger Cutting	Shelby Tube
Date Boring Completed:	4/10/20	Split-Spoon	Hand Auger
Logged By:	J.W.	Rock Core	No Recovery
Drilling Contractor:	Rubino Engineering, Inc.		

Latitude: 41.655065
Longitude: -88.612300
Drill Rig: Geoprobe 7822DT
Remarks:

The stratification lines represent approximate boundaries. The transition may be gradual.
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Rubino Engineering, Inc.
425 Shepard Drive
Elgin, IL 60123
Telephone: 847-931-1555
Fax: 847-931-1560

LOG OF BORING B-05

Rubino Job No.:	G20.029	Drilling Method:	3 ¼ Hollow Stem Auger	WATER LEVELS***	
Project:	Latham Street Reconstruction	Sampling Method:	Split Spoon	While Drilling	6 ft
Location:	Sandhurst Dr to Center St	Hammer Type:	Automatic	Upon Completion	N/A
City, State:	Sandwich, Illinois	Boring Location:	NB lane of Latham Street	Delay	N/A
Client:	Hampton, Lenzini and Renwick, Inc.		7½ feet east from center line		

Station: N/A
Offset: N/A

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch	Moisture, %	STANDARD PENETRATION TEST DATA: Moisture, PL, LL (0 / 25 / 50); STRENGTH, tsf: Qu, Qp (0 / 2.0 / 4.0)	Additional Remarks
	0					Approximately 8 inches of ASPHALT					
						Approximately 4 inches of SUBBASE STONE					
						FILL: gray silty clay, trace sand and gravel					
				1	14	Medium stiff, brown silty CLAY, trace sand and gravel		4 2 2 N=4	27		Qp=1.5 tsf 7% Organic Content
				2	14		CL	3 2 2 N=4	29		Qp=1.8 tsf 2% Organic Content
	5					Soft, brown silty CLAY with sand, trace gravel					
				3	10		CL	1 1 1 N=2	14		
						End of boring at approximately 7½ feet below existing grade.					

Completion Depth:	7.5 ft	Sample Types:			Latitude: 41.653719
Date Boring Started:	4/10/20		Auger Cutting	Pressuremeter	Longitude: -88.612214
Date Boring Completed:	4/10/20		Split-Spoon	Shelby Tube	Drill Rig: Geoprobe 7822DT
Logged By:	J.W.		Rock Core	Hand Auger	Remarks:
Drilling Contractor:	Rubino Engineering, Inc.			No Recovery	

The stratification lines represent approximate boundaries. The transition may be gradual.
***Please reference the geotechnical report text for specific groundwater / dewatering recommendations.

Rubino Engineering, Inc.
425 Shepard Drive
Elgin, IL 60123
Telephone: 847-931-1555
Fax: 847-931-1560

LOG OF BORING B-06

Rubino Job No.:	G20.029	Drilling Method:	3 ¼ Hollow Stem Auger	WATER LEVELS***	
Project:	Latham Street Reconstruction	Sampling Method:	Split Spoon	While Drilling	6 ft
Location:	Sandhurst Dr to Center St	Hammer Type:	Automatic	Upon Completion	N/A
City, State:	Sandwich, Illinois	Boring Location:	SB lane of Latham Street	Delay	N/A
Client:	Hampton, Lenzini and Renwick, Inc.		6½ feet west from center line		

Station: N/A
Offset: N/A

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch	Moisture, %	STANDARD PENETRATION TEST DATA (Moisture ×, PL ◪, LL ✚; 0–25–50; STRENGTH, tsf: Qu ▲, Qp ✳; 0–2.0–4.0)	Additional Remarks
	0					Approximately 9 inches of ASPHALT					
						Approximately 5 inches of SUBBASE STONE					
						Medium stiff to stiff, brown silty CLAY, trace sand and gravel					
				1	10			1 2 3 N=5	27		Qp=2.0 tsf 2% Organic Content
				2	16		CL	2 2 3 N=5	22		Qp=1.5 tsf
	5			3	13			3 4 5 N=9	12		Qp=0.8 tsf
						End of boring at approximately 7½ feet below existing grade.					

Completion Depth:	7.5 ft	Sample Types:			Latitude: 41.652286
Date Boring Started:	4/10/20		Auger Cutting	Pressuremeter	Longitude: -88.612229
Date Boring Completed:	4/10/20		Split-Spoon	Shelby Tube	Drill Rig: Geoprobe 7822DT
Logged By:	J.W.		Rock Core	Hand Auger	Remarks:
Drilling Contractor:	Rubino Engineering, Inc.			No Recovery	

The stratification lines represent approximate boundaries. The transition may be gradual.
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425 Shepard Drive
Elgin, IL 60123
Telephone: 847-931-1555
Fax: 847-931-1560

LOG OF BORING B-07

Rubino Job No.:	G20.029	Drilling Method:	3 ¼ Hollow Stem Auger	WATER LEVELS***	
Project:	Latham Street Reconstruction	Sampling Method:	Split Spoon	While Drilling	6 ft
Location:	Sandhurst Dr to Center St	Hammer Type:	Automatic	Upon Completion	N/A
City, State:	Sandwich, Illinois	Boring Location:	NB lane of Latham Street	Delay	N/A
Client:	Hampton, Lenzini and Renwick, Inc.		9 feet west from center line		

Station: N/A
Offset: N/A

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch	Moisture, %	STANDARD PENETRATION TEST DATA / STRENGTH, tsf	Additional Remarks
	0					Approximately 10 inches of ASPHALT					
						Approximately 4 inches of SUBBASE STONE					
						Medium stiff, brown silty CLAY, trace sand and gravel			28		5% Organic Content
				1	16			1 2 2 N=4	28		Qp=1.5 tsf 3% Organic Content
				2	16		CL	2 3 4 N=7	27		Qp=2.3 tsf 2% Organic Content
	5					*Increased percentage of sand observed at approximately 6 feet BEG*					
				3	10			2 2 4 N=6	16		Qp=1.0 tsf
						End of boring at approximately 7½ feet below existing grade.					

Moisture: ✕ PL: ◪ LL: ✚ (0 / 25 / 50)
STRENGTH, tsf: ▲ Qu ✳ Qp (0 / 2.0 / 4.0)

Completion Depth:	7.5 ft	Sample Types:	Latitude: 41.650985
Date Boring Started:	4/10/20	Auger Cutting	Longitude: -88.612141
Date Boring Completed:	4/10/20	Split-Spoon	Drill Rig: Geoprobe 7822DT
Logged By:	J.W.	Rock Core	Remarks:
Drilling Contractor:	Rubino Engineering, Inc.	Pressuremeter, Shelby Tube, Hand Auger, No Recovery	

The stratification lines represent approximate boundaries. The transition may be gradual.
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Rubino Engineering, Inc.
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Elgin, IL 60123
Telephone: 847-931-1555
Fax: 847-931-1560

LOG OF BORING B-08

Rubino Job No.:	G20.029	Drilling Method:	3 ¼ Hollow Stem Auger	WATER LEVELS***	
Project:	Latham Street Reconstruction	Sampling Method:	Split Spoon	While Drilling	6 ft
Location:	Sandhurst Dr to Center St	Hammer Type:	Automatic	Upon Completion	N/A
City, State:	Sandwich, Illinois	Boring Location:	SB lane of Latham Street	Delay	N/A
Client:	Hampton, Lenzini and Renwick, Inc.		5 feet west from center line		

Station: N/A
Offset: N/A

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch	Moisture, %	STANDARD PENETRATION TEST DATA / STRENGTH, tsf	Additional Remarks
	0					Approximately 8 inches of ASPHALT					
						Approximately 7 inches of SUBBASE STONE					
				1	10	Brown and gray silty CLAY, trace sand and gravel *Possible Fill*	CL	3 2 4 N=6	26		Qp=2.0 tsf 3% Organic Content
						Medium stiff, brown silty CLAY, trace sand and gravel					
				2	12			3 2 3 N=5	15		Qp=1.5 tsf
	5						CL				
						Increased percentage of sand observed at approximately 6 feet BEG					
				3	16			4 3 3 N=6	11		Qp=0.5 tsf
						End of boring at approximately 7½ feet below existing grade.					

STANDARD PENETRATION TEST DATA: Moisture, PL, LL (0, 25, 50)
STRENGTH, tsf: Qu, Qp (0, 2.0, 4.0)

Completion Depth:	7.5 ft	Sample Types:			Latitude: 41.649569
Date Boring Started:	4/10/20		Auger Cutting	Pressuremeter	Longitude: -88.612160
Date Boring Completed:	4/10/20		Split-Spoon	Shelby Tube	Drill Rig: Geoprobe 7822DT
Logged By:	J.W.		Rock Core	Hand Auger	Remarks:
Drilling Contractor:	Rubino Engineering, Inc.			No Recovery	

The stratification lines represent approximate boundaries. The transition may be gradual.
***Please reference the geotechnical report text for specific groundwater / dewatering recommendations.

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425 Shepard Drive
Elgin, IL 60123
Telephone: 847-931-1555
Fax: 847-931-1560

LOG OF BORING B-09

Rubino Job No.:	G20.029	Drilling Method:	3 ¼ Hollow Stem Auger	WATER LEVELS***	
Project:	Latham Street Reconstruction	Sampling Method:	Split Spoon	While Drilling	N/A
Location:	Sandhurst Dr to Center St	Hammer Type:	Automatic	Upon Completion	N/A
City, State:	Sandwich, Illinois	Boring Location:	NB lane of Latham Street	Delay	N/A
Client:	Hampton, Lenzini and Renwick, Inc.		5 feet east from center line		

Station: N/A
Offset: N/A

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch	Moisture, %	STANDARD PENETRATION TEST DATA / STRENGTH, tsf	Additional Remarks
	0					Approximately 10 inches of ASPHALT					
						Approximately 5 inches of SUBBASE STONE					
						Dark gray to brown silty CLAY, trace sand and gravel	CL				
				1	14	*Possible Fill*		3 3 4 N=7	27		Qp=2.5 tsf 3% Organic Content
						Medium stiff, brown silty CLAY, trace sand and gravel					
				2	12		CL	2 2 2 N=4	22		Qp=1.5 tsf
	5								14		
				3	14	Medium dense, brown well-graded SAND with gravel	SW	4 7 8 N=15	9		Qp=1.5 tsf
						End of boring at approximately 7½ feet below existing grade.					

STANDARD PENETRATION TEST DATA: Moisture, PL, LL (0, 25, 50); STRENGTH, tsf: Qu, Qp (0, 2.0, 4.0)

Completion Depth:	7.5 ft	Sample Types:	Pressuremeter
Date Boring Started:	4/10/20		Auger Cutting
Date Boring Completed:	4/10/20		Shelby Tube
Logged By:	J.W.		Split-Spoon
Drilling Contractor:	Rubino Engineering, Inc.		Hand Auger
			Rock Core
			No Recovery

Latitude: 41.648195
Longitude: -88.612086
Drill Rig: Geoprobe 7822DT
Remarks:

The stratification lines represent approximate boundaries. The transition may be gradual.
***Please reference the geotechnical report text for specific groundwater / dewatering recommendations.

Rubino Engineering, Inc.
425 Shepard Drive
Elgin, IL 60123
Telephone: 847-931-1555
Fax: 847-931-1560

LOG OF BORING B-10

Rubino Job No.:	G20.029	Drilling Method:	3 ¼ Hollow Stem Auger	WATER LEVELS***	
Project:	Latham Street Reconstruction	Sampling Method:	Split Spoon	While Drilling	N/A
Location:	Sandhurst Dr to Center St	Hammer Type:	Automatic	Upon Completion	N/A
City, State:	Sandwich, Illinois	Boring Location:	SB lane of Latham Street	Delay	N/A
Client:	Hampton, Lenzini and Renwick, Inc.		10 feet west from center line		

Station: N/A
Offset: N/A

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch	Moisture, %	STANDARD PENETRATION TEST DATA / STRENGTH, tsf	Additional Remarks
	0					Approximately 10 inches of ASPHALT					
						Approximately 6 inches of SUBBASE STONE					
						FILL: dark brown silty clay with asphalt					
				1	14			3 3 3 N=6	18		3% Organic Content
						Medium stiff, brown silty CLAY, trace sand and gravel			17		Qp = 2.5 tsf
				2	12		CL	2 2 4 N=6	26		Qp=1.5 tsf 5% Organic Content
	5										
				3	14			2 2 4 N=6	14		Qp=1.5 tsf
						End of boring at approximately 7½ feet below existing grade.					

Moisture: × PL: ◪ LL: ✚ (0 – 25 – 50)
STRENGTH, tsf: ▲ Qu ✳ Qp (0 – 2.0 – 4.0)

Completion Depth:	7.5 ft
Date Boring Started:	4/10/20
Date Boring Completed:	4/10/20
Logged By:	J.W.
Drilling Contractor:	Rubino Engineering, Inc.

Sample Types:
- Auger Cutting
- Split-Spoon
- Rock Core
- Pressuremeter
- Shelby Tube
- Hand Auger
- No Recovery

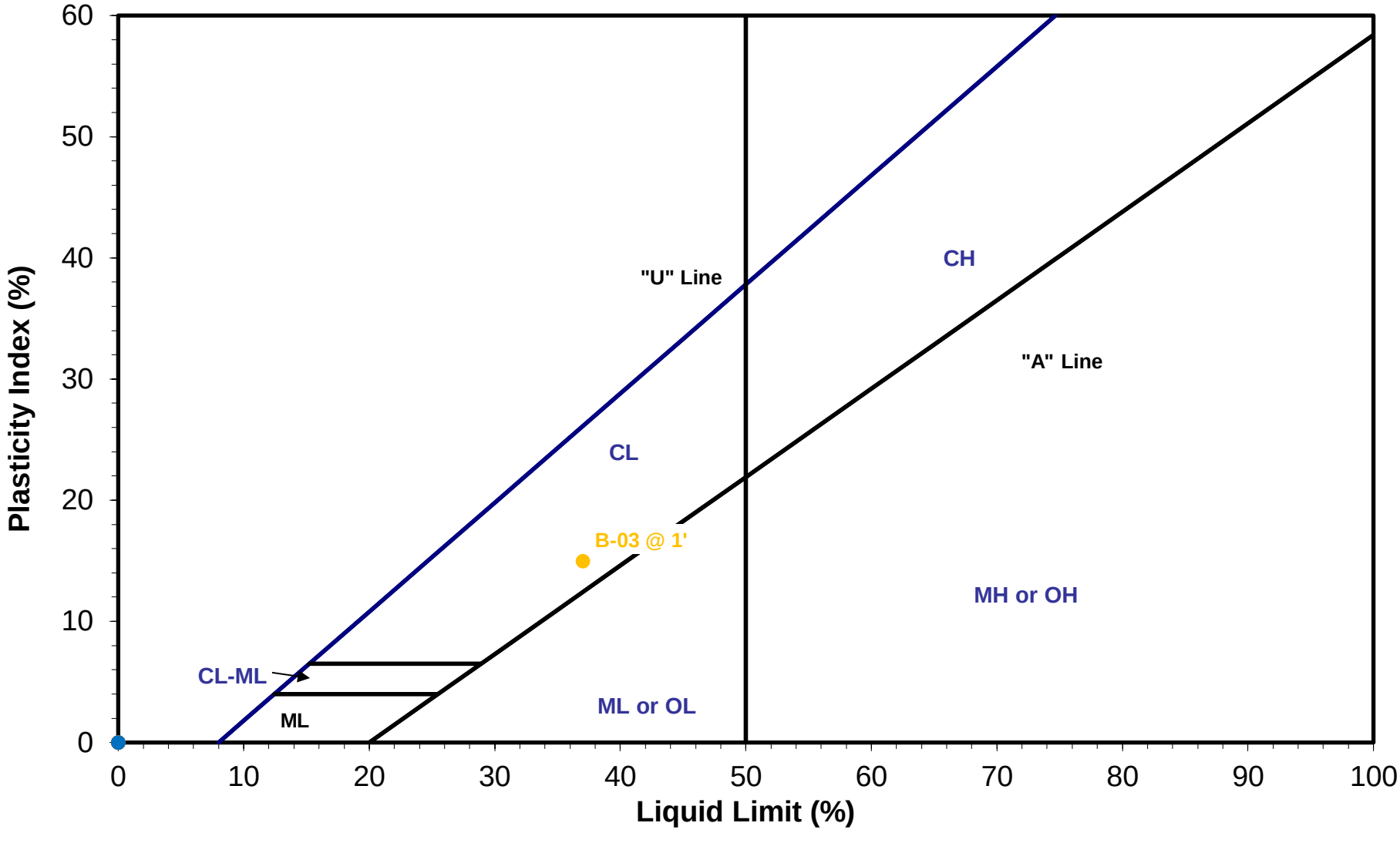
Latitude: 41.646714
Longitude: -88.612113
Drill Rig: Geoprobe 7822DT
Remarks:

The stratification lines represent approximate boundaries. The transition may be gradual.
***Please reference the geotechnical report text for specific groundwater / dewatering recommendations.

Appendix G – Laboratory Results

rubino ENGINEERING INC.

Report of Atterberg Limits Test (ASTM D4318 / AASHTO T89 / AASHTO T90)



Boring #	B-03 @ 1'					
LL	37					
PL	22					
PI	15					

Project: Latham Steet Reconstruction
Location: Sandwich, IL
Client: Hampton, Lenzini and Renwick, Inc.
Project #: G20.029

MIDLAND STANDARD ENGINEERING & TESTING, INC.
410 Nolen Drive
South Elgin, Illinois 60177
(847) 844-1895 f (847) 844-3875

March 20, 2021

Mr. Randall G. Newkirk, P.E.
Hampton Lenzini and Renwick, Inc.
380 Shepard Drive
Elgin, Illinois 60123

Re: Full Depth Reclamation Cement Mix Design
Latham Street – STP Improvements
Sandwich, IL
MSET File No. 21210

Dear Mr. Newkirk:

Midland Standard Engineering & Testing, Inc. has completed the laboratory testing and mix designs required for the referenced projects.

Purpose

The purpose of this work is to establish a mix design to mill the existing bituminous pavement to a depth of 5" and pulverize any remaining pavement and stabilized base stone to a depth of 12". The bituminous concrete pavement is to be milled prior to the base treatment. The pulverized material will be mixed with water and cement to meet project strength requirements. Target unconfined compressive strengths of the compacted materials of 300 psi and 500 psi after 7 days were considered. Seven day, saturated strengths are to be a minimum of 250psi.

Scope of Work

Representative samples of the pavement and granular base materials along the alignments were obtained and brought to our laboratory and prepared for mix design evaluation. Materials were blended and characterized by grain size and sand equivalent testing. The blended material was subjected to Laboratory Compaction Characterization Using Standard Effort, AASHTO T-134 Method B to determine the optimum moisture content for compaction. The blended material, prepared to the optimum moisture content was then mixed with Type I Cement at a range of application rates and compacted to determine the unconfined strength. These samples were prepared and moist cured for a period of seven (7) days in accordance with ASTM D 1633. Comparison samples of the blended materials were subjected to Vacuum Saturation Method for Prediction of Freeze-Thaw Durability of Stabilized materials, IHR-401 prior to unconfined strength testing

Pavement Materials

The existing section indicating the pavement sections were indicated in the geoptechnical report prepared by Rubino Engineering, Inc. dated May 6, 2020.

> Cores and borings made along the alignment encountered 8 to 10 inches of asphalt pavement over 4 top 7 inches of subbase stone. At the north end of the alignment (B-1) , full depth asphalt (10") was encountered. No Base stone.

PLANNED REHABILITATION

Latham Street

Full Depth Reclamation of the stabilzed base and subgrade is to be pulverized and mixed with Type I cement. ***Pre-pulverization of the section should be included in the scope of work.*** . The pulverized base will be prepared to the optimum moisture content for compaction, then treated by addition of Type I cement at the rate defined by this mix design. The treated materials will then be re-compacted with a delay no more than 30 minutes, to a minimum density, defined by the mix design to provide the strength required to enhance the pavement base. An HMA pavement of binder and surface courses will complete the rehabilitation.

Laboratory Test Summary

Pavement and Base –poorly graded sand with silt and gravel and Asphalt Grindings

USCS:	SP
AASHTO:	A-1-a
Plasticity Index:	NP
Passing #4 Sieve:	52%
Passing #200 Sieve:	1.0%
Sand Equivalent:	38
Maximum Dry Density:	133.7 pcf
Optimum Moisture:	7.3%

Unconfined Strength Testing

The blended materials, prepared to the optimum moisture content were mixed with Type I Cement at a range of application rates and compacted to determine the unconfined strength. These samples were prepared and moist cured for a period of seven (7) days in accordance with ASTM D 1633. Comparison samples of the blended materials were subjected to Vacuum Saturation Method for Prediction of Freeze-Thaw Durability of Stabilized materials, IHR-401 prior to unconfined strength testing.

			Unconfined Compressive Strength, psi	
Treatment Rate	Dry Density, pcf	Moisture, %	7 Day	7 Day, saturated
3%	132.8	9.0	185	176
5%	134.1	8.7	397	339
7%	135.6	8.4	653	582

Results

Based on the results of the laboratory testing, the FDR materials attained the 300 psi and 500 psi strength within the target range of cement addition at 4.0% and 5.75%. The field, application should be increased by 0.5% to compensate for construction loss and changes. The ***treatment rate, maximum dry density and optimum moisture content*** of the treated materials is established as follows:

Treatment Rate:	4.5%	6.25%
Design Strength:	300 psi	500 psi
Structural Coefficient:	0.18	0.22
Treatment Depth:	**12"**	**12"**
Section Structure No.:	2.16	2.64
Application Rate:	**54 lbs/sy**	**75 lbs/sy**
Target Density:	133.5 pcf	134.5 pcf
Field Moisture Content:	8.9 ±1%	8.6 ±1%

Hot Mix Asphalt Pavement Section

The planned HMA pavement section is 2" surface over 3" binder. With the FDR stabilized base the Structural Number, Sn of the new pavement section will be 3.95 to 4.43 for the 300 psi and 500 psi FDR sections.

Treatment of the full depth bituminous section at core B-1 may be treated at the design FDR rate.

Closure

Thank you for the opportunity to provide our services on this project. Please contact me with any questions you have regarding our test data.

Very truly yours,
MIDLAND STANDARD ENGINEERING & TESTING, INC.

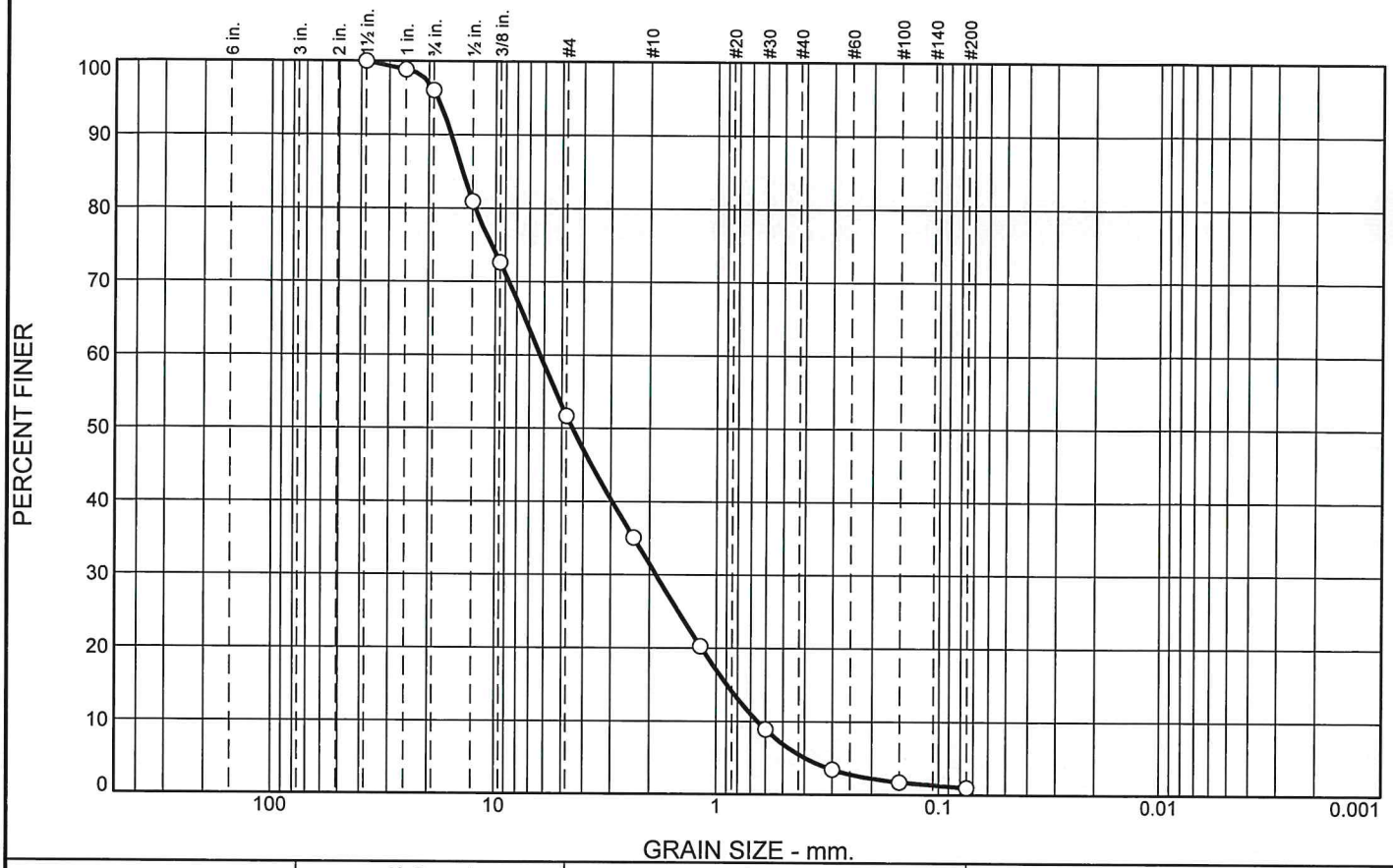
William D. Prigge, P.E.
President
WDP/mlj
APPENDIX

APPENDIX

Full Depth Reclamation

Blend:Particle Size Distribution Report
Blend: Compaction Test Report
Sand Equivalent
Unconfined Compression Tests
Strength vs Treatment Rate

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	3.9	44.4	20.2	26.0	4.5	1.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1-1/2"	100.0		
1"	98.9		
3/4"	96.1		
1/2"	80.9		
3/8"	72.6		
#4	51.7		
#8	35.1		
#16	20.3		
#30	8.9		
#50	3.4		
#100	1.7		
#200	1.0		

* (no specification provided)

Soil Description

poorly graded sand with gravel and Asphalt Grindings

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 15.8906 D_{85}= 14.0877 D_{60}= 6.2599
D_{50}= 4.4657 D_{30}= 1.8699 D_{15}= 0.8939
D_{10}= 0.6515 C_u= 9.61 C_c= 0.86

Classification

USCS= SP AASHTO= A-1-a

Remarks

Location: Latham Street
Sample Number: Blend

Date: 3/2/21

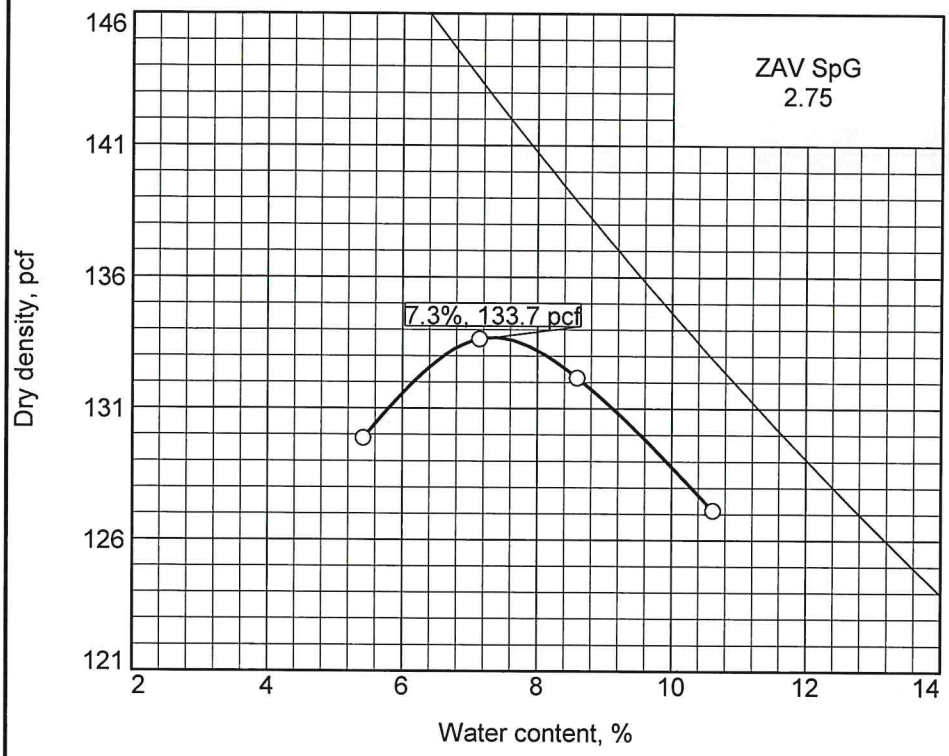
MSET

Client: Hampton Lenzini and Renwick Inc.
Project: Latham Street STP Improvements

Project No: 21210 **Figure**

Tested By: MN **Checked By:** WDP

COMPACTION TEST REPORT



Curve No.
BLEND

Test Specification:
ASTM D 698-12 Method B Standard

Hammer Wt.: 5.5 lb.
Hammer Drop: 12 in.
Number of Layers: three
Blows per Layer: 25
Mold Size: 0.03333 cu. ft.

Test Performed on Material Passing 3/8 in. **Sieve**

Soil Data

NM _____ **Sp.G.** 2.75
LL NV **PI** NP
%>3/8 in. 27.4 **%<#200** 1.0
USCS SP **AASHTO** A-1-a

TESTING DATA

	1	2	3	4	5	6
WM + WS	5954.7	6049.6	6367.5	6323.6		
WM	3884.9	3884.9	4197.6	4197.6		
WW + T #1	898.2	1011.3	1056.8	979.9		
WD + T #1	861.3	956.0	987.7	903.6		
TARE #1	180.4	181.5	183.1	184.9		
WW + T #2						
WD + T #2						
TARE #2						
MOISTURE	5.4	7.1	8.6	10.6		
DRY DENSITY	129.9	133.6	132.2	127.1		

TEST RESULTS

Maximum dry density = 133.7 pcf

Optimum moisture = 7.3 %

Material Description

poorly graded sand with gravel and Asphalt Grindings

Project No. 21210 **Client:** Hampton Lenzini and Renwick Inc.
Project: Latham Street STP Improvements

o **Location:** Latham Street **Sample Number:** Blend

Midland Standard Engineering & Testing

South Elgin, IL

Remarks:

Figure

Tested By: MN **Checked By:** WDP

Sand Equivalent

AASHTO T 176 / ASTM D 2419

APF014

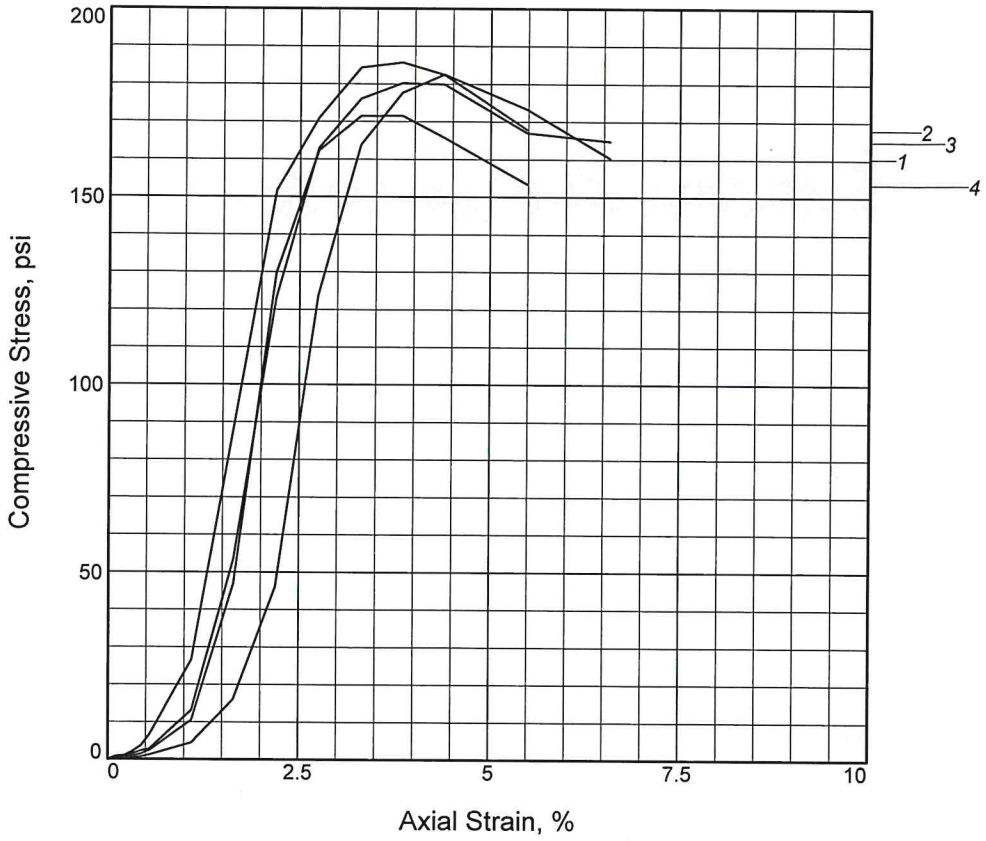
FILE NO.: 21210
DATE SAMPLED: 3/2/21
DATE RECEIVED: 3/2/21
DATE TESTED: 3/15/21

Project: Latham Street STP Improvements
Location: Sandwich, Illinois
Client: Hampton, Lenzini & Renwick, Inc.

Soil Description: poorly graded sand with gravel and Asphalt Grindings
Source: Latham Street - Blend (in town & out of town)

	Trial 1	Trail 2	Trial 3	*Average*
Clay Reading	9.2	8.7	8.5	
Sand Reading	3.3	3.4	3.3	
Sand Equivalent	36	40	39	**38**

UNCONFINED COMPRESSION TEST



Sample No.	1	2	3	4
Unconfined strength, psi	182.53	185.65	180.21	171.57
Undrained shear strength, psi	91.27	92.82	90.11	85.78
Failure strain, %	4.4	3.8	3.8	3.8
Strain rate, in./min.	0.037	0.037	0.037	0.037
Water content, %	9.0	8.7	9.2	9.1
Wet density, pcf	145.1	145.0	144.9	143.8
Dry density, pcf	133.1	133.4	132.8	131.8
Saturation, %	85.4	83.4	86.0	82.4
Void ratio	0.2902	0.2869	0.2930	0.3021
Specimen diameter, in.	4.00	4.00	4.00	4.00
Specimen height, in.	4.56	4.56	4.56	4.56
Height/diameter ratio	1.14	1.14	1.14	1.14

Description: poorly graded sand with gravel and Asphalt Grindings

LL = NV	**PL =**	**PI =** NP	**GS=** 2.75	**Type:** Remolded

Project No.: 21210
Date Sampled: 3/2/21

Remarks:
Samples 1 & 2 unsaturated
Samples 3 & 4 saturated

Figure 1

Client: Hampton Lenzini and Renwick Inc.

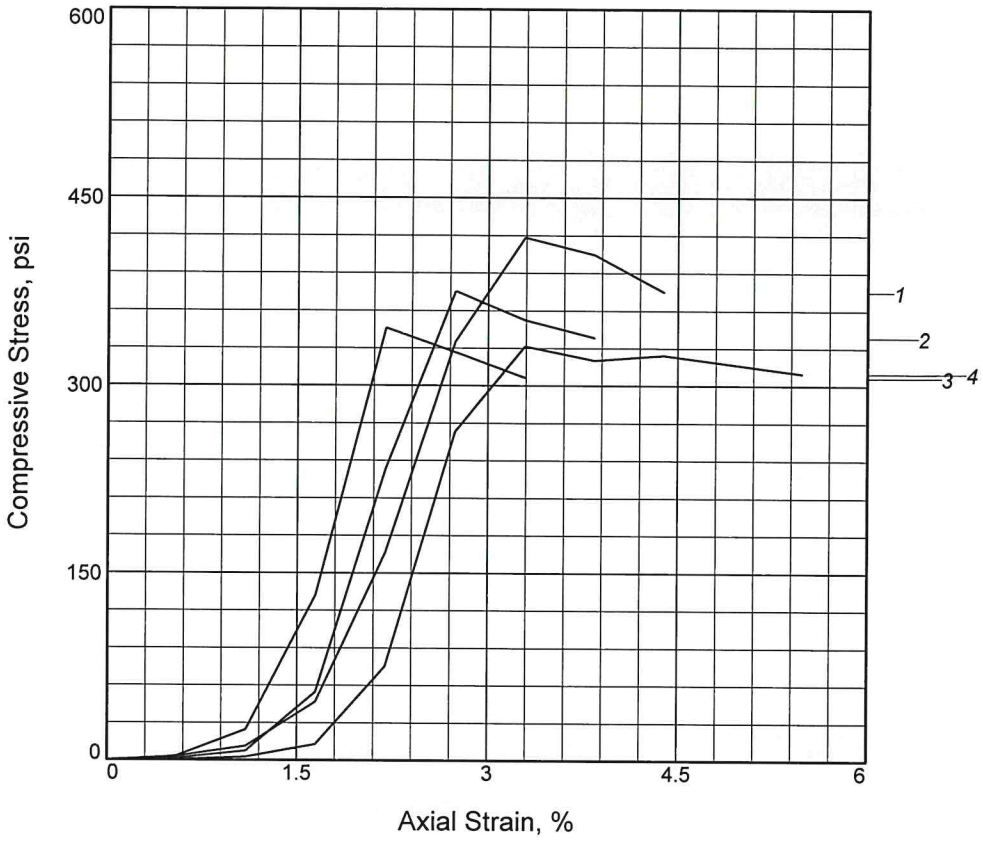
Project: Latham Street STP Improvements

Location: Latham Street
Sample Number: BLEND +3% cement

UNCONFINED COMPRESSION TEST
Midland Standard Engineering & Testing
South Elgin, IL

Tested By: MN **Checked By:** WDP

UNCONFINED COMPRESSION TEST



Sample No.	1	2	3	4
Unconfined strength, psi	418.35	375.37	346.20	331.62
Undrained shear strength, psi	209.18	187.69	173.10	165.81
Failure strain, %	3.3	2.7	2.2	3.3
Strain rate, in./min.	0.037	0.037	0.037	0.037
Water content, %	8.6	8.9	8.6	8.7
Wet density, pcf	146.1	145.8	145.9	145.3
Dry density, pcf	134.5	133.9	134.3	133.7
Saturation, %	85.7	86.7	85.4	84.3
Void ratio	0.2760	0.2826	0.2785	0.2839
Specimen diameter, in.	4.00	4.00	4.00	4.00
Specimen height, in.	4.56	4.56	4.56	4.56
Height/diameter ratio	1.14	1.14	1.14	1.14

Description: poorly graded sand with gravel and Asphalt Grindings, 5% cement

LL = NV	**PL =**	**PI =** NP	**GS=** 2.75	**Type:** Remplded

Project No.: 21210
Date Sampled: 3/2/21

Remarks:
Samples 1 & 2 unsaturated
Samples 3 & 4 saturated

Figure 2

Client: Hampton Lenzini and Renwick Inc.

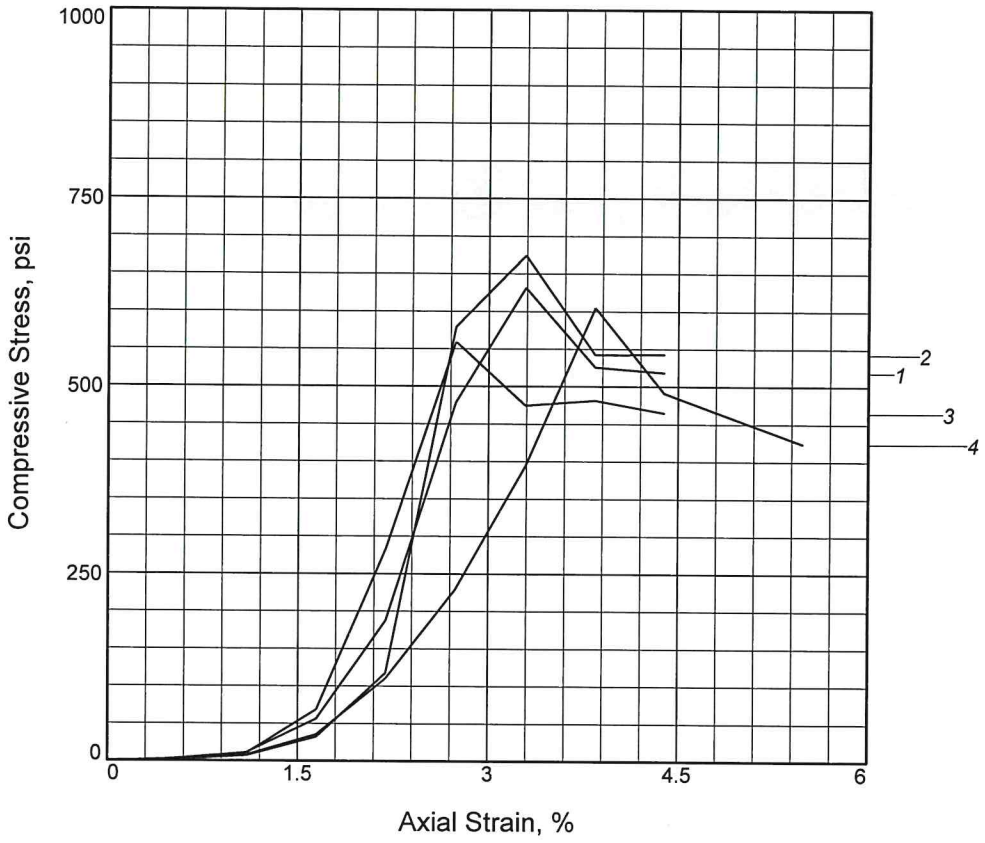
Project: Latham Street STP Improvements

Location: Latham Street
Sample Number: BLEND =5% cement

UNCONFINED COMPRESSION TEST
Midland Standard Engineering & Testing
South Elgin, IL

Tested By: MN **Checked By:** WDP

UNCONFINED COMPRESSION TEST



Sample No.	1	2	3	4
Unconfined strength, psi	631.38	674.09	559.34	605.07
Undrained shear strength, psi	315.69	337.05	279.67	302.54
Failure strain, %	3.3	3.3	2.7	3.8
Strain rate, in./min.	0.037	0.037	0.037	0.037
Water content, %	8.5	8.2	8.4	8.3
Wet density, pcf	147.7	147.7	146.1	146.2
Dry density, pcf	136.2	136.4	134.8	135.1
Saturation, %	89.1	87.7	84.6	83.8
Void ratio	0.2609	0.2584	0.2739	0.2708
Specimen diameter, in.	4.00	4.00	4.00	4.00
Specimen height, in.	4.56	4.56	4.56	4.56
Height/diameter ratio	1.14	1.14	1.14	1.14

Description: poorly graded sand with gravel and Asphalt Grindings, 7% cement

LL = NV	**PL =**	**PI =** NP	**GS=** 2.75	**Type:** Remolded

Project No.: 21210
Date Sampled: 3/2/21

Remarks:
Samples 1 & 2 unsaturated
Samples 3 & 4 saturated

Figure 3

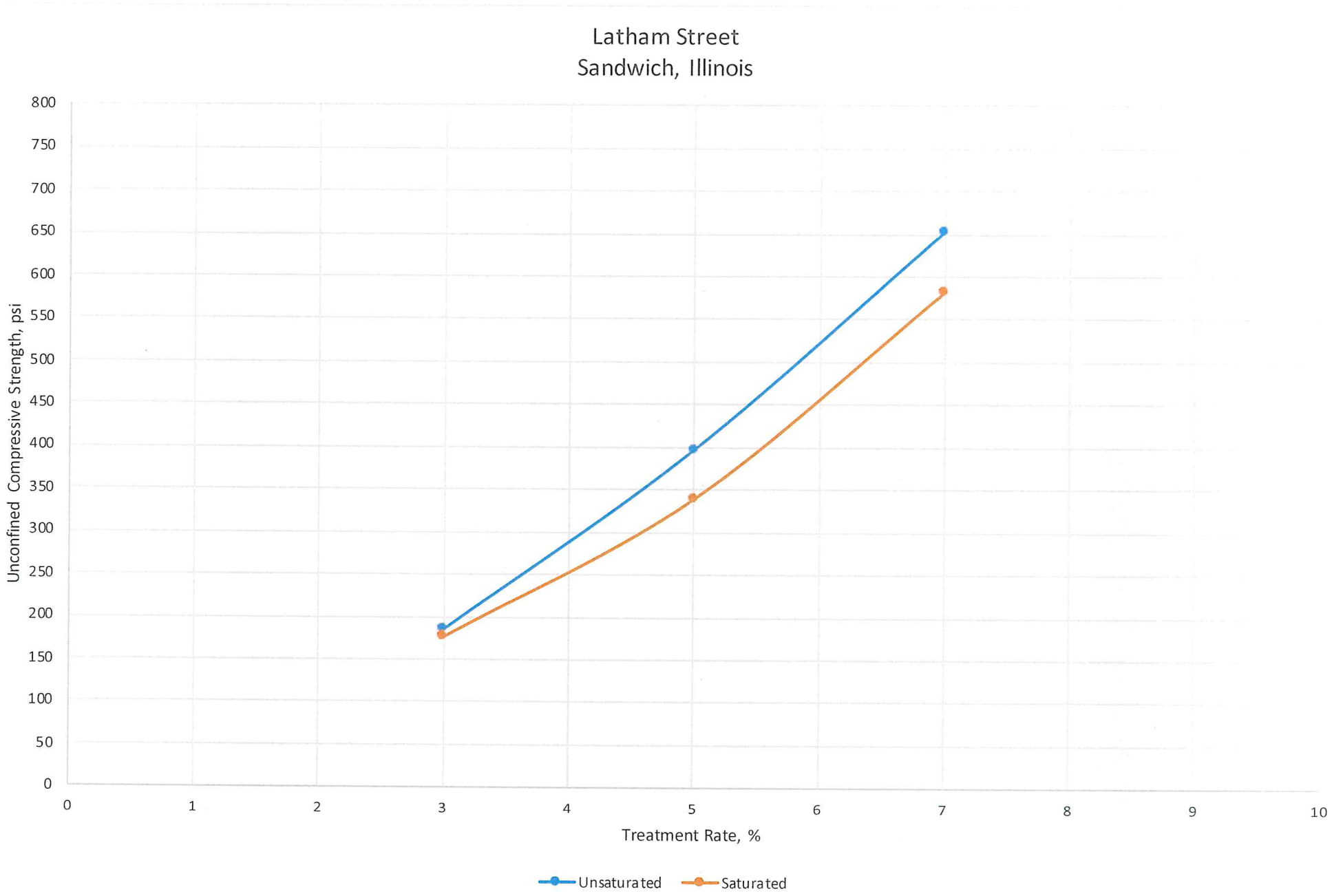
Client: Hampton Lenzini and Renwick Inc.

Project: Latham Street STP Improvements

Location: Latham Street
Sample Number: BLEND + 7% cement

UNCONFINED COMPRESSION TEST
Midland Standard Engineering & Testing
South Elgin, IL

Tested By: MN **Checked By:** WDP


Latham Street
Sandwich, Illinois
Unconfined Compressive Strength, psi
800
750
700
650
600
550
500
450
400
350
300
250
200
150
100
50
0
0
1
2
3
4
5
6
7
8
9
10
Treatment Rate, %
Unsaturated
Saturated

BLENDED FINELY DIVIDED MINERALS (BDE)

Effective: April 1, 2021

Revise the second paragraph of Article 1010.01 of the Standard Specifications to read:

"Different sources or types of finely divided minerals shall not be mixed or used alternately in the same item of construction, except as a blended finely divided mineral product according to Article 1010.06."

Add the following article to Section 1010 of the Standard Specifications:

"**1010.06 Blended Finely Divided Minerals.** Blended finely divided minerals shall be the product resulting from the blending or intergrinding of two or three finely divided minerals. Blended finely divided minerals shall be according to ASTM C 1697, except as follows.

(a) Blending shall be accomplished by mechanically or pneumatically intermixing the constituent finely divided minerals into a uniform mixture that is then discharged into a silo for storage or tanker for transportation.

(b) The blended finely divided mineral product will be classified according to its predominant constituent or the manufacturer's designation and shall meet the chemical requirements of its classification. The other finely divided mineral constituent(s) will not be required to conform to their individual standards."

80436

COMPENSABLE DELAY COSTS (BDE)

Effective: June 2, 2017
Revised: April 1, 2019

Revise Article 107.40(b) of the Standard Specifications to read:

"(b) Compensation. Compensation will not be allowed for delays, inconveniences, or damages sustained by the Contractor from conflicts with facilities not meeting the above definition; or if a conflict with a utility in an unanticipated location does not cause a shutdown of the work or a documentable reduction in the rate of progress exceeding the limits set herein. The provisions of Article 104.03 notwithstanding, compensation for delays caused by a utility in an unanticipated location will be paid according to the provisions of this Article governing minor and major delays or reduced rate of production which are defined as follows.

(1) Minor Delay. A minor delay occurs when the work in conflict with the utility in an unanticipated location is completely stopped for more than two hours, but not to exceed two weeks.

(2) Major Delay. A major delay occurs when the work in conflict with the utility in an unanticipated location is completely stopped for more than two weeks.

(3) Reduced Rate of Production Delay. A reduced rate of production delay occurs when the rate of production on the work in conflict with the utility in an unanticipated location decreases by more than 25 percent and lasts longer than seven calendar days."

Revise Article 107.40(c) of the Standard Specifications to read:

"(c) Payment. Payment for Minor, Major, and Reduced Rate of Production Delays will be made as follows.

(1) Minor Delay. Labor idled which cannot be used on other work will be paid for according to Article 109.04(b)(1) and (2) for the time between start of the delay and the minimum remaining hours in the work shift required by the prevailing practice in the area.

Equipment idled which cannot be used on other work, and which is authorized to standby on the project site by the Engineer, will be paid for according to Article 109.04(b)(4).

(2) Major Delay. Labor will be the same as for a minor delay.

Equipment will be the same as for a minor delay, except Contractor-owned equipment will be limited to two weeks plus the cost of move-out to either the

Contractor's yard or another job and the cost to re-mobilize, whichever is less. Rental equipment may be paid for longer than two weeks provided the Contractor presents adequate support to the Department (including lease agreement) to show retaining equipment on the job is the most economical course to follow and in the public interest.

(3) Reduced Rate of Production Delay. The Contractor will be compensated for the reduced productivity for labor and equipment time in excess of the 25 percent threshold for that portion of the delay in excess of seven calendar days. Determination of compensation will be in accordance with Article 104.02, except labor and material additives will not be permitted.

Payment for escalated material costs, escalated labor costs, extended project overhead, and extended traffic control will be determined according to Article 109.13."

Revise Article 108.04(b) of the Standard Specifications to read:

"(b) No working day will be charged under the following conditions.

(1) When adverse weather prevents work on the controlling item.

(2) When job conditions due to recent weather prevent work on the controlling item.

(3) When conduct or lack of conduct by the Department or its consultants, representatives, officers, agents, or employees; delay by the Department in making the site available; or delay in furnishing any items required to be furnished to the Contractor by the Department prevents work on the controlling item.

(4) When delays caused by utility or railroad adjustments prevent work on the controlling item.

(5) When strikes, lock-outs, extraordinary delays in transportation, or inability to procure critical materials prevent work on the controlling item, as long as these delays are not due to any fault of the Contractor.

(6) When any condition over which the Contractor has no control prevents work on the controlling item."

Revise Article 109.09(f) of the Standard Specifications to read:

"(f) Basis of Payment. After resolution of a claim in favor of the Contractor, any adjustment in time required for the work will be made according to Section 108. Any adjustment in the costs to be paid will be made for direct labor, direct materials, direct equipment, direct jobsite overhead, direct offsite overhead, and other direct costs allowed by the resolution. Adjustments in costs will not be made for interest charges, loss of anticipated profit, undocumented loss of efficiency, home office overhead and unabsorbed overhead

other than as allowed by Article 109.13, lost opportunity, preparation of claim expenses and other consequential indirect costs regardless of method of calculation.

The above Basis of Payment is an essential element of the contract and the claim cost recovery of the Contractor shall be so limited."

Add the following to Section 109 of the Standard Specifications.

"**109.13 Payment for Contract Delay.** Compensation for escalated material costs, escalated labor costs, extended project overhead, and extended traffic control will be allowed when such costs result from a delay meeting the criteria in the following table.

Contract Type	Cause of Delay	Length of Delay
Working Days	Article 108.04(b)(3) or Article 108.04(b)(4)	No working days have been charged for two consecutive weeks.
Completion Date	Article 108.08(b)(1) or Article 108.08(b)(7)	The Contractor has been granted a minimum two week extension of contract time, according to Article 108.08.

Payment for each of the various costs will be according to the following.

(a) Escalated Material and/or Labor Costs. When the delay causes work, which would have otherwise been completed, to be done after material and/or labor costs have increased, such increases will be paid. Payment for escalated material costs will be limited to the increased costs substantiated by documentation furnished by the Contractor. Payment for escalated labor costs will be limited to those items in Article 109.04(b)(1) and (2), except the 35 percent and 10 percent additives will not be permitted.

(b) Extended Project Overhead. For the duration of the delay, payment for extended project overhead will be paid as follows.

(1) Direct Jobsite and Offsite Overhead. Payment for documented direct jobsite overhead and documented direct offsite overhead, including onsite supervisory and administrative personnel, will be allowed according to the following table.

Original Contract Amount	Supervisory and Administrative Personnel
Up to $5,000,000	One Project Superintendent
Over $ 5,000,000 - up to $25,000,000	One Project Manager, One Project Superintendent or Engineer, and One Clerk
Over $25,000,000 - up to $50,000,000	One Project Manager, One Project Superintendent, One Engineer, and

	One Clerk
Over $50,000,000	One Project Manager, Two Project Superintendents, One Engineer, and One Clerk

(2) Home Office and Unabsorbed Overhead. Payment for home office and unabsorbed overhead will be calculated as 8 percent of the total delay cost.

(c) Extended Traffic Control. Traffic control required for an extended period of time due to the delay will be paid for according to Article 109.04.

When an extended traffic control adjustment is paid under this provision, an adjusted unit price as provided for in Article 701.20(a) for increase or decrease in the value of work by more than ten percent will not be paid.

Upon payment for a contract delay under this provision, the Contractor shall assign subrogation rights to the Department for the Department's efforts of recovery from any other party for monies paid by the Department as a result of any claim under this provision. The Contractor shall fully cooperate with the Department in its efforts to recover from another party any money paid to the Contractor for delay damages under this provision."

80384

CORRUGATED PLASTIC PIPE (CULVERT AND STORM SEWER) (BDE)

Effective: January 1, 2021

Revise Tables IIIA and IIIB of Article 542.03 and the storm sewers tables of Article 550.03 of the Standard Specifications to read:

(SEE TABLES ON NEXT 10 PAGES)

"PIPE CULVERTS
TABLE IIIA: PLASTIC PIPE PERMITTED
FOR A GIVEN PIPE DIAMETER AND FILL HEIGHT OVER THE TOP OF THE PIPE

Nominal Diameter (in.)	Type 1					Type 2					Type 3					Type 4				
	Fill Height: 3' and less, with 1' min					Fill Height: Greater than 3', not exceeding 10'					Fill Height: Greater than 10', not exceeding 15'					Fill Height: Greater than 15', not exceeding 20'				
	PVC	CPVC	PE	CPE	CPP	PVC	CPVC	PE	CPE	CPP	PVC	CPVC	PE	CPE	CPP	PVC	CPVC	PE	CPE	CPP
10	X	QPL	X	QPL	NA	X	QPL	X	QPL	NA	X	QPL	X	QPL	NA	X	QPL	X	QPL	NA
12	X	QPL	X	QPL	QPL	X	QPL	X	QPL	QPL	X	QPL	X	QPL	QPL	X	QPL	X	QPL	QPL
15	X	QPL	NA	QPL	QPL	X	QPL	NA	QPL	QPL	X	QPL	NA	QPL	QPL	X	QPL	NA	QPL	QPL
18	X	QPL	X	QPL	QPL	X	QPL	X	QPL	QPL	X	QPL	X	QPL	QPL	X	QPL	X	QPL	QPL
21	X	QPL	NA	QPL	NA	X	QPL	NA	QPL	NA	X	QPL	NA	QPL	NA	X	QPL	NA	NA	NA
24	X	QPL	X	QPL	QPL	X	QPL	X	QPL	QPL	X	QPL	X	QPL	QPL	X	QPL	X	NA	QPL
27	X	NA	NA	NA	NA	X	NA	NA	NA	NA	X	NA	NA	NA	NA	X	NA	NA	NA	NA
30	X	QPL	X	QPL	QPL	X	QPL	X	QPL	QPL	X	QPL	X	QPL	QPL	X	QPL	X	NA	QPL
36	X	QPL	X	QPL	QPL	X	QPL	X	QPL	QPL	X	QPL	X	QPL	QPL	X	QPL	X	NA	QPL
42	X	NA	X	QPL	QPL	X	NA	X	QPL	QPL	X	NA	X	NA	QPL	X	NA	X	NA	NA
48	X	NA	X	QPL	QPL	X	NA	X	QPL	QPL	X	NA	X	NA	QPL	X	NA	X	NA	NA
54	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
60	NA	NA	NA	QPL	QPL	NA	NA	NA	QPL	QPL	NA	NA	NA	NA	QPL	NA	NA	NA	NA	NA

Notes:
PVC Polyvinyl Chloride Pipe
CPVC Corrugated Polyvinyl Chloride Pipe with a Smooth Interior
PE Polyethylene Pipe
CPE Corrugated Polyethylene Pipe with a Smooth Interior
CPP Corrugated Polypropylene Pipe with a Smooth Interior
X Permitted
QPL Permitted for the producers approved for that diameter in the Department's qualified product list
NA Not Acceptable

PIPE CULVERTS (metric)
TABLE IIIA: PLASTIC PIPE PERMITTED
FOR A GIVEN PIPE DIAMETER AND FILL HEIGHT OVER THE TOP OF THE PIPE

Nominal Diameter (mm)	Type 1					Type 2					Type 3					Type 4				
	Fill Height: 1 m and less, with 0.3 m min. cover					Fill Height: Greater than 1 m, not exceeding 3 m					Fill Height: Greater than 3 m, not exceeding 4.5 m					Fill Height: Greater than 4.5 m, not exceeding 6 m				
	PVC	CPVC	PE	CPE	CPP	PVC	CPVC	PE	CPE	CPP	PVC	CPVC	PE	CPE	CPP	PVC	CPVC	PE	CPE	CPP
250	X	QPL	X	QPL	NA	X	QPL	X	QPL	NA	X	QPL	X	QPL	NA	X	QPL	X	QPL	NA
300	X	QPL	X	QPL	QPL	X	QPL	X	QPL	QPL	X	QPL	X	QPL	QPL	X	QPL	X	QPL	QPL
375	X	QPL	NA	QPL	QPL	X	QPL	NA	QPL	QPL	X	QPL	NA	QPL	QPL	X	QPL	NA	QPL	QPL
450	X	QPL	X	QPL	QPL	X	QPL	X	QPL	QPL	X	QPL	X	QPL	QPL	X	QPL	X	QPL	QPL
525	X	QPL	NA	QPL	NA	X	QPL	NA	QPL	NA	X	QPL	NA	QPL	NA	X	QPL	NA	NA	NA
600	X	QPL	X	QPL	QPL	X	QPL	X	QPL	QPL	X	QPL	X	QPL	QPL	X	QPL	X	NA	QPL
675	X	NA	NA	NA	NA	X	NA	NA	NA	NA	X	NA	NA	NA	NA	X	NA	NA	NA	NA
750	X	QPL	X	QPL	QPL	X	QPL	X	QPL	QPL	X	QPL	X	QPL	QPL	X	QPL	X	NA	QPL
900	X	QPL	X	QPL	QPL	X	QPL	X	QPL	QPL	X	QPL	X	QPL	QPL	X	QPL	X	NA	QPL
1050	X	NA	X	QPL	QPL	X	NA	X	QPL	QPL	X	NA	X	NA	QPL	X	NA	X	NA	NA
1200	X	NA	X	QPL	QPL	X	NA	X	QPL	QPL	X	NA	X	NA	QPL	X	NA	X	NA	NA
1350	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1500	NA	NA	NA	QPL	QPL	NA	NA	NA	QPL	QPL	NA	NA	NA	NA	QPL	NA	NA	NA	NA	NA

Notes:
- PVC Polyvinyl Chloride Pipe
- CPVC Corrugated Polyvinyl Chloride Pipe with a Smooth Interior
- PE Polyethylene Pipe
- CPE Corrugated Polyethylene Pipe with a Smooth Interior
- CPP Corrugated Polypropylene Pipe with a Smooth Interior
- X Permitted
- QPL Permitted for the producers approved for that diameter in the Department's qualified product list
- NA Not Acceptable

PIPE CULVERTS
TABLE IIIB: PLASTIC PIPE PERMITTED
FOR A GIVEN PIPE DIAMETER AND FILL HEIGHT OVER THE TOP OF THE PIPE

Nominal Diameter (in.)	Type 5					Type 6			Type 7		
	Fill Height: Greater than 20', not exceeding 25'					Fill Height: Greater than 25', not exceeding 30'			Fill Height: Greater than 30', not exceeding 35'		
	PVC	CPVC	PE	CPE	CPP	PVC	CPVC	PE	PVC	CPVC	PE
10	X	QPL	X	QPL	NA	X	QPL	X	X	QPL	X
12	X	QPL	X	QPL	QPL	X	QPL	X	X	QPL	X
15	X	QPL	NA	NA	QPL	X	QPL	NA	X	QPL	NA
18	X	QPL	X	NA	NA	X	QPL	X	X	QPL	X
21	X	QPL	NA	NA	NA	X	QPL	NA	X	QPL	NA
24	X	QPL	X	NA	NA	X	QPL	X	X	QPL	X
27	X	NA	NA	NA	NA	X	NA	NA	X	NA	NA
30	X	QPL	X	NA	QPL	X	QPL	X	X	QPL	X
36	X	QPL	X	NA	NA	X	QPL	X	X	QPL	X
42	X	NA	X	NA	NA	X	NA	X	X	NA	X
48	X	NA	X	NA	NA	X	NA	X	X	NA	X
54	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
60	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
PVC Polyvinyl Chloride Pipe
CPVC Corrugated Polyvinyl Chloride Pipe with a Smooth Interior
CPP Corrugated Polypropylene Pipe with a Smooth Interior
X Permitted
QPL Permitted for the producers approved for that diameter in the Department's qualified product list
NA Not Acceptable

PIPE CULVERTS (metric)
TABLE IIIB: PLASTIC PIPE PERMITTED
FOR A GIVEN PIPE DIAMETER AND FILL HEIGHT OVER THE TOP OF THE PIPE

Nominal Diameter (mm)	Type 5					Type 6			Type 7		
	Fill Height: Greater than 6 m, not exceeding 7.5 m					Fill Height: Greater than 7.5 m, not exceeding 9 m			Fill Height: Greater than 9 m, not exceeding 10.5 m		
	PVC	CPVC	PE	CPE	CPP	PVC	CPVC	PE	PVC	CPVC	PE
250	X	QPL	X	QPL	NA	X	QPL	X	X	QPL	X
300	X	QPL	X	QPL	QPL	X	QPL	X	X	QPL	X
375	X	QPL	NA	NA	QPL	X	QPL	NA	X	QPL	NA
450	X	QPL	X	NA	NA	X	QPL	X	X	QPL	X
525	X	QPL	NA	NA	NA	X	QPL	NA	X	QPL	NA
600	X	QPL	X	NA	NA	X	QPL	X	X	QPL	X
675	X	NA	NA	NA	NA	X	NA	NA	X	NA	NA
750	X	QPL	X	NA	QPL	X	QPL	X	X	QPL	X
900	X	QPL	X	NA	NA	X	QPL	X	X	QPL	X
1000	X	NA	X	NA	NA	X	NA	X	X	NA	X
1200	X	NA	X	NA	NA	X	NA	X	X	NA	X
1350	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
PVC Polyvinyl Chloride Pipe
CPVC Corrugated Polyvinyl Chloride Pipe with a Smooth Interior
CPP Corrugated Polypropylene Pipe with a Smooth Interior
X Permitted
QPL Permitted for the producers approved for that diameter in the Department's qualified product list
NA Not Acceptable

STORM SEWERS
KIND OF MATERIAL PERMITTED AND STRENGTH REQUIRED
FOR A GIVEN PIPE DIAMETERS AND FILL HEIGHTS OVER THE TOP OF THE PIPE

Nominal Diameter in.	Type 1								Type 2							
	Fill Height: 3' and less, with 1' min.								Fill Height: Greater than 3', not exceeding 10'							
	RCCP	CSP	ESCP	PVC	CPVC	PE	CPE	CPP	RCCP	CSP	ESCP	PVC	CPVC	PE	CPE	CPP
10	NA	3	X	X	QPL	X	QPL	NA	NA	1	*X	X	QPL	X	QPL	NA
12	IV	NA	X	X	QPL	X	QPL	QPL	II	1	*X	X	QPL	X	QPL	QPL
15	IV	NA	NA	X	QPL	NA	QPL	QPL	II	1	*X	X	QPL	NA	QPL	QPL
18	IV	NA	NA	X	QPL	X	QPL	QPL	II	2	X	X	QPL	X	QPL	QPL
21	III	NA	NA	X	QPL	NA	QPL	NA	II	2	X	X	QPL	NA	QPL	NA
24	III	NA	NA	X	QPL	X	QPL	QPL	II	2	X	X	QPL	X	QPL	QPL
27	III	NA	NA	X	NA	NA	NA	NA	II	3	X	X	NA	NA	NA	NA
30	IV	NA	NA	X	QPL	X	QPL	QPL	II	3	X	X	QPL	X	QPL	QPL
33	III	NA	NA	NA	NA	NA	NA	NA	II	NA	X	NA	NA	NA	NA	NA
36	III	NA	NA	X	QPL	X	QPL	QPL	II	NA	X	X	QPL	X	QPL	QPL
42	II	NA	X	X	NA	X	QPL	QPL	II	NA	X	X	NA	X	QPL	QPL
48	II	NA	X	X	NA	X	QPL	QPL	II	NA	X	X	NA	X	QPL	QPL
54	II	NA	NA	NA	NA	NA	NA	NA	II	NA	NA	NA	NA	NA	NA	NA
60	II	NA	NA	NA	NA	NA	QPL	QPL	II	NA	NA	NA	NA	NA	QPL	QPL
66	II	NA	NA	NA	NA	NA	NA	NA	II	NA	NA	NA	NA	NA	NA	NA
72	II	NA	NA	NA	NA	NA	NA	NA	II	NA	NA	NA	NA	NA	NA	NA
78	II	NA	NA	NA	NA	NA	NA	NA	II	NA	NA	NA	NA	NA	NA	NA
84	II	NA	NA	NA	NA	NA	NA	NA	II	NA	NA	NA	NA	NA	NA	NA
90	II	NA	NA	NA	NA	NA	NA	NA	II	NA	NA	NA	NA	NA	NA	NA
96	II	NA	NA	NA	NA	NA	NA	NA	III	NA	NA	NA	NA	NA	NA	NA
102	II	NA	NA	NA	NA	NA	NA	NA	III	NA	NA	NA	NA	NA	NA	NA
108	II	NA	NA	NA	NA	NA	NA	NA	III	NA	NA	NA	NA	NA	NA	NA

RCCP Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe
CSP Concrete Sewer, Storm drain, and Culvert Pipe (number in column indicates strength class)
ESCP Extra Strength Clay Pipe
PVC Polyvinyl Chloride Pipe
CPVC Corrugated Polyvinyl Chloride Pipe with a Smooth Interior
PE Polyethylene Pipe
CPE Corrugated Polyethylene Pipe with a Smooth Interior
CPP Corrugated Polypropylene Pipe with a Smooth Interior
X Permitted
QPL Permitted for the producers approved for that diameter in the Department's qualified product list
NA Not Acceptable
* May also use Standard Strength Clay Pipe

STORM SEWERS (metric)
KIND OF MATERIAL PERMITTED AND STRENGTH REQUIRED
FOR A GIVEN PIPE DIAMETERS AND FILL HEIGHTS OVER THE TOP OF THE PIPE

Nominal Diameter mm	Type 1								Type 2							
	Fill Height: 1 m and less, with 300 mm min,								Fill Height: Greater than 1 m, not exceeding 3 m							
	RCCP	CSP	ESCP	PVC	CPVC	PE	CPE	CPP	RCCP	CSP	ESCP	PVC	CPVC	PE	CPE	CPP
250	NA	3	X	X	QPL	X	QPL	NA	NA	1	*X	X	QPL	X	QPL	NA
300	IV	NA	X	X	QPL	X	QPL	QPL	II	1	*X	X	QPL	X	QPL	QPL
375	IV	NA	NA	X	QPL	NA	QPL	QPL	II	1	*X	X	QPL	NA	QPL	QPL
450	IV	NA	NA	X	QPL	X	QPL	QPL	II	2	X	X	QPL	X	QPL	QPL
525	III	NA	NA	X	QPL	NA	QPL	NA	II	2	X	X	QPL	NA	QPL	NA
600	III	NA	NA	X	QPL	X	QPL	QPL	II	2	X	X	QPL	X	QPL	QPL
675	III	NA	NA	X	NA	NA	NA	NA	II	3	X	X	NA	NA	NA	NA
750	IV	NA	NA	X	QPL	X	QPL	QPL	II	3	X	X	QPL	X	QPL	QPL
825	III	NA	NA	NA	NA	NA	NA	NA	II	NA	X	NA	NA	NA	NA	NA
900	III	NA	NA	X	QPL	X	QPL	QPL	II	NA	X	X	QPL	X	QPL	QPL
1050	II	NA	X	X	NA	X	QPL	QPL	II	NA	X	X	NA	X	QPL	QPL
1200	II	NA	X	X	NA	X	QPL	QPL	II	NA	X	X	NA	X	QPL	QPL
1350	II	NA	NA	NA	NA	NA	NA	NA	II	NA	NA	NA	NA	NA	NA	NA
1500	II	NA	NA	NA	NA	NA	QPL	QPL	II	NA	NA	NA	NA	NA	QPL	QPL
1650	II	NA	NA	NA	NA	NA	NA	NA	II	NA	NA	NA	NA	NA	NA	NA
1800	II	NA	NA	NA	NA	NA	NA	NA	II	NA	NA	NA	NA	NA	NA	NA
1950	II	NA	NA	NA	NA	NA	NA	NA	II	NA	NA	NA	NA	NA	NA	NA
2100	II	NA	NA	NA	NA	NA	NA	NA	II	NA	NA	NA	NA	NA	NA	NA
2250	II	NA	NA	NA	NA	NA	NA	NA	II	NA	NA	NA	NA	NA	NA	NA
2400	II	NA	NA	NA	NA	NA	NA	NA	III	NA	NA	NA	NA	NA	NA	NA
2550	II	NA	NA	NA	NA	NA	NA	NA	III	NA	NA	NA	NA	NA	NA	NA
2700	II	NA	NA	NA	NA	NA	NA	NA	III	NA	NA	NA	NA	NA	NA	NA

RCCP Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe
CSP Concrete Sewer, Storm drain, and Culvert Pipe (number in column indicates strength class)
ESCP Extra Strength Clay Pipe
PVC Polyvinyl Chloride Pipe
CPVC Corrugated Polyvinyl Chloride Pipe with a Smooth Interior
PE Polyethylene Pipe
CPE Corrugated Polyethylene Pipe with a Smooth Interior
CPP Corrugated Polypropylene Pipe with a Smooth Interior
X Permitted
QPL Permitted for the producers approved for that diameter in the Department's qualified product list
NA Not Acceptable
* May also use Standard Strength Clay Pipe

STORM SEWERS
KIND OF MATERIAL PERMITTED AND STRENGTH REQUIRED
FOR A GIVEN PIPE DIAMETERS AND FILL HEIGHTS OVER THE TOP OF THE PIPE

Nominal Diameter in.	Type 3								Type 4							
	Fill Height: Greater than 10' not exceeding 15'								Fill Height: Greater than 15' not exceeding 20'							
	RCCP	CSP	ESCP	PVC	CPVC	PE	CPE	CPP	RCCP	CSP	ESCP	PVC	CPVC	PE	CPE	CPP
10	NA	2	X	X	QPL	X	QPL	NA	NA	3	X	X	QPL	X	QPL	NA
12	III	2	X	X	QPL	X	QPL	QPL	IV	NA	NA	X	QPL	X	QPL	QPL
15	III	3	X	X	QPL	NA	QPL	QPL	IV	NA	NA	X	QPL	NA	QPL	QPL
18	III	NA	X	X	QPL	X	QPL	QPL	IV	NA	NA	X	QPL	X	QPL	QPL
21	III	NA	NA	X	QPL	NA	QPL	NA	IV	NA	NA	X	QPL	NA	NA	NA
24	III	NA	NA	X	QPL	X	QPL	QPL	IV	NA	NA	X	QPL	X	NA	QPL
27	III	NA	NA	X	NA	NA	NA	NA	IV	NA	NA	X	NA	NA	NA	NA
30	III	NA	NA	X	QPL	X	QPL	QPL	IV	NA	NA	X	QPL	X	NA	QPL
33	III	NA	NA	NA	NA	NA	NA	NA	IV	NA	NA	NA	NA	NA	NA	NA
36	III	NA	NA	X	QPL	X	QPL	QPL	IV	NA	NA	X	QPL	X	NA	QPL
42	III	NA	NA	X	NA	X	NA	QPL	IV	NA	NA	X	NA	X	NA	NA
48	III	NA	NA	X	NA	X	NA	QPL	IV	NA	NA	X	NA	X	NA	NA
54	III	NA	NA	NA	NA	NA	NA	NA	IV	NA	NA	NA	NA	NA	NA	NA
60	III	NA	NA	NA	NA	NA	NA	QPL	IV	NA	NA	NA	NA	NA	NA	NA
66	III	NA	NA	NA	NA	NA	NA	NA	IV	NA	NA	NA	NA	NA	NA	NA
72	III	NA	NA	NA	NA	NA	NA	NA	IV	NA	NA	NA	NA	NA	NA	NA
78	III	NA	NA	NA	NA	NA	NA	NA	IV	NA	NA	NA	NA	NA	NA	NA
84	III	NA	NA	NA	NA	NA	NA	NA	IV	NA	NA	NA	NA	NA	NA	NA
90	III	NA	NA	NA	NA	NA	NA	NA	1680	NA	NA	NA	NA	NA	NA	NA
96	III	NA	NA	NA	NA	NA	NA	NA	1690	NA	NA	NA	NA	NA	NA	NA
102	III	NA	NA	NA	NA	NA	NA	NA	1700	NA	NA	NA	NA	NA	NA	NA
108	1360	NA	NA	NA	NA	NA	NA	NA	1710	NA	NA	NA	NA	NA	NA	NA

RCCP Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe (RCCP with a number instead of a Roman numeral shall be furnished according to AASHTO M170 Section 6. This number represents the D-load to produce a 0.01 in crack.)
CSP Concrete Sewer, Storm drain, and Culvert Pipe (number in column indicates strength class)
ESCP Extra Strength Clay Pipe
PVC Polyvinyl Chloride Pipe
CPVC Corrugated Polyvinyl Chloride Pipe with a Smooth Interior
PE Polyethylene Pipe
CPE Corrugated Polyethylene Pipe with a Smooth Interior
CPP Corrugated Polypropylene Pipe with a Smooth Interior
X Permitted
QPL Permitted for the producers approved for that diameter in the Department's qualified product list
NA Not Acceptable

STORM SEWERS (metric)
KIND OF MATERIAL PERMITTED AND STRENGTH REQUIRED
FOR A GIVEN PIPE DIAMETERS AND FILL HEIGHTS OVER THE TOP OF THE PIPE

Nominal Diameter mm	Type 3								Type 4							
	Fill Height: Greater than 3 m, not exceeding 4.5 m								Fill Height: Greater than 4.5 m, not exceeding 6 m							
	RCCP	CSP	ESCP	PVC	CPVC	PE	CPE	CPP	RCCP	CSP	ESCP	PVC	CPVC	PE	CPE	CPP
250	NA	2	X	X	QPL	X	QPL	NA	NA	3	X	X	QPL	X	QPL	NA
300	III	2	X	X	QPL	X	QPL	QPL	IV	NA	NA	X	QPL	X	QPL	QPL
375	III	3	X	X	QPL	NA	QPL	QPL	IV	NA	NA	X	QPL	NA	QPL	QPL
450	III	NA	X	X	QPL	X	QPL	QPL	IV	NA	NA	X	QPL	X	QPL	QPL
525	III	NA	NA	X	QPL	NA	QPL	NA	IV	NA	NA	X	QPL	NA	NA	NA
600	III	NA	NA	X	QPL	X	QPL	QPL	IV	NA	NA	X	QPL	X	NA	QPL
675	III	NA	NA	X	NA	NA	NA	NA	IV	NA	NA	X	NA	NA	NA	NA
750	III	NA	NA	X	QPL	X	QPL	QPL	IV	NA	NA	X	QPL	X	NA	QPL
825	III	NA	NA	NA	NA	NA	NA	NA	IV	NA	NA	NA	NA	NA	NA	NA
900	III	NA	NA	X	QPL	X	QPL	QPL	IV	NA	NA	X	QPL	X	NA	QPL
1050	III	NA	NA	X	NA	X	NA	QPL	IV	NA	NA	X	NA	X	NA	NA
1200	III	NA	NA	X	NA	X	NA	QPL	IV	NA	NA	X	NA	X	NA	NA
1350	III	NA	NA	NA	NA	NA	NA	NA	IV	NA	NA	NA	NA	NA	NA	NA
1500	III	NA	NA	NA	NA	NA	NA	QPL	IV	NA	NA	NA	NA	NA	NA	NA
1650	III	NA	NA	NA	NA	NA	NA	NA	IV	NA	NA	NA	NA	NA	NA	NA
1800	III	NA	NA	NA	NA	NA	NA	NA	IV	NA	NA	NA	NA	NA	NA	NA
1950	III	NA	NA	NA	NA	NA	NA	NA	IV	NA	NA	NA	NA	NA	NA	NA
2100	III	NA	NA	NA	NA	NA	NA	NA	IV	NA	NA	NA	NA	NA	NA	NA
2250	III	NA	NA	NA	NA	NA	NA	NA	80	NA	NA	NA	NA	NA	NA	NA
2400	III	NA	NA	NA	NA	NA	NA	NA	80	NA	NA	NA	NA	NA	NA	NA
2550	III	NA	NA	NA	NA	NA	NA	NA	80	NA	NA	NA	NA	NA	NA	NA
2700	70	NA	NA	NA	NA	NA	NA	NA	80	NA	NA	NA	NA	NA	NA	NA

RCCP Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe (RCCP with a number instead of a Roman numeral shall be furnished according to AASHTO M170 Section 6. This number represents the D-load to produce a 25.4 micro-meter crack.)
CSP Concrete Sewer, Storm drain, and Culvert Pipe (number in column indicates strength class)
ESCP Extra Strength Clay Pipe
PVC Polyvinyl Chloride Pipe
CPVC Corrugated Polyvinyl Chloride Pipe with a Smooth Interior
PE Polyethylene Pipe
CPE Corrugated Polyethylene Pipe with a Smooth Interior
CPP Corrugated Polypropylene Pipe with a Smooth Interior
X Permitted
QPL Permitted for the producers approved for that diameter in the Department's qualified product list
NA Not Acceptable

STORM SEWERS
KIND OF MATERIAL PERMITTED AND STRENGTH REQUIRED
FOR A GIVEN PIPE DIAMETERS AND FILL HEIGHTS OVER THE TOP OF THE PIPE

Nominal Diameter in.	Type 5						Type 6				Type 7			
	Fill Height: Greater than 20', not exceeding 25'						Fill Height: Greater than 25', not exceeding 30'				Fill Height: Greater than 30', not exceeding 35'			
	RCCP	PVC	CPVC	PE	CPE	CPP	RCCP	PVC	CPVC	PE	RCCP	PVC	CPVC	PE
10	NA	X	QPL	X	QPL	NA	NA	X	QPL	X	NA	X	QPL	X
12	IV	X	QPL	X	QPL	QPL	V	X	QPL	X	V	X	QPL	X
15	IV	X	QPL	NA	NA	QPL	V	X	QPL	NA	V	X	QPL	NA
18	IV	X	QPL	X	NA	NA	V	X	QPL	X	V	X	QPL	X
21	IV	X	QPL	NA	NA	NA	V	X	QPL	NA	V	X	QPL	NA
24	IV	X	QPL	X	NA	NA	V	X	QPL	X	V	X	QPL	X
27	IV	X	NA	NA	NA	NA	V	X	NA	NA	V	X	NA	NA
30	IV	X	QPL	X	NA	QPL	V	X	QPL	X	V	X	QPL	X
33	IV	NA	NA	NA	NA	NA	V	NA	NA	NA	V	NA	NA	NA
36	IV	X	QPL	X	NA	NA	V	X	QPL	X	V	X	QPL	X
42	IV	X	NA	X	NA	NA	V	X	NA	X	V	X	NA	X
48	IV	X	NA	X	NA	NA	V	X	NA	X	V	X	NA	X
54	IV	NA	NA	NA	NA	NA	V	NA	NA	NA	V	NA	NA	NA
60	IV	NA	NA	NA	NA	NA	V	NA	NA	NA	V	NA	NA	NA
66	IV	NA	NA	NA	NA	NA	V	NA	NA	NA	V	NA	NA	NA
72	V	NA	NA	NA	NA	NA	V	NA	NA	NA	V	NA	NA	NA
78	2020	NA	NA	NA	NA	NA	2370	NA	NA	NA	2730	NA	NA	NA
84	2020	NA	NA	NA	NA	NA	2380	NA	NA	NA	2740	NA	NA	NA
90	2030	NA	NA	NA	NA	NA	2390	NA	NA	NA	2750	NA	NA	NA
96	2040	NA	NA	NA	NA	NA	2400	NA	NA	NA	2750	NA	NA	NA
102	2050	NA	NA	NA	NA	NA	2410	NA	NA	NA	2760	NA	NA	NA
108	2060	NA	NA	NA	NA	NA	2410	NA	NA	NA	2770	NA	NA	NA

RCCP Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe (RCCP with a number instead of a Roman numeral shall be furnished according to AASHTO M170 Section 6. This number represents the D-load to produce a 0.01 in crack.)
PVC Polyvinyl Chloride Pipe
CPVC Corrugated Polyvinyl Chloride Pipe with a Smooth Interior
PE Polyethylene Pipe
CPE Corrugated Polyethylene Pipe with a Smooth Interior
CPP Corrugated Polypropylene Pipe with a Smooth Interior
X Permitted
QPL Permitted for the producers approved for that diameter in the Department's qualified product list
NA Not Acceptable

STORM SEWERS (metric)
KIND OF MATERIAL PERMITTED AND STRENGTH REQUIRED
FOR A GIVEN PIPE DIAMETERS AND FILL HEIGHTS OVER THE TOP OF THE PIPE

Nominal Diameter mm	Type 5						Type 6				Type 7			
	Fill Height: Greater than 6 m, not exceeding 7.5 m						Fill Height: Greater than 7.5 m, not exceeding 9 m				Fill Height: Greater than 9 m, not exceeding 10.5 m			
	RCCP	PVC	CPVC	PE	CPE	CPP	RCCP	PVC	CPVC	PE	RCCP	PVC	CPVC	PE
250	NA	X	QPL	X	QPL	NA	NA	X	QPL	X	NA	X	QPL	X
300	IV	X	QPL	X	QPL	QPL	V	X	QPL	X	V	X	QPL	X
375	IV	X	QPL	NA	NA	QPL	V	X	QPL	NA	V	X	QPL	NA
450	IV	X	QPL	X	NA	NA	V	X	QPL	X	V	X	QPL	X
525	IV	X	QPL	NA	NA	NA	V	X	QPL	NA	V	X	QPL	NA
600	IV	X	QPL	X	NA	NA	V	X	QPL	X	V	X	QPL	X
675	IV	X	NA	NA	NA	NA	V	X	NA	NA	V	X	NA	NA
750	IV	X	QPL	X	NA	QPL	V	X	QPL	X	V	X	QPL	X
825	IV	NA	NA	NA	NA	NA	V	NA	NA	NA	V	NA	NA	NA
900	IV	X	QPL	X	NA	NA	V	X	QPL	X	V	X	QPL	X
1050	IV	X	NA	X	NA	NA	V	X	NA	X	V	X	NA	X
1200	IV	X	NA	X	NA	NA	V	X	NA	X	V	X	NA	X
1350	IV	NA	NA	NA	NA	NA	V	NA	NA	NA	V	NA	NA	NA
1500	IV	NA	NA	NA	NA	NA	V	NA	NA	NA	V	NA	NA	NA
1650	IV	NA	NA	NA	NA	NA	V	NA	NA	NA	V	NA	NA	NA
1800	V	NA	NA	NA	NA	NA	V	NA	NA	NA	V	NA	NA	NA
1950	100	NA	NA	NA	NA	NA	110	NA	NA	NA	130	NA	NA	NA
2100	100	NA	NA	NA	NA	NA	110	NA	NA	NA	130	NA	NA	NA
2250	100	NA	NA	NA	NA	NA	110	NA	NA	NA	130	NA	NA	NA
2400	100	NA	NA	NA	NA	NA	120	NA	NA	NA	130	NA	NA	NA
2550	100	NA	NA	NA	NA	NA	120	NA	NA	NA	130	NA	NA	NA
2700	100	NA	NA	NA	NA	NA	120	NA	NA	NA	130	NA	NA	NA

RCCP Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe (RCCP with a number instead of a Roman numeral shall be furnished according to AASHTO M170 Section 6. This number represents the D-load to produce a 25.4 micro-meter crack.)
PVC Polyvinyl Chloride Pipe
CPVC Corrugated Polyvinyl Chloride Pipe with a Smooth Interior
PE Polyethylene Pipe
CPE Corrugated Polyethylene Pipe with a Smooth Interior
CPP Corrugated Polypropylene Pipe with a Smooth Interior
X Permitted
QPL Permitted for the producers approved for that diameter in the Department's qualified product list
NA Not Acceptable"

Revise the first paragraph of Article 1040.03 of the Standard Specifications to read:

"**1040.03 Polyvinyl Chloride (PVC) Pipe.** Acceptance testing of PVC pipe and fittings shall be accomplished during the same construction season in which they are installed. The pipe shall meet the following additional requirements."

Revise Article 1040.04(b) of the Standard Specifications to read:

"(b) Corrugated PE Pipe with a Smooth Interior. The manufacturer shall be listed as compliant through the NTPEP program and the pipe shall be according to AASHTO M 294 (nominal size – 12 to 60 in. (300 to 1500 mm)). The pipe shall be Type S or D."

Revise the first paragraph of Article 1040.04(d) of the Standard Specifications to read:

"(d) PE Pipe with a Smooth Interior. The pipe shall be according to ASTM F 714 (DR 32.5) with a minimum cell classification of PE 335434 as defined in ASTM D 3350."

Revise the first paragraph of Article 1040.08 of the Standard Specifications to read:

"**1040.08 Polypropylene (PP) Pipe.** Storage and handling shall be according to the manufacturer's recommendations, except in no case shall the pipe be exposed to direct sunlight for more than six months. Acceptance testing of the pipe shall be accomplished during the same construction season in which it is installed. The pipe shall meet the following additional requirements."

80434

DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION (BDE)

Effective: September 1, 2000
Revised: March 2, 2019

FEDERAL OBLIGATION. The Department of Transportation, as a recipient of federal financial assistance, is required to take all necessary and reasonable steps to ensure nondiscrimination in the award and administration of contracts. Consequently, the federal regulatory provisions of 49 CFR Part 26 apply to this contract concerning the utilization of disadvantaged business enterprises. For the purposes of this Special Provision, a disadvantaged business enterprise (DBE) means a business certified by the Department in accordance with the requirements of 49 CFR Part 26 and listed in the Illinois Unified Certification Program (IL UCP) DBE Directory.

STATE OBLIGATION. This Special Provision will also be used by the Department to satisfy the requirements of the Business Enterprise for Minorities, Females, and Persons with Disabilities Act, 30 ILCS 575. When this Special Provision is used to satisfy state law requirements on 100 percent state-funded contracts, the federal government has no involvement in such contracts (not a federal-aid contract) and no responsibility to oversee the implementation of this Special Provision by the Department on those contracts. DBE participation on 100 percent state-funded contracts will not be credited toward fulfilling the Department's annual overall DBE goal required by the US Department of Transportation to comply with the federal DBE program requirements.

CONTRACTOR ASSURANCE. The Contractor makes the following assurance and agrees to include the assurance in each subcontract the Contractor signs with a subcontractor.

> The Contractor, subrecipient, or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The Contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of contracts funded in whole or in part with federal or state funds. Failure by the Contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate, which may include, but is not limited to:
>
> (a) Withholding progress payments;
>
> (b) Assessing sanctions;
>
> (c) Liquidated damages; and/or
>
> (d) Disqualifying the Contractor from future bidding as non-responsible.

OVERALL GOAL SET FOR THE DEPARTMENT. As a requirement of compliance with 49 CFR Part 26, the Department has set an overall goal for DBE participation in its federally assisted contracts. That goal applies to all federal-aid funds the Department will expend in its federally assisted contracts for the subject reporting fiscal year. The Department is required to make a

good faith effort to achieve the overall goal. The dollar amount paid to all approved DBE companies performing work called for in this contract is eligible to be credited toward fulfillment of the Department's overall goal.

CONTRACT GOAL TO BE ACHIEVED BY THE CONTRACTOR. This contract includes a specific DBE utilization goal established by the Department. The goal has been included because the Department has determined the work of this contract has subcontracting opportunities that may be suitable for performance by DBE companies. The determination is based on an assessment of the type of work, the location of the work, and the availability of DBE companies to do a part of the work. The assessment indicates, in the absence of unlawful discrimination and in an arena of fair and open competition, DBE companies can be expected to perform 9.00 % of the work. This percentage is set as the DBE participation goal for this contract. Consequently, in addition to the other award criteria established for this contract, the Department will only award this contract to a bidder who makes a good faith effort to meet this goal of DBE participation in the performance of the work. A bidder makes a good faith effort for award consideration if either of the following is done in accordance with the procedures set for in this Special Provision:

(a) The bidder documents enough DBE participation has been obtained to meet the goal or,

(b) The bidder documents a good faith effort has been made to meet the goal, even though the effort did not succeed in obtaining enough DBE participation to meet the goal.

DBE LOCATOR REFERENCES. Bidders shall consult the IL UCP DBE Directory as a reference source for DBE-certified companies. In addition, the Department maintains a letting and item specific DBE locator information system whereby DBE companies can register their interest in providing quotes on particular bid items advertised for letting. Information concerning DBE companies willing to quote work for particular contracts may be obtained by contacting the Department's Bureau of Small Business Enterprises at telephone number (217) 785-4611, or by visiting the Department's website at:
http://www.idot.illinois.gov/doing-business/certifications/disadvantaged-business-enterprise-certification/il-ucp-directory/index.

BIDDING PROCEDURES. Compliance with this Special Provision is a material bidding requirement and failure of the bidder to comply will render the bid not responsive.

The bidder shall submit a DBE Utilization Plan (form SBE 2026), and a DBE Participation Statement (form SBE 2025) for each DBE company proposed for the performance of work to achieve the contract goal, with the bid. If the Utilization Plan indicates the contract goal will not be met, documentation of good faith efforts shall also be submitted. The documentation of good faith efforts must include copies of each DBE and non-DBE subcontractor quote submitted to the bidder when a non-DBE subcontractor is selected over a DBE for work on the contract. The required forms and documentation must be submitted as a single .pdf file using the "Integrated Contractor Exchange (iCX)" application within the Department's "EBids System".

The Department will not accept a Utilization Plan if it does not meet the bidding procedures set forth herein and the bid will be declared not responsive. In the event the bid is declared not responsive, the Department may elect to cause the forfeiture of the penal sum of the bidder's proposal guaranty and may deny authorization to bid the project if re-advertised for bids.

GOOD FAITH EFFORT PROCEDURES. The contract will not be awarded until the Utilization Plan is approved. All information submitted by the bidder must be complete, accurate and adequately document enough DBE participation has been obtained or document the good faith efforts of the bidder, in the event enough DBE participation has not been obtained, before the Department will commit to the performance of the contract by the bidder. The Utilization Plan will be approved by the Department if the Utilization Plan documents sufficient commercially useful DBE work to meet the contract goal or the bidder submits sufficient documentation of a good faith effort to meet the contract goal pursuant to 49 CFR Part 26, Appendix A. This means the bidder must show that all necessary and reasonable steps were taken to achieve the contract goal. Necessary and reasonable steps are those which, by their scope, intensity and appropriateness to the objective, could reasonably be expected to obtain sufficient DBE participation, even if they were not successful. The Department will consider the quality, quantity, and intensity of the kinds of efforts the bidder has made. Mere *pro forma* efforts, in other words efforts done as a matter of form, are not good faith efforts; rather, the bidder is expected to have taken genuine efforts that would be reasonably expected of a bidder actively and aggressively trying to obtain DBE participation sufficient to meet the contract goal.

(a) The following is a list of types of action that the Department will consider as part of the evaluation of the bidder's good faith efforts to obtain participation. These listed factors are not intended to be a mandatory checklist and are not intended to be exhaustive. Other factors or efforts brought to the attention of the Department may be relevant in appropriate cases and will be considered by the Department.

(1) Soliciting through all reasonable and available means (e.g. attendance at pre-bid meetings, advertising and/or written notices) the interest of all certified DBE companies that have the capability to perform the work of the contract. The bidder must solicit this interest within sufficient time to allow the DBE companies to respond to the solicitation. The bidder must determine with certainty if the DBE companies are interested by taking appropriate steps to follow up initial solicitations.

(2) Selecting portions of the work to be performed by DBE companies in order to increase the likelihood that the DBE goals will be achieved. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate DBE participation, even when the Contractor might otherwise prefer to perform these work items with its own forces.

(3) Providing interested DBE companies with adequate information about the plans, specifications, and requirements of the contract in a timely manner to assist them in responding to a solicitation.

(4) a. Negotiating in good faith with interested DBE companies. It is the bidder's responsibility to make a portion of the work available to DBE subcontractors and suppliers and to select those portions of the work or material needs consistent with the available DBE subcontractors and suppliers, so as to facilitate DBE participation. Evidence of such negotiation includes the names, addresses, and telephone numbers of DBE companies that were considered; a description of the information provided regarding the plans and specifications for the work selected for subcontracting; and evidence as to why additional agreements could not be reached for DBE companies to perform the work.

b. A bidder using good business judgment would consider a number of factors in negotiating with subcontractors, including DBE subcontractors, and would take a firm's price and capabilities as well as contract goals into consideration. However, the fact that there may be some additional costs involved in finding and using DBE companies is not in itself sufficient reason for a bidder's failure to meet the contract DBE goal, as long as such costs are reasonable. Also the ability or desire of a bidder to perform the work of a contract with its own organization does not relieve the bidder of the responsibility to make good faith efforts. Bidders are not, however, required to accept higher quotes from DBE companies if the price difference is excessive or unreasonable. In accordance with the above Bidding Procedures, the documentation of good faith efforts must include copies of each DBE and non-DBE subcontractor quote submitted to the bidder when a non-DBE subcontractor was selected over a DBE for work on the contract.

(5) Not rejecting DBE companies as being unqualified without sound reasons based on a thorough investigation of their capabilities. The bidder's standing within its industry, membership in specific groups, organizations, or associations and political or social affiliations (for example union vs. non-union employee status) are not legitimate causes for the rejection or non-solicitation of bids in the bidder's efforts to meet the project goal.

(6) Making efforts to assist interested DBE companies in obtaining bonding, lines of credit, or insurance as required by the recipient or Contractor.

(7) Making efforts to assist interested DBE companies in obtaining necessary equipment, supplies, materials, or related assistance or services.

(8) Effectively using the services of available minority/women community organizations; minority/women contractors' groups; local, state, and federal minority/women business assistance offices; and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and placement of DBE companies.

(b) If the Department determines the bidder has made a good faith effort to secure the work commitment of DBE companies to meet the contract goal, the Department will award the contract provided it is otherwise eligible for award. If the Department determines the

bidder has failed to meet the requirements of this Special Provision or that a good faith effort has not been made, the Department will notify the responsible company official designated in the Utilization Plan that the bid is not responsive. The notification will also include a statement of reasons for the adverse determination. If the Utilization Plan is not approved because it is deficient as a technical matter, unless waived by the Department, the bidder will be notified and will be allowed no more than a five calendar day period to cure the deficiency.

(c) The bidder may request administrative reconsideration of an adverse determination by emailing the Department at "DOT.DBE.UP@illinois.gov" within the five calendar days after the receipt of the notification of the determination. The determination shall become final if a request is not made on or before the fifth calendar day. A request may provide additional written documentation or argument concerning the issues raised in the determination statement of reasons, provided the documentation and arguments address efforts made prior to submitting the bid. The request will be reviewed by the Department's Reconsideration Officer. The Reconsideration Officer will extend an opportunity to the bidder to meet in person to consider all issues of documentation and whether the bidder made a good faith effort to meet the goal. After the review by the Reconsideration Officer, the bidder will be sent a written decision within ten working days after receipt of the request for reconsideration, explaining the basis for finding that the bidder did or did not meet the goal or make adequate good faith efforts to do so. A final decision by the Reconsideration Officer that a good faith effort was made shall approve the Utilization Plan submitted by the bidder and shall clear the contract for award. A final decision that a good faith effort was not made shall render the bid not responsive.

CALCULATING DBE PARTICIPATION. The Utilization Plan values represent work anticipated to be performed and paid for upon satisfactory completion. The Department is only able to count toward the achievement of the overall goal and the contract goal the value of payments made for the work actually performed by DBE companies. In addition, a DBE must perform a commercially useful function on the contract to be counted. A commercially useful function is generally performed when the DBE is responsible for the work and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. The Department and Contractor are governed by the provisions of 49 CFR Part 26.55(c) on questions of commercially useful functions as it affects the work. Specific counting guidelines are provided in 49 CFR Part 26.55, the provisions of which govern over the summary contained herein.

(a) DBE as the Contractor: 100 percent goal credit for that portion of the work performed by the DBE's own forces, including the cost of materials and supplies. Work that a DBE subcontracts to a non-DBE does not count toward the DBE goals.

(b) DBE as a joint venture Contractor: 100 percent goal credit for that portion of the total dollar value of the contract equal to the distinct, clearly defined portion of the work performed by the DBE's own forces.

(c) DBE as a subcontractor: 100 percent goal credit for the work of the subcontract performed by the DBE's own forces, including the cost of materials and supplies, excluding the purchase of materials and supplies or the lease of equipment by the DBE subcontractor from the Contractor or its affiliates. Work that a DBE subcontractor in turn subcontracts to a non-DBE does not count toward the DBE goal.

(d) DBE as a trucker: 100 percent goal credit for trucking participation provided the DBE is responsible for the management and supervision of the entire trucking operation for which it is responsible. At least one truck owned, operated, licensed, and insured by the DBE must be used on the contract. Credit will be given for the following:

(1) The DBE may lease trucks from another DBE firm, including an owner-operator who is certified as a DBE. The DBE who leases trucks from another DBE receives credit for the total value of the transportation services the lessee DBE provides on the contract.

(2) The DBE may also lease trucks from a non-DBE firm, including from an owner-operator. The DBE who leases trucks from a non-DBE is entitled to credit only for the fee or commission is receives as a result of the lease arrangement.

(e) DBE as a material supplier:

(1) 60 percent goal credit for the cost of the materials or supplies purchased from a DBE regular dealer.

(2) 100 percent goal credit for the cost of materials of supplies obtained from a DBE manufacturer.

(3) 100 percent credit for the value of reasonable fees and commissions for the procurement of materials and supplies if not a DBE regular dealer or DBE manufacturer.

CONTRACT COMPLIANCE. Compliance with this Special Provision is an essential part of the contract. The Department is prohibited by federal regulations from crediting the participation of a DBE included in the Utilization Plan toward either the contract goal or the Department's overall goal until the amount to be applied toward the goals has been paid to the DBE. The following administrative procedures and remedies govern the compliance by the Contractor with the contractual obligations established by the Utilization Plan. After approval of the Utilization Plan and award of the contract, the Utilization Plan and individual DBE Participation Statements become part of the contract. If the Contractor did not succeed in obtaining enough DBE participation to achieve the advertised contract goal, and the Utilization Plan was approved and contract awarded based upon a determination of good faith, the total dollar value of DBE work calculated in the approved Utilization Plan as a percentage of the awarded contract value shall become the amended contract goal. All work indicated for performance by an approved DBE shall be performed, managed, and supervised by the DBE executing the DBE Participation Commitment Statement.

(a) NO AMENDMENT. No amendment to the Utilization Plan may be made without prior written approval from the Department's Bureau of Small Business Enterprises. All requests for amendment to the Utilization Plan shall be emailed to the Department at DOT.DBE.UP@illinois.gov.

(b) CHANGES TO WORK. Any deviation from the DBE condition-of-award or contract plans, specifications, or special provisions must be approved, in writing, by the Department as provided elsewhere in the Contract. The Contractor shall notify affected DBEs in writing of any changes in the scope of work which result in a reduction in the dollar amount condition-of-award to the contract. Where the revision includes work committed to a new DBE subcontractor, not previously involved in the project, then a Request for Approval of Subcontractor, Department form BC 260A or AER 260A, must be signed and submitted. If the commitment of work is in the form of additional tasks assigned to an existing subcontract, a new Request for Approval of Subcontractor will not be required. However, the Contractor must document efforts to assure the existing DBE subcontractor is capable of performing the additional work and has agreed in writing to the change.

(c) SUBCONTRACT. The Contractor must provide copies of DBE subcontracts to the Department upon request. Subcontractors shall ensure that all lower tier subcontracts or agreements with DBEs to supply labor or materials be performed in accordance with this Special Provision.

(d) ALTERNATIVE WORK METHODS. In addition to the above requirements for reductions in the condition of award, additional requirements apply to the two cases of Contractor-initiated work substitution proposals. Where the contract allows alternate work methods which serve to delete or create underruns in condition of award DBE work, and the Contractor selects that alternate method or, where the Contractor proposes a substitute work method or material that serves to diminish or delete work committed to a DBE and replace it with other work, then the Contractor must demonstrate one of the following:

(1) The replacement work will be performed by the same DBE (as long as the DBE is certified in the respective item of work) in a modification of the condition of award; or

(2) The DBE is aware its work will be deleted or will experience underruns and has agreed in writing to the change. If this occurs, the Contractor shall substitute other work of equivalent value to a certified DBE or provide documentation of good faith efforts to do so; or

(3) The DBE is not capable of performing the replacement work or has declined to perform the work at a reasonable competitive price. If this occurs, the Contractor shall substitute other work of equivalent value to a certified DBE or provide documentation of good faith efforts to do so.

(e) TERMINATION AND REPLACEMENT PROCEDURES. The Contractor shall not terminate or replace a DBE listed on the approved Utilization Plan, or perform with other forces work designated for a listed DBE except as provided in this Special Provision. The Contractor shall utilize the specific DBEs listed to perform the work and supply the materials for which each is listed unless the Contractor obtains the Department's written consent as provided in subsection (a) of this part. Unless Department consent is provided for termination of a DBE subcontractor, the Contractor shall not be entitled to any payment for work or material unless it is performed or supplied by the DBE in the Utilization Plan.

As stated above, the Contractor shall not terminate or replace a DBE subcontractor listed in the approved Utilization Plan without prior written consent. This includes, but is not limited to, instances in which the Contractor seeks to perform work originally designated for a DBE subcontractor with its own forces or those of an affiliate, a non-DBE firm, or with another DBE firm. Written consent will be granted only if the Bureau of Small Business Enterprises agrees, for reasons stated in its concurrence document, that the Contractor has good cause to terminate or replace the DBE firm. Before transmitting to the Bureau of Small Business Enterprises any request to terminate and/or substitute a DBE subcontractor, the Contractor shall give notice in writing to the DBE subcontractor, with a copy to the Bureau, of its intent to request to terminate and/or substitute, and the reason for the request. The Contractor shall give the DBE five days to respond to the Contractor's notice. The DBE so notified shall advise the Bureau and the Contractor of the reasons, if any, why it objects to the proposed termination of its subcontract and why the Bureau should not approve the Contractor's action. If required in a particular case as a matter of public necessity, the Bureau may provide a response period shorter than five days.

For purposes of this paragraph, good cause includes the following circumstances:

(1) The listed DBE subcontractor fails or refuses to execute a written contract;

(2) The listed DBE subcontractor fails or refuses to perform the work of its subcontract in a way consistent with normal industry standards. Provided, however, that good cause does not exist if the failure or refusal of the DBE subcontractor to perform its work on the subcontract results from the bad faith or discriminatory action of the Contractor;

(3) The listed DBE subcontractor fails or refuses to meet the Contractor's reasonable, nondiscriminatory bond requirements;

(4) The listed DBE subcontractor becomes bankrupt, insolvent, or exhibits credit unworthiness;

(5) The listed DBE subcontractor is ineligible to work on public works projects because of suspension and debarment proceedings pursuant 2 CFR Parts 180, 215 and 1200 or applicable state law.

(6) The Contractor has determined the listed DBE subcontractor is not a responsible contractor;

(7) The listed DBE subcontractor voluntarily withdraws from the projects and provides written notice to the Contractor of its withdrawal;

(8) The listed DBE is ineligible to receive DBE credit for the type of work required;

(9) A DBE owner dies or becomes disabled with the result that the listed DBE subcontractor is unable to complete its work on the contract;

(10) Other documented good cause that compels the termination of the DBE subcontractor. Provided, that good cause does not exist if the Contractor seeks to terminate a DBE it relied upon to obtain the contract so that the Contractor can self-perform the work for which the DBE contractor was engaged or so that the Contractor can substitute another DBE or non-DBE contractor after contract award.

When a DBE is terminated or fails to complete its work on the Contract for any reason, the Contractor shall make a good faith effort to find another DBE to substitute for the original DBE to perform at least the same amount of work under the contract as the terminated DBE to the extent needed to meet the established Contract goal. The good faith efforts shall be documented by the Contractor. If the Department requests documentation under this provision, the Contractor shall submit the documentation within seven days, which may be extended for an additional seven days if necessary at the request of the Contractor. The Department will provide a written determination to the Contractor stating whether or not good faith efforts have been demonstrated.

(f) FINAL PAYMENT. After the performance of the final item of work or delivery of material by a DBE and final payment therefore to the DBE by the Contractor, but not later than 30 calendar days after payment has been made by the Department to the Contractor for such work or material, the Contractor shall submit a DBE Payment Agreement on Department form SBE 2115 to the Resident Engineer. If full and final payment has not been made to the DBE, the DBE Payment Agreement shall indicate whether a disagreement as to the payment required exists between the Contractor and the DBE or if the Contractor believes the work has not been satisfactorily completed. If the Contractor does not have the full amount of work indicated in the Utilization Plan performed by the DBE companies indicated in the Utilization Plan and after good faith efforts are reviewed, the Department may deduct from contract payments to the Contractor the amount of the goal not achieved as liquidated and ascertained damages. The Contractor may request an administrative reconsideration of any amount deducted as damages pursuant to subsection (h) of this part.

(g) ENFORCEMENT. The Department reserves the right to withhold payment to the Contractor to enforce the provisions of this Special Provision. Final payment shall not be

made on the contract until such time as the Contractor submits sufficient documentation demonstrating achievement of the goal in accordance with this Special Provision or after liquidated damages have been determined and collected.

(h) RECONSIDERATION. Notwithstanding any other provision of the contract, including but not limited to Article 109.09 of the Standard Specifications, the Contractor may request administrative reconsideration of a decision to deduct the amount of the goal not achieved as liquidated damages. A request to reconsider shall be delivered to the Contract Compliance Section and shall be handled and considered in the same manner as set forth in paragraph (c) of "Good Faith Effort Procedures" of this Special Provision, except a final decision that a good faith effort was not made during contract performance to achieve the goal agreed to in the Utilization Plan shall be the final administrative decision of the Department. The result of the reconsideration process is not administratively appealable to the U.S. Department of Transportation.

80029

HOT-MIX ASPHALT – START OF PRODUCTION (BDE)

Effective: January 1, 2022

Add the following paragraph between the third and four paragraphs of Article 1030.10 of the Standard Specifications:

"When a test strip is not required, each HMA mixture with a quantity of 3,000 tons (2,750 metric tons) or more shall still be sampled on the first day of production: I-FIT and Hamburg wheel testing for High ESAL; I-FIT testing for Low ESAL. Within two working days after sampling the mixture, the Contractor shall deliver gyratory cylinders to the District laboratory for Department verification testing. The High ESAL mixture test results shall meet the requirements of Articles 1030.05(d)(3) and 1030.05(d)(4). The Low ESAL mixture test results shall meet the requirements of Article 1030.05(d)(4)."

80442

PORTLAND CEMENT CONCRETE – HAUL TIME (BDE)

Effective: July 1, 2020

Revise Article 1020.11(a)(7) of the Standard Specifications to read:

"(7) Haul Time. Haul time shall begin when the delivery ticket is stamped. The delivery ticket shall be stamped no later than five minutes after the addition of the mixing water to the cement, or after the addition of the cement to the aggregate when the combined aggregates contain free moisture in excess of two percent by weight (mass). If more than one batch is required for charging a truck using a stationary mixer, the time of haul shall start with mixing of the first batch. Haul time shall end when the truck is emptied for incorporation of the concrete into the work. The maximum haul time shall be as follows.

Concrete Temperature at Point of Discharge, °F (°C)	Maximum Haul Time 1/ (minutes)	
	Truck Mixer or Truck Agitator	Nonagitator Truck
50 - 64 (10 - 17.5)	90	45
> 64 (> 17.5) - without retarder	60	30
> 64 (> 17.5) - with retarder	90	45

1/ To encourage start-up testing for mix adjustments at the plant, the first two trucks will be allowed an additional 15 minutes haul time whenever such testing is performed.

For a mixture which is not mixed on the jobsite, a delivery ticket shall be required for each load. The following information shall be recorded on each delivery ticket: (1) ticket number; (2) name of producer and plant location; (3) contract number; (4) name of Contractor; (5) stamped date and time batched; (6) truck number; (7) quantity batched; (8) amount of admixture(s) in the batch; (9) amount of water in the batch; and (10) Department mix design number.

For concrete mixed in jobsite stationary mixers, the above delivery ticket may be waived, but a method of verifying the haul time shall be established to the satisfaction of the Engineer."

80430

SUBCONTRACTOR AND DBE PAYMENT REPORTING (BDE)

Effective: April 2, 2018

Add the following to Section 109 of the Standard Specifications.

"**109.14 Subcontractor and Disadvantaged Business Enterprise Payment Reporting.** The Contractor shall report all payments made to the following parties:

(a) first tier subcontractors;

(b) lower tier subcontractors affecting disadvantaged business enterprise (DBE) goal credit;

(c) material suppliers or trucking firms that are part of the Contractor's submitted DBE utilization plan.

The report shall be made through the Department's on-line subcontractor payment reporting system within 21 days of making the payment."

80397

SUBCONTRACTOR MOBILIZATION PAYMENTS (BDE)

Effective: November 2, 2017
Revised: April 1, 2019

Replace the second paragraph of Article 109.12 of the Standard Specifications with the following:

"This mobilization payment shall be made at least seven days prior to the subcontractor starting work. The amount paid shall be at the following percentage of the amount of the subcontract reported on form BC 260A submitted for the approval of the subcontractor's work.

Value of Subcontract Reported on Form BC 260A	Mobilization Percentage
Less than $10,000	25%
$10,000 to less than $20,000	20%
$20,000 to less than $40,000	18%
$40,000 to less than $60,000	16%
$60,000 to less than $80,000	14%
$80,000 to less than $100,000	12%
$100,000 to less than $250,000	10%
$250,000 to less than $500,000	9%
$500,000 to $750,000	8%
Over $750,000	7%"

80391

SURFACE TESTING OF PAVEMENTS – IRI (BDE)

Effective: January 1, 2021
Revised: January 1, 2022

Description. This work shall consist of testing the ride quality of the finished surface of pavements, according to Illinois Test Procedure 701, "Ride Quality Testing Using the International Roughness Index (IRI)". Work shall be according to Sections 406, 407, or 420 of the Standard Specifications, except as modified herein.

Hot-Mix Asphalt (HMA) Overlays

Add Article 406.03(n) to the Standard Specifications:

"(n) Pavement Surface Grinding Equipment.....1101.04"

Revise Article 406.11 of the Standard Specifications to read:

"**406.11 Surface Tests.** Prior to pavement improvements, the Engineer will measure the smoothness of the existing high-speed mainline pavement. The Contractor shall measure the smoothness of the finished high-speed mainline, low-speed mainline, and miscellaneous pavements within seven days of paving. Testing shall be performed in the presence of the Engineer and according to Illinois Test Procedure 701. The pavement will be identified as high-speed mainline, low-speed mainline, or miscellaneous as follows.

(a) Test Sections

(1) High-Speed Mainline Pavement. High-speed mainline pavement shall consist of pavements, ramps, and loops with a posted speed limit greater than 45 mph. These sections shall be tested with an inertial profiling system (IPS).

(2) Low-Speed Mainline Pavement. Low-speed mainline pavement shall consist of pavements, ramps, and loops with a posted speed limit of 45 mph or less. These sections shall be tested with an IPS and will be analyzed using the rolling 16 ft (5 m) straightedge simulation in ProVAL.

(3) Miscellaneous Pavement. Miscellaneous pavement includes segments that either cannot readily be tested by an IPS or conditions beyond the control of the contractor preclude the achievement of smoothness levels typically achievable with mainline pavement construction. This may include the following examples or as determined by the Engineer.

(a) Pavement on horizontal curves with a centerline radius of curvature of less than or equal to 1,000 ft (300 m) and the pavement within the superelevation transition of such curves;

(b) Pavement on vertical curves having a length less than or equal to 200 ft (60 m) in combination with an algebraic change in tangent grade greater than or equal to 3 percent as may occur on urban ramps or other constricted-space facilities;

(c) The first and last 50 ft (15 m) of a pavement section where the Contractor is not responsible for the adjoining surface;

(d) Intersections and the 25 ft (7.6 m) before and after an intersection or end of radius return;

(e) Variable width pavements;

(f) Side street returns, to the end of radius return;

(g) Crossovers;

(h) Connector pavement from the mainline pavement expansion joint to the bridge approach slab;

(i) Bridge approach slab;

(j) Pavement that must be constructed in multiple short segments, typically defined as 600 ft (180 m) or less;

(k) Pavement within 25 ft (7.6 m) of manholes, utility structures, or other appurtenances;

(l) Turn lanes; and

(m) Pavement within 5 ft (1.5 m) of jobsite sampling locations for HMA volumetric testing that fall within the wheel path.

Miscellaneous pavement shall be tested using a 16 ft (5 m) straightedge.

(4) International Roughness Index (IRI). An index computed from a longitudinal profile measurement using a quarter-car simulation at a simulation speed of 50 mph (80 km/h).

(5) Mean Roughness Index (MRI). The average of the IRI values for the right and left wheel tracks.

(6) Areas of Localized Roughness (ALR). Isolated areas of roughness, which can cause significant increase in the calculated MRI for a given sublot.

(7) Lot. A lot will be defined as a continuous strip of pavement 1 mile (1,600 m) long and one lane wide. When the length of a continuous strip of pavement is less than 1 mile (1,600 m), that pavement will be included in an adjacent lot. Structures will be omitted when measuring pavement length, but will not be considered as a discontinuity and the numbering of sublots will not restart. The limits of the structure shall include the entire length between the outside ends of both connector pavements.

(8) Sublot. Lots will be divided into 0.1 mile (160 m) sublots. A partial sublot greater than or equal to 264 ft (80 m) resulting from an interruption in the pavement will be subject to the same evaluation as a whole sublot. Partial sublots less than 264 ft (80 m) shall be included with the previous sublot for evaluation purposes.

(b) Corrective Work. Corrective work shall be completed according to the following.

(1) High-Speed Mainline Pavement. For high-speed mainline pavement, any 25 ft (7.6 m) interval with an ALR in excess of 150 in./mile (2,400 mm/km) will be identified by the Engineer and shall be corrected by the Contractor. Any sublot having a MRI greater than MRI_D, including ALR, shall be corrected to reduce the MRI to the MRI_F, or replaced at the Contractor's option.

(2) Low-Speed Mainline Pavement. Bumps in low-speed mainline pavement which exceed the 5/16 in. (8 mm) tolerance using a simulated 16 ft (5 m) straightedge will be identified by the Engineer and shall be corrected by the Contractor.

(3) Miscellaneous Pavements. Bumps in miscellaneous pavement which exceed the 5/16 in. (8 mm) tolerance on a 16 ft (5 m) straightedge will be identified by the Engineer and shall be corrected by the Contractor.

Corrective work shall be completed with pavement surface grinding equipment or by removing and replacing the pavement. Corrective work shall be applied to the full lane width. When completed, the corrected area shall have uniform texture and appearance, with the beginning and ending of the corrected area normal to the centerline of the paved surface.

Upon completion of the corrective work, the surface of the sublot(s) shall be retested. The Contractor shall furnish the data and reports to the Engineer within 2 working days after corrections are made. If the MRI and/or ALR still do not meet the requirements, additional corrective work shall be performed.

Corrective work shall be at no additional cost to the Department.

(c) Smoothness Assessments. Assessments will be paid to or deducted from the Contractor for each sublot of high-speed mainline pavement per the Smoothness Assessment Schedule. Assessments will be based on the MRI of each sublot prior to performing any corrective work unless the Contractor has chosen to remove and replace the sublot. For

sublots that are replaced, assessments will be based on the MRI determined after replacement.

The upper MRI thresholds for high-speed mainline pavement are dependent on the MRI of the existing pavement before construction (MRI_0) and shall be determined as follows.

Upper MRI Thresholds [1/]	MRI Thresholds (High-Speed, HMA Overlay)	
	$MRI_0 \leq 125.0$ in./mile (≤ 1,975 mm/km)	$MRI_0 > 125.0$ in./mile [1/] (> 1,975 mm/km)
Incentive (MRI_I)	45.0 in./mile (710 mm/km)	$0.2 \times MRI_0 + 20$
Full Pay (MRI_F)	75.0 in./mile (1,190 mm/km)	$0.2 \times MRI_0 + 50$
Disincentive (MRI_D)	100.0 in./mile (1,975 mm/km)	$0.2 \times MRI_0 + 75$

1/ MRI_0, MRI_I, MRI_F, and MRI_D shall be in in./mile for calculation.

Smoothness assessments for high-speed mainline pavement shall be determined as follows.

SMOOTHNESS ASSESSMENT SCHEDULE (High-Speed, HMA Overlay)	
Mainline Pavement MRI Range	Assessment Per Sublot [1/]
$MRI \leq MRI_I$	$+ (MRI_I - MRI) \times \$33.00$ [2/]
$MRI_I < MRI \leq MRI_F$	+ \$0.00
$MRI_F < MRI \leq MRI_D$	$- (MRI - MRI_F) \times \$20.00$
$MRI > MRI_D$	– \$500.00

1/ MRI, MRI_I, MRI_F, and MRI_D shall be in in./mile for calculation.

2/ The maximum incentive amount shall not exceed \$500.00.

Smoothness assessments will not be paid or deducted until all other contract requirements for the pavement are satisfied. Pavement that is corrected or replaced for reasons other than smoothness, shall be retested as stated herein."

Hot-Mix Asphalt (HMA) Pavement (Full-Depth)

Revise the first paragraph of Article 407.03 of the Standard Specifications to read:

"**407.03 Equipment.** Equipment shall be according to Article 406.03."

Revise Article 407.09 of the Standard Specifications to read:

"**407.09 Surface Tests.** The finished surface of the pavement shall be tested for smoothness

according to Article 406.11, except as follows:

The testing of the existing pavement prior to improvements shall not apply and the smoothness assessment for high-speed mainline pavement shall be determined according to the following table.

SMOOTHNESS ASSESSMENT SCHEDULE (High-Speed, Full-Depth HMA)	
Mainline Pavement MRI, in./mile (mm/km)	Assessment Per Sublot [1/]
≤ 45.0 (710)	+ (45 – MRI) × $80.00 [2/]
> 45.0 (710) to 75.0 (1,190)	+ $0.00
> 75.0 (1,190) to 100.0 (1,580)	– (MRI – 75) × $30.00
> 100.0 (1,580)	– $750.00

1/ MRI shall be in in./mile for calculation.

2/ The maximum incentive amount shall not exceed $1,200.00."

Portland Cement Concrete Pavement

Delete Article 420.03(i) of the Standard Specifications.

Revise Article 420.03(j) of the Standard Specifications to read:

"(i) Coring Machine (Note 1)"

Revise Article 420.10 of the Standard Specifications to read:

"**420.10 Surface Tests.** The finished surface of the pavement shall be tested for smoothness according to Article 406.11, except as follows.

The testing of the existing pavement prior to improvements shall not apply. The Contractor shall measure the smoothness of the finished surface of the pavement after the pavement has attained a flexural strength of 250 psi (3,800 kPa) or a compressive strength of 1,600 psi (20,700 kPa).

Membrane curing damaged during testing shall be repaired as directed by the Engineer at no additional cost to the Department.

(a) Corrective Work. No further texturing for skid resistance will be required for areas corrected by grinding. Protective coat shall be reapplied to ground areas according to Article 420.18 at no additional cost to the Department.

Pavement corrected by removal and replacement, shall be corrected in full panel sizes.

(b) Smoothness Assessments. Smoothness assessment for high-speed mainline pavement shall be determined as follows.

SMOOTHNESS ASSESSMENT SCHEDULE (High-Speed, PCC)	
Mainline Pavement MRI, in./mile (mm/km) [3/]	Assessment Per Sublot [1/]
≤ 45.0 (710)	+ (45 – MRI) × $120.00 [2/]
> 45.0 (710) to 75.0 (1,190)	+ $0.00
> 75.0 (1,190) to 100.0 (1,580)	– (MRI – 75) × $45.00
> 100.0 (1,580)	– $1,125.00

1/ MRI shall be in in./mile for calculation.

2/ The maximum incentive amount shall not exceed $1,800.00.

3/ If pavement is constructed with traffic in the lane next to it, then an additional 10 in./mile will be added to the upper thresholds."

Removal of Existing Pavement and Appurtenances

Revise the first paragraph of Article 440.04 of the Standard Specifications to read:

"**440.04 HMA Surface Removal for Subsequent Resurfacing.** The existing HMA surface shall be removed to the depth specified on the plans with a self-propelled milling machine. The removal depth may be varied slightly at the discretion of the Engineer to satisfy the smoothness requirements of the finished pavement. The temperature at which the work is performed, the nature and condition of the equipment, and the manner of performing the work shall be such that the milled surface is not torn, gouged, shoved or otherwise damaged by the milling operation. Sufficient cutting passes shall be made so that all irregularities or high spots are eliminated to the satisfaction of the Engineer. When tested with a 16 ft (5 m) straightedge, the milled surface shall have no surface variations in excess of 3/16 in. (5 mm)."

80435

VEHICLE AND EQUIPMENT WARNING LIGHTS (BDE)

Effective: November 1, 2021

Add the following paragraph after the first paragraph of Article 701.08 of the Standard Specifications:

"The Contractor shall equip all vehicles and equipment with high-intensity oscillating, rotating, or flashing, amber or amber-and-white, warning lights which are visible from all directions. The lights shall be in operation while the vehicle or equipment is engaged in construction operations."

80439

WEEKLY DBE TRUCKING REPORTS (BDE)

Effective: June 2, 2012
Revised: November 1, 2021

The Contractor shall submit a weekly report of Disadvantaged Business Enterprise (DBE) trucks hired by the Contractor or subcontractors (i.e. not owned by the Contractor or subcontractors) that are used for DBE goal credit.

The report shall be submitted to the Engineer on Department form "SBE 723" within ten business days following the reporting period. The reporting period shall be Sunday through Saturday for each week reportable trucking activities occur.

Any costs associated with providing weekly DBE trucking reports shall be considered as included in the contract unit prices bid for the various items of work involved and no additional compensation will be allowed.

80302

WORK ZONE TRAFFIC CONTROL DEVICES (BDE)

Effective: March 2, 2020

Add the following to Article 701.03 of the Standard Specifications:

"(q) Temporary Sign Supports .....1106.02"

Revise the third paragraph of Article 701.14 of the Standard Specifications to read:

"For temporary sign supports, the Contractor shall provide a FHWA eligibility letter for each device used on the contract. The letter shall provide information for the set-up and use of the device as well as a detailed drawing of the device. The signs shall be supported within 20 degrees of vertical. Weights used to stabilize signs shall be attached to the sign support per the manufacturer's specifications."

Revise the first paragraph of Article 701.15 of the Standard Specifications to read:

"**701.15 Traffic Control Devices.** For devices that must meet crashworthiness standards, the Contractor shall provide a manufacturer's self-certification or a FHWA eligibility letter for each Category 1 device and a FHWA eligibility letter for each Category 2 and Category 3 device used on the contract. The self-certification or letter shall provide information for the set-up and use of the device as well as a detailed drawing of the device."

Revise the first six paragraphs of Article 1106.02 of the Standard Specifications to read:

"**1106.02 Devices.** Work zone traffic control devices and combinations of devices shall meet crashworthiness standards for their respective categories. The categories are as follows.

Category 1 includes small, lightweight, channelizing and delineating devices that have been in common use for many years and are known to be crashworthy by crash testing of similar devices or years of demonstrable safe performance. These include cones, tubular markers, plastic drums, and delineators, with no attachments (e.g. lights). Category 1 devices manufactured after December 31, 2019 shall be MASH-16 compliant. Category 1 devices manufactured on or before December 31, 2019, and compliant with NCHRP 350 or MASH 2009, may be used on contracts let before December 31, 2024.

Category 2 includes devices that are not expected to produce significant vehicular velocity change but may otherwise be hazardous. These include vertical panels with lights, barricades, temporary sign supports, and Category 1 devices with attachments (e.g. drums with lights). Category 2 devices manufactured after December 31, 2019 shall be MASH-16 compliant. Category 2 devices manufactured on or before December 31, 2019, and compliant with NCHRP 350 or MASH 2009, may be used on contracts let before December 31, 2024.

Category 3 includes devices that are expected to cause significant velocity changes or other potentially harmful reactions to impacting vehicles. These include crash cushions (impact

attenuators), truck mounted attenuators, and other devices not meeting the definitions of Category 1 or 2. Category 3 devices manufactured after December 31, 2019 shall be MASH-16 compliant. Category 3 devices manufactured on or before December 31, 2019, and compliant with NCHRP 350 or MASH 2009, may be used on contracts let before December 31, 2029. Category 3 devices shall be crash tested for Test Level 3 or the test level specified.

Category 4 includes portable or trailer-mounted devices such as arrow boards, changeable message signs, temporary traffic signals, and area lighting supports. It is preferable for Category 4 devices manufactured after December 31, 2019 to be MASH-16 compliant; however, there are currently no crash tested devices in this category, so it remains exempt from the NCHRP 350 or MASH compliance requirement.

For each type of device, when no more than one MASH-16 compliant is available, an NCHRP 350 or MASH-2009 compliant device may be used, even if manufactured after December 31, 2019."

Revise Articles 1106.02(g), 1106.02(k), and 1106.02(l) to read:

"(g) Truck Mounted/Trailer Mounted Attenuators. The attenuator shall be approved for use at Test Level 3. Test Level 2 may be used for normal posted speeds less than or equal to 45 mph.

(k) Temporary Water Filled Barrier. The water filled barrier shall be a lightweight plastic shell designed to accept water ballast and be on the Department's qualified product list.

Shop drawings shall be furnished by the manufacturer and shall indicate the deflection of the barrier as determined by acceptance testing; the configuration of the barrier in that test; and the vehicle weight, velocity, and angle of impact of the deflection test. The Engineer shall be provided one copy of the shop drawings.

(l) Movable Traffic Barrier. The movable traffic barrier shall be on the Department's qualified product list.

Shop drawings shall be furnished by the manufacturer and shall indicate the deflection of the barrier as determined by acceptance testing; the configuration of the barrier in that test; and the vehicle weight, velocity, and angle of impact of the deflection test. The Engineer shall be provided one copy of the shop drawings. The barrier shall be capable of being moved on and off the roadway on a daily basis."

80427

REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under Title 23 (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services). The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in bid proposal or request for proposal documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors.

II. NONDISCRIMINATION

The provisions of this section related to 23 CFR Part 230 are applicable to all Federal-aid construction contracts and to all related construction subcontracts of $10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR 60, 29 CFR 1625-1627, Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding $10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR 60, and 29 CFR 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), and Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR 230, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

1. Equal Employment Opportunity: Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630, 29 CFR 1625-1627, 41 CFR 60 and 49 CFR 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract.

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection

for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

2. EEO Officer: The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

8. Reasonable Accommodation for Applicants / Employees with Disabilities: The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established there under. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors and suppliers and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

10. Assurance Required by 49 CFR 26.13(b):

a. The requirements of 49 CFR Part 26 and the State DOT's U.S. DOT-approved DBE program are incorporated by reference.

b. The contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the contracting agency deems appropriate.

11. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women;

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form FHWA-1391. The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of $10,000 or more.

The contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location, under the contractor's control, where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding $2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size). The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. Contracting agencies may elect to apply these requirements to other projects.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 "Contract provisions and related matters" with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. Minimum wages

a. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.d. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each

classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH–1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b. (1) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is utilized in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(3) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. The Wage and Hour Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

c. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

d. If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

2. Withholding

The contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract, or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the contracting agency may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

3. Payrolls and basic records

a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

b. (1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g. , the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH–347 is available for this purpose from the Wage and Hour Division Web site at http://www.dol.gov/esa/whd/forms/wh347instr.htm or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency..

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(i) That the payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH–347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(2) of this section.

(4) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FHWA may, after written notice to the contractor, the contracting agency or the State DOT, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and trainees

a. Apprentices (programs of the USDOL).

Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.

The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

b. Trainees (programs of the USDOL).

Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration.

The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

d. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

6. Subcontracts. The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

7. Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

9. Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility.

a. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

c. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

The following clauses apply to any Federal-aid construction contract in an amount in excess of $100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (1.) of this section, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1.) of this section, in the sum of $10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1.) of this section.

3. Withholding for unpaid wages and liquidated damages. The FHWA or the contacting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2.) of this section.

4. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1.) through (4.) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1.) through (4.) of this section.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term “perform work with its own organization” refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions:

(1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;

(2) the prime contractor remains responsible for the quality of the work of the leased employees;

(3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and

(4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

5. The 30% self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements.

VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C.3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

By submission of this bid/proposal or the execution of this contract, or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any person who is or will be utilized in the performance of this contract is not prohibited from receiving an award due to a violation of Section 508 of the Clean Water Act or Section 306 of the Clean Air Act.
2. That the contractor agrees to include or cause to be included the requirements of paragraph (1) of this Section X in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements.

X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost $25,000 or more – as defined in 2 CFR Parts 180 and 1200.

1**. Instructions for Certification – First Tier Participants:**

a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. “First Tier Covered Transactions” refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (https://www.epls.gov/), which is compiled by the General Services Administration.

i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

* * * * *

2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency;

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

2. **Instructions for Certification - Lower Tier Participants:**

(Applicable to all subcontracts, purchase orders and other lower tier transactions requiring prior FHWA approval or estimated to cost $25,000 or more - 2 CFR Parts 180 and 1200)

a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. “First Tier Covered Transactions” refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a grantee or subgrantee of

Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (https://www.epls.gov/), which is compiled by the General Services Administration.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

* * * * *

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

* * * * *

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed $100,000 (49 CFR 20).

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed $100,000 and that all such recipients shall certify and disclose accordingly.

ATTACHMENT A - EMPLOYMENT AND MATERIALS PREFERENCE FOR APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS ROAD CONTRACTS

This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.

6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

Contract Provision - Cargo Preference Requirements

In accordance with Title 46 CFR § 381.7 (b), the contractor agrees—

"(1) To utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels.

(2) To furnish within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, 'on-board' commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (b) (1) of this section to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590.

(3) To insert the substance of the provisions of this clause in all subcontracts issued pursuant to this contract."

Provisions (1) and (2) apply to materials or equipment that are acquired solely for the project. The two provisions do not apply to goods or materials that come into inventories independent of the project, such as shipments of Portland cement, asphalt cement, or aggregates, when industry suppliers and contractors use these materials to replenish existing inventories.