RETURN WITH BID

CITY OF ST. CHARLES

ILLINOIS • SINCE 1834

Local Public Agency
Formal Contract Proposal

PROPOSAL SUBMITTED BY		
Contractor's Name		
Street		P.O. Box
City	State	Zip Code

STATE OF ILLINOIS

COUNTY OF Kane

City of St. Charles
(Name of City, Village, Town or Road District)

FOR THE IMPROVEMENT OF

STREET NAME OR ROUTE NO. John Deutsch Drive & 7th Ave. Culvert Improvements

SECTION NO. Non-MFT

TYPES OF FUNDS City

☒ SPECIFICATIONS (required) ☒ PLANS (required)

For Municipal Projects

Submitted/Approved/Passed

☐ Mayor ☐ President of Board of Trustees ☒ Municipal Official

Date 8/1/18

~~**Department of Transportation**~~

~~☐ Released for bid based on limited review~~

~~Regional Engineer~~

~~Date~~

~~**For County and Road District Projects**~~

~~Submitted/Approved~~

~~Highway Commissioner~~

~~Date~~

~~Submitted/Approved~~

~~County Engineer/Superintendent of Highways~~

~~Date~~

KENNETH L. JAY
LICENSED PROFESSIONAL ENGINEER
062-062261
STATE OF ILLINOIS

11/19

Note: All proposal documents, including Proposal Guaranty Checks or Proposal Bid Bonds, should be stapled together to prevent loss when bids are processed.

RETURN WITH BID

NOTICE TO BIDDERS

County Kane
Local Public Agency City of St. Charles
Section Number Non-MFT
Route John Deutsch Dr. & 7th Ave.

Sealed proposals for the improvement described below will be received at the office of The City Clerk,
City of St. Charles, 2 East Main Street, St. Charles, IL 60174 (Address) until 11:00 am (Time) on August 16, 2018 (Date)

Sealed proposals will be opened and read publicly at the office of The City Clerk
City of St. Charles, 2 East Main Street, St. Charles, IL 601742 (Address) at 11:00 am (Time) on August 16, 2018 (Date)

DESCRIPTION OF WORK

Name John Deutsch Drive and 7th Ave. Culvert Improvements Length: 190 feet ( ) miles)
Location John Deutsch Drive over 7th Ave. Creek & 7th Avenue over 7th Ave. Creek
Proposed Improvement Remove existing John Deutsch culvert(s) & Install double 12' x 8' Precast Concrete Box Culvert Over 7th Ave. Creek. Cast-in-place box culvert end sections, roadway pavement, earth excavation, grading, rip rap install and Water main removal and replacement. 7th Ave. Culvert invert repairs and rip rap armoring. An alternate bid at 7th Ave. for the installation of a geopolymer spray on lining for the existing double CMP arches under 7th Ave. with invert repairs included (see alternative bid information 7th Ave. Culverts). An alternative bid for culvert rehabilitation at John Deutsch Drive culverts instead of culvert replacement (see alternative bid information in design plans for John Deutsch Drive culverts).

1. Plans and proposal forms will be available in the office of City of St. Charles Website at no cost at:
   http://www.stcharlesil.gov/bid-proposals. Contact Ken Jay, Civil Engineer II at 630-377-4418 (Address)
2. ☒ Prequalification
   If checked, the 2 low bidders must file within 24 hours after the letting an "Affidavit of Availability" (Form BC 57), in duplicate, showing all uncompleted contracts awarded to them and all low bids pending award for Federal, State, County, Municipal and private work. One original shall be filed with the Awarding Authority and one original with the IDOT District Office.
3. The Awarding Authority reserves the right to waive technicalities and to reject any or all proposals as provided in BLRS Special Provision for Bidding Requirements and Conditions for Contract Proposals.
4. The following BLR Forms shall be returned by the bidder to the Awarding Authority:
   a. BLR 12200: Local Public Agency Formal Contract Proposal
   b. BLR 12200a Schedule of Prices
   c. BLR 12230: Proposal Bid Bond (if applicable)
   d. BLR 12325: Apprenticeship or Training Program Certification (**do not use for federally funded projects**)
   e. BLR 12326: Affidavit of Illinois Business Office
   f. BC 57: Affidavit of Availability
   g. Certificate of Non-Discrimination
   h. Affidavit of Non-Collusion
   i. Certificate of Compliance with Prevailing Wages
   j. Work History Statement
   k. IDOT Prequalification for Structures (Highway, Waterway)
   l. Certificate of Liability Insurance (per Article 107.27 of the Standard Specifications)
   m. IDOT Certification of Eligibility
   n. NPDES Training Statement

5. The quantities appearing in the bid schedule are approximate and are prepared for the comparison of bids. Payment to the Contractor will be made only for the actual quantities of work performed and accepted or materials furnished according to the contract. The scheduled quantities of work to be done and materials to be furnished may be increased, decreased or omitted as hereinafter provided.
6. Submission of a bid shall be conclusive assurance and warranty the bidder has examined the plans and understands all requirements for the performance of work. The bidder will be responsible for all errors in the proposal resulting from failure or neglect to conduct an in depth examination. The Awarding Authority will, in no case be responsible for any costs, expenses, losses or changes in anticipated profits resulting from such failure or neglect of the bidder.
7. The bidder shall take no advantage of any error or omission in the proposal and advertised contract.
8. If a special envelope is supplied by the Awarding Authority, each proposal should be submitted in that envelope furnished by the Awarding Agency and the blank spaces on the envelope shall be filled in correctly to clearly indicate its contents. When an envelope other than the special one furnished by the Awarding Authority is used, it shall be marked to clearly indicate its contents. When sent by mail, the sealed proposal shall be addressed to the Awarding Authority at the address and in care of the official in whose office the bids are to be received. All proposals shall be filed prior to the time and at the place specified in the Notice to Bidders. Proposals received after the time specified will be returned to the bidder unopened.
9. Permission will be given to a bidder to withdraw a proposal if the bidder makes the request in writing or in person before the time for opening proposals.

PROPOSAL

County Kane
Local Public Agency City of St. Charles
Section Number Non-MFT
Route John Deutsch Dr. & 7th Ave.

1. Proposal of _____

for the improvement of the above section by the construction of Two (2) 12'x8' Precast Concrete Box Culverts, Box Culvert End Sections (cast-in-place), roadway pavement, channel improvements, rip rap armoring and water main replacement at John Deutsch Drive. At 7th Avenue Culverts – existing CMP invert repairs and rip rap armoring. An alternate bid for work at 7th Ave. culverts consisting of the installation of a Geopolymer Spray on Lining for structural replacement of the existing dual CMP arch culverts with invert repairs included. An alternative bid for culvert rehabilitation at John Deutsch Dr. culverts instead of culvert replacement (see alternative bid information in design plans for John Deutsch Dr. culverts).

a total distance of 190 feet, of which a distance of 190 feet, (miles) are to be improved.

2. The plans for the proposed work are those prepared by HR Green, Inc.
and approved by the Department of Transportation on N/A
3. The specifications referred to herein are those prepared by the Department of Transportation and designated as "Standard Specifications for Road and Bridge Construction" and the "Supplemental Specifications and Recurring Special Provisions" thereto, adopted and in effect on the date of invitation for bids.
4. The undersigned agrees to accept, as part of the contract, the applicable Special Provisions indicated on the "Check Sheet for Recurring Special Provisions" contained in this proposal.
5. The undersigned agrees to complete the work within _____ working days or by _____
10/30/18 (for culvert repairs and/or linings, if awarded, assuming an awarded date of September 4, 2018)

06/28/19 (for culvert replacement at John Deutsch, if awarded, assuming a start date of April 2, 2019 to coincide with Nicor Gas Main relocation).
unless additional time is granted in accordance with the specifications.

6. A proposal guaranty in the proper amount, as specified in BLRS Special Provision for Bidding Requirements and Conditions for Contract Proposals, will be required. Bid Bonds will be allowed as a proposal guaranty. Accompanying this proposal is either a bid bond if allowed, on Department form BLR 12230 or a proposal guaranty check, complying with the specifications, made payable to:

City Treasurer of St. Charles
The amount of the check is 5% of the bid ( ).

7. In the event that one proposal guaranty check is intended to cover two or more proposals, the amount must be equal to the sum of the proposal guaranties, which would be required for each individual proposal. If the proposal guaranty check is placed in another proposal, it will be found in the proposal for: Section Number _____.
8. The successful bidder at the time of execution of the contract will be required to deposit a contract bond for the full amount of the award. When a contract bond is not required, the proposal guaranty check will be held in lieu thereof. If this proposal is accepted and the undersigned fails to execute a contract and contract bond as required, it is hereby agreed that the Bid Bond or check shall be forfeited to the Awarding Authority.
9. Each pay item should have a unit price and a total price. If no total price is shown or if there is a discrepancy between the product of the unit price multiplied by the quantity, the unit price shall govern. If a unit price is omitted, the total price will be divided by the quantity in order to establish a unit price.
10. A bid will be declared unacceptable if neither a unit price nor a total price is shown.
11. Each bidder may submit on the BASE BID for Project Location 1, Project Location 2, or both Project Location 1 and Project Location 2. Each bidder must submit on at least one of the BASE BID project locations to be eligible for the award of contract. Failure to do so will result in rejection of the Contractor's bid.
12. The City reserves the right to award the contract(s) to the lowest responsive, responsible bidder for the BASE BID in the schedule of prices for either Project Location 1, Project Location 2, or both, based upon which bids are in the City's best interest. The City reserves the right to award separate contracts for Project Location 1 and Project Location 2. The City

reserves the right to award the most favorable combination of BASE and ALTERNATE BIDS, based upon which is in the City's best interest.

13. The undersigned submits herewith the schedule of prices on BLR 12200a covering the work to be performed under this contract.
14. The undersigned further agrees that if awarded the contract for the sections contained in the combinations on BLR 12200a, the work shall be in accordance with the requirements of each individual proposal for the multiple bid specified in the Schedule for Multiple Bids below.

RETURN WITH BID

CITY OF ST. CHARLES
ILLINOIS • SINCE 1834

SCHEDULE OF PRICES

County Kane
Local Public Agency City of St. Charles
Section N/A
Route John Deutsch Drive & 7th Ave

Schedule for Multiple Bids

Combination Letter	Sections Included in Combinations	Total
BASE BID, PROJECT LOCATION #1, JOHN DEUTSCH DRIVE	John Deutsch Culvert Replacement	
BASE BID, PROJECT LOCATION #2, 7th AVENUE	7th Avenue Culvert Repairs	
ALTERNATIVE BID FOR PROJECT LOCATION #1, JOHN DEUTSCH DRIVE	John Deutsch Culvert Repairs	
ALTERNATIVE BID FOR PROJECT LOCATION #2, 7th AVENUE	7th Avenue Culverts, Geopolymer Lining	

(For complete information covering these items, see plans and specifications)

Item No.	Items	Unit	Quantity	Unit Price	Total
	BASE BID - PROJECT LOCATION #1: JOHN DEUTSCH CULVERT REPLACEMENT:				
20100110	TREE REMOVAL (6 to 15 UNIT)	UNIT	281		
20100210	TREE REMOVAL (OVER 15 UNIT)	UNIT	352		
20201200	REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL (extra undercut of culvert only)	CU.YD.	100		
20200200	ROCK EXCAVATION	CU.YD.	8		
20700220	POROUS GRANULAR EMBANKMENT (extra undercut of culvert only)	CU.YD.	100		
*25200110	SODDING, SALT TOLERANT	SQ.YD.	260		
*21101505	TOPSOIL EXCAVATION AND PLACEMENT	CU.YD.	116		
21101600	TOPSOIL FURNISH AND PLACE, VARIABLE DEPTH	SQ.YD.	700		
*25100630	EROSION CONTROL BLANKET	SQ.YD.	706		
*28000500	INLET AND PIPE PROTECTION	EACH	3		
*28000305	TEMPORARY DITCH CHECKS - COIR LOG	LIN FT.	240		
28100107	STONE RIPRAP, CLASS A4	SQ. YD.	346		
35101800	AGGREGATE BASE COURSE, TYPE B, 6"	SQ.YD.	168		
*	AGGREGATE BASE COURSE, TYPE B, 4", SPECIAL	SQ.YD.	290		
40603335	HOT-MIX ASPHALT SURFACE COURSE, MIX D, N50, 2"	TON	188		
40603080	HOT-MIX ASPHALT BINDER COURSE, IL-19, N50, 3"	TON	79		
44000157	HOT-MIX ASPHALT SURFACE REMOVAL, 2"	SQ.YD.	1175		
*	PAVEMENT REMOVAL, FULL DEPTH	SQ.YD.	168		
*	HOT-MIX ASPHALT SURFACE REMOVAL, 7", SPECIAL	SQ. YD.	290		
*	PORTLAND CEMENT CONCRETE DRIVEWAY REMOVAL AND REPLACEMENT	SQ.YD.	63		
44000600	SIDEWALK REMOVAL	SQ.FT.	200		

Item No.	Items	Unit	Quantity	Unit Price	Total
*	PORTLAND CEMENT CONCRETE SIDEWALK, SPECIAL, 8"	SQ.FT.	200		
51500100	NAME PLATES	EACH	1		
*54011208	PRECAST CONCRETE BOX CULVERT, 12' X 8'	LIN FT.	128		
*54001001	BOX CULVERT END SECTIONS	EACH	2		
54261712	STEEL FLARED END SECTIONS 12"	EACH	1		
63000001	STEEL PLATE BEAM GUARDRAIL, TYPE A, 6 FOOT POSTS	FOOT	85		
63100041	TRAFFIC BARRIER TERMINAL, TYPE 1	EACH	2		
63100045	TRAFFIC BARRIER TERMINAL, TYPE 2	EACH	2		
70300100	SHORT TERM PAVEMENT MARKING, TAPE	SQ. FT.	630		
70300150	SHORT TERM PAVEMENT MARKING REMOVAL	SQ. FT.	630		
*X5010205	REMOVAL OF EXISTING STRUCTURES, SPECIAL	EACH	1		
*X4400220	CURB REMOVAL AND REPLACEMENT	LIN FT.	64		
*X5510100	STORM SEWER REMOVAL, D.I., 12"	LIN FT.	6		
*X5630008	CUT AND CAP EXISTING 8" WATERMAIN	EACH	1		
*Z0013798	CONSTRUCTION LAYOUT	LSUM	1		
*	LANDSCAPE WALL	SQ.FT.	63		
*	SEEDING	SQ.YD.	706		
*	LANDSCAPE MAINTENANCE - YEAR 1	LSUM	1		
*	LANDSCAPE MAINTENANCE - YEAR 2	LSUM	1		
*	LANDSCAPE MAINTENANCE - YEAR 3	LSUM	1		
*	EROSION CONTROL FENCE	LIN FT.	500		
*	WATERMAIN REMOVE & REPLACE 8" DUCTILE IRON, CLASS 52 WITH POLYETHYLENE ENCASEMENT	LIN FT.	80		
*	STORM SEWER, PVC, 12"	LIN FT.	25		
*	TEMPORARY FLOW BYPASS	LSUM	1		
*	CLEARING	ACRES	0.20		
*	TRAFFIC CONTROL	LSUM	1		
*	DEBRIS REMOVAL FROM CHANNEL	LSUM	1		
*	CONTINGENCY	LSUM	1	$40,000	$40,000
	BASE BID - PROJECT LOCATION #2: 7TH AVENUE CULVERT REPAIRS:				
*28000305	TEMPORARY DITCH CHECKS - COIR LOG	LIN. FT.	40		
28100107	STONE RIPRAP, CLASS A4	SQ. YD.	39		
*	REPAIR OF EXISTING CMP INVERT VOIDS	SQ. FT.	210		
*	TEMPORARY FLOW BYPASS	LSUM	1		
*	GROUT INJECTION OF VOIDS BEHIND CULVERT WALL	LSUM	1		
*	DEBRIS REMOVAL FROM CULVERTS	LSUM	1		

RETURN WITH BID

Item No.	Items	Unit	Quantity	Unit Price	Total
	ALTERNATIVE BID FOR PROJECT LOCATION #1, JOHN DEUTSCH CULVERTS REPAIRS				
*28000305	TEMPORARY DITCH CHECKS - COIR LOG	LIN. FT.	120		
28100107	STONE RIPRAP, CLASS A4	SQ. YD.	34		
*	REPAIR OF EXISTING CMP INVERT VOIDS	SQ. FT.	480		
*	TEMPORARY FLOW BYPASS	LSUM	1		
*	DEBRIS REMOVAL FROM CULVERTS	LSUM	1		
	ALTERNATIVE BID FOR PROJECT LOCATION #2, 7TH AVENUE CULVERTS, GEOPOLYMER LINING				
*	GEOPOLYMER LINER	LIN.FT.	788		

CONTRACTOR CERTIFICATIONS

County Kane
Local Public Agency City of St. Charles
Section Number Non-MFT
Route John Deutsch Dr. & 7th Ave.

The certifications hereinafter made by the bidder are each a material representation of fact upon which reliance is placed should the Department enter into the contract with the bidder.

1. **Debt Deliquency.** The bidder or contractor or subcontractor, respectively, certifies that it is not delinquent in the payment of any tax administered by the Department of Revenue unless the individual or other entity is contesting, in accordance with the procedures established by the appropriate revenue Act, its liability for the tax or the amount of tax. Making a false statement voids the contract and allows the Department to recover all amounts paid to the individual or entity under the contract in a civil action.

2. **Bid-Rigging or Bid Rotating.** The bidder or contractor or subcontractor, respectively, certifies that it is not barred from contracting with the Department by reason of a violation of either 720 ILCS 5/33E-3 or 720 ILCS 5/33E-4.

   A violation of Section 33E-3 would be represented by a conviction of the crime of bid-rigging which, in addition to Class 3 felony sentencing, provides that any person convicted of this offense or any similar offense of any state or the United States which contains the same elements as this offense shall be barred for 5 years from the date of conviction from contracting with any unit of State or local government. No corporation shall be barred from contracting with any unit of State or local government as a result of a conviction under this Section of any employee or agent of such corporation if the employee so convicted is no longer employed by the corporation and: (1) it has been finally adjudicated not guilty or (2) if it demonstrates to the governmental entity with which it seeks to contract and that entity finds that the commission of the offense was neither authorized, requested, commanded, nor performed by a director, officer or a high managerial agent in behalf of the corporation.

   A violation of Section 33E-4 would be represented by a conviction of the crime of bid-rotating which, in addition to Class 2 felony sentencing, provides that any person convicted of this offense or any similar offense of any state or the United States which contains the same elements as this offense shall be permanently barred from contracting with any unit of State or local government. No corporation shall be barred from contracting with any unit of State or local government as a result of a conviction under this Section of any employee or agent of such corporation if the employee so convicted is no longer employed by the corporation and: (1) it has been finally adjudicated not guilty or (2) if it demonstrates to the governmental entity with which it seeks to contract and that entity finds that the commission of the offense was neither authorized, requested, commanded, nor performed by a director, officer or a high managerial agent in behalf of the corporation.

3. **Bribery.** The bidder or contractor or subcontractor, respectively, certifies that it has not been convicted of bribery or attempting to bribe an officer or employee of the State of Illinois or any unit of local government, nor has the firm made an admission of guilt of such conduct which is a matter of record, nor has an official, agent, or employee of the firm committed bribery or attempted bribery on behalf of the firm and pursuant to the direction or authorization of a responsible official of the firm.

4. **Interim Suspension or Suspension.** The bidder or contractor or subcontractor, respectively, certifies that it is not currently under a suspension as defined in Subpart I of Title 44 Subtitle A Chapter III Part 6 of the Illinois Administrative Code. Furthermore, if suspended prior to completion of this work, the contract or contracts executed for the completion of this work may be cancelled.

RETURN WITH BID

County Kane
Local Public Agency City of St. Charles
Section Number Non-MFT
Route John Deutsch Dr. & 7th Ave.

SIGNATURES

(If an individual)

Signature of Bidder _____

Business Address _____

(If a partnership)

Firm Name _____

Signed By _____

Business Address _____

Inset Names and Addressed of All Partners { _____ _____ _____ _____

(If a corporation)

Corporate Name _____

Signed By _____
President

Business Address _____

Insert Names of Officers { President _____ Secretary _____ Treasurer _____

Attest: _____
Secretary

CITY OF ST. CHARLES
ILLINOIS • SINCE 1834

Local Agency Proposal Bid Bond

Route: John Deutsch Dr. & 7th Ave.
County: Kane
Local Agency: City of St. Charles
Section: N/A

RETURN WITH BID

PAPER BID BOND

WE _____ as PRINCIPAL,

and _____ as SURETY,

are held jointly, severally and firmly bound unto the above Local Agency (hereafter referred to as "LA") in the penal sum of 5% of the total bid price, or for the amount specified in the proposal documents in effect on the date of invitation for bids whichever is the lesser sum. We bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly pay to the LA this sum under the conditions of this instrument.

WHEREAS THE CONDITION OF THE FOREGOING OBLIGATION IS SUCH that, the said PRINCIPAL is submitting a written proposal to the LA acting through its awarding authority for the construction of the work designated as the above section.

THEREFORE if the proposal is accepted and a contract awarded to the PRINCIPAL by the LA for the above designated section and the PRINCIPAL shall within fifteen (15) days after award enter into a formal contract, furnish surety guaranteeing the faithful performance of the work, and furnish evidence of the required insurance coverage, all as provided in the "Standard Specifications for Road and Bridge Construction" and applicable Supplemental Specifications, then this obligation shall become void; otherwise it shall remain in full force and effect.

IN THE EVENT the LA determines the PRINCIPAL has failed to enter into a formal contract in compliance with any requirements set forth in the preceding paragraph, then the LA acting through its awarding authority shall immediately be entitled to recover the full penal sum set out above, together with all court costs, all attorney fees, and any other expense of recovery.

IN TESTIMONY WHEREOF, the said PRINCIPAL and the said SURETY have caused this instrument to be signed by their respective officers this _____ day of _____

Principal

_____ (Company Name)

By: _____ (Signature and Title)

_____ (Company Name)

By: _____ (Signature and Title)

(If PRINCIPAL is a joint venture of two or more contractors, the company names, and authorized signatures of each contractor must be affixed.)

Surety

_____ (Name of Surety)

By: _____ (Signature of Attorney-in-Fact)

STATE OF ILLINOIS,
COUNTY OF _____

I. _____, a Notary Public in and for said county,
do hereby certify that _____
(Insert names of individuals signing on behalf of PRINCIPAL & SURETY)

who are each personally known to me to be the same persons whose names are subscribed to the foregoing instrument on behalf of PRINCIPAL and SURETY, appeared before me this day in person and acknowledged respectively, that they signed and delivered said instruments as their free and voluntary act for the uses and purposes therein set forth.

Given under my hand and notarial seal this _____ day of _____

My commission expires _____

_____ (Notary Public)

ELECTRONIC BID BOND

☐ **Electronic bid bond is allowed (box must be checked by LA if electronic bid bond is allowed)**

The Principal may submit an electronic bid bond, in lieu of completing the above section of the Proposal Bid Bond Form. By providing an electronic bid bond ID code and signing below, the Principal is ensuring the identified electronic bid bond has been executed and the Principal and Surety are firmly bound unto the LA under the conditions of the bid bond as shown above. (If PRINCIPAL is a joint venture of two or more contractors, an electronic bid bond ID code, company/Bidder name title and date must be affixed for each contractor in the venture.)

Electronic Bid Bond ID Code

_____ (Company/Bidder Name)

_____ (Signature and Title)

_____ Date

BLR 12230 (Rev. 7/05

Illinois Department of Transportation

Bureau of Construction
2300 South Dirksen Parkway/Room 322
Springfield, Illinois 62764

Affidavit of Availability

For the Letting of _____

John Deutsch Drive and 7th Ave. Culvert Improvements

Instructions: Complete this form by either typing or using black ink. "Authorization to Bid" will not be issued unless both sides of this form are completed in detail. Use additional forms as needed to list all work.

Part I. Work Under Contract

List below all work you have under contract as either a prime contractor or a subcontractor. It is required to include all pending low bids not yet awarded or rejected. In a joint venture, list only that portion of the work which is the responsibility of your company. The uncompleted dollar value is to be based upon the most recent engineer's or owners estimate, and must include work subcontracted to others. If no work is contracted, show **NONE.**

	1	2	3	4	Awards Pending	
Contract Number						
Contract With						
Estimated Completion Date						
Total Contract Price						Accumulated Totals
Uncompleted Dollar Value if Firm is the Prime Contractor						
Uncompleted Dollar Value if Firm is the Subcontractor						
				Total Value of All Work		

Part II. Awards Pending and Uncompleted Work to be done with your own forces.

List below the uncompleted dollar value of work for each contract and awards pending to be completed with your own forces. All work subcontracted to others will be listed on the reverse of this form. In a joint venture, list only that portion of the work to be done by your company. If no work is contracted, show NONE.

						Accumulated Totals
Earthwork						
Portland Cement Concrete Paving						
HMA Plant Mix						
HMA Paving						
Clean & Seal Cracks/Joints						
Aggregate Bases & Surfaces						
Highway, R.R. and Waterway Structures						
Drainage						
Electrical						
Cover and Seal Coats						
Concrete Construction						
Landscaping						
Fencing						
Guardrail						
Painting						
Signing						
Cold Milling, Planning & Rotomilling						
Demolition						
Pavement Markings (Paint)						
Other Construction (List)						
						$ 0.00
Totals						

Disclosure of this information is **REQUIRED** to accomplish the statutory purpose as outlined in the "Illinois Procurement Code." Failure to comply will result in non-issuance of an "Authorization To Bid." This form has been approved by the State Forms Management Center.

Part III. Work Subcontracted to Others.

For each contract described in Part I, list all the work you have subcontracted to others.

	1	2	3	4	Awards Pending
Subcontractor					
Type of Work					
Subcontract Price					
Amount Uncompleted					
Subcontractor					
Type of Work					
Subcontract Price					
Amount Uncompleted					
Subcontractor					
Type of Work					
Subcontract Price					
Amount Uncompleted					
Subcontractor					
Type of Work					
Subcontract Price					
Amount Uncompleted					
Subcontractor					
Type of Work					
Subcontract Price					
Amount Uncompleted					
Total Uncompleted					

I, being duly sworn, do hereby declare that this affidavit is a true and correct statement relating to ALL uncompleted contracts of the undersigned for Federal, State, County, City and private work, including ALL subcontract work, ALL pending low bids not yet awarded or rejected and ALL estimated completion dates.

Subscribed and sworn to before me

this _____ day of _____ , _____ Type or Print Name _____

Officer or Director Title

_____ Signed _____

Notary Public

My commission expires _____

Company _____

(Notary Seal)

Address _____

_____

ITEMS TO BE RETURNED WITH BID

The following documents shall be included with the submitted bid:

- BLR 12200 – Contract Proposal Cover
- BLR 12200 – Notice to Bidders
- BLR 12200 – Proposal
- BLR 12200a – Schedule of Prices
- BLR 12200 – Contractor Certifications
- BLR 12200 - Signatures
- BLR 12230 – Proposal Bid Bond
- BLR 12326 - Affidavit of Illinois Business Office
- BC 57 – Affidavit of Availability
- Certificate of Non-Discrimination
- Certificate of Non-Disqualification
- Certificate of Compliance with Safety Standards
- Certificate of Compliance with Illinois Human Rights Act
- Certificate of Compliance with Sales Tax Form
- Affidavit of Non-Collusion
- Certificate of Compliance with Prevailing Wages
- Work History Statements –
    - Completed by Contractor for the proposed Culvert Replacement at John Deutsch and the proposed Culvert Repairs at 7th Avenue.
    - Completed by Contractor for the proposed Alternative Bid Culvert Repairs at John Deutsch and the Alternative Bid Geopolymer Liner at 7th Avenue.
    - These may be submitted pre-bid for review/approval
- IDOT Prequalification for Structures, $1,000,000 minimum for John Deutsch Culvert Replacement (Highway, Waterway)
- Certificate of Liability Insurance (per Article 107.27 of the Standard Specifications)
- IDOT Certification of Eligibility
- NPDES Training Statement

RETURN WITH BID

Illinois Department of Transportation

Affidavit of Illinois Business Office

County Kane
Local Public Agency City of St. Charles
Section Number NA
Route _____

State of _____)
) ss.
County of _____)

I, _____ of _____ , _____ ,
(Name of Affiant) (City of Affiant) (State of Affiant

being first duly sworn upon oath, states as follows:

1. That I am the _____ of _____ .
officer or position bidder
2. That I have personal knowledge of the facts herein stated.
3. That, if selected under this proposal, _____ , will maintain a
(bidder)
business office in the State of Illinois which will be located in _____ County, Illinois.
4. That this business office will serve as the primary place of employment for any persons employed in the construction contemplated by this proposal.
5. That this Affidavit is given as a requirement of state law as provided in Section 30-22(8) of the Illinois Procurement Code.

_____
(Signature)

_____
(Print Name of Affiant)

This instrument was acknowledged before me on day of _____ , _____ .

(SEAL)

_____
(Signature of Notary Public)

CERTIFICATE OF COMPLIANCE OF
ILLINOIS COMPILED STATUTES, CH. 65, SEC. 11-42.1-1

The undersigned, upon being first duly sworn, hereby certifies to the City of St. Charles, Kane and DuPage Counties, Illinois, that _____ _____(bidder) is not currently delinquent in the payment of any tax administered by or owed to the Illinois Department of Revenue, or otherwise in default upon any such tax as defined under Ch. 65, Sec. 11-42.1-1, Illinois Compiled Statutes**.**

_____
Name of Bidder

By:_____

State of _____),
ss.
County of _____)

Subscribed and sworn to
before me this _____ day
of_____,_____.

_____
Notary Public

CERTIFICATE OF NON-DISQUALIFICATION
UNDER ILLINOIS COMPILED STATUTES, CH. 720, SEC. 33E-11

The undersigned, upon being first duly sworn, hereby certifies to the City of St. Charles, Kane and DuPage Counties, Illinois, that _____ _____(Bidder) is not barred from contracting with any unit of State or local government, as a result of a violation of Ch. 720, Sec. 33E-11 of the Illinois Compiled Statutes.

_____
Name of Bidder

By:_____

State of _____),
ss.
County of _____)

Subscribed and sworn to
before me this _____ day
of_____,_____.

_____
Notary Public

NOTE TO BIDDER: Anyone who makes a false statement, material to this Certification, commits a Class 3 Felony under Illinois Compiled Statutes, Ch. 720, Sec. 33E-11 (b).

CERTIFICATE OF COMPLIANCE WITH SAFETY STANDARDS

The undersigned, upon being first duly sworn, hereby certifies to the City of St. Charles, Kane and DuPage Counties, Illinois, that _____ _____(Bidder) shall comply with all local, state and federal safety standards.

_____
Name of Bidder

By:_____

State of _____),
ss.
County of _____)

Subscribed and sworn to
before me this _____ day
of_____,_____.

_____
Notary Public

CERTIFICATE OF COMPLIANCE WITH PUBLIC ACT 87-1257
OF THE ILLINOIS HUMAN RIGHTS ACT

The undersigned, upon being first duly sworn, hereby certifies to the City of St. Charles, Kane and DuPage Counties, Illinois, that _____ _____ (bidder) complies with the Illinois Human Rights Act as amended by Section 2-105, Public Act 87-1257 in relation to employment and human rights.

_____
Name of Bidder

By:_____

State of _____),
ss.
County of _____)

Subscribed and sworn to
before me this _____ day
of_____,_____.

_____
Notary Public

CERTIFICATE OF COMPLIANCE WITH PREVAILING WAGE RATE ACT

The undersigned, upon being first duly sworn, hereby certifies to the City of St. Charles, Kane and DuPage Counties, Illinois, that all work under this contract shall comply with the Illinois Prevailing Wage Act, 820 ILCS 130/.01, et. seq, (the "Act") and current City ordinance, to the extent required by law. Contractors shall submit monthly certified payroll records to the City.

_____
Name of Contractor

By:_____

State of _____),
ss.
County of _____)

Subscribed and sworn to
before me this _____ day
of_____,_____.

_____
Notary Public

/cjb
Bidders Section II

CERTIFICATE OF COMPLIANCE WITH SALES TAX FORM

The undersigned, upon being first duly sworn, hereby certifies to the City of St. Charles, Kane and DuPage Counties, Illinois, that _____ _____(Bidder) shall comply with General Conditions, Paragraph 1.G. and the Illinois Department of Revenue tax exempt form.

_____
Name of Bidder

By:_____

State of _____),
ss.
County of _____)

Subscribed and sworn to
before me this _____ day
of_____,_____.

_____
Notary Public

JH:
Bidders Section II

City of St. Charles
Certificate of Insurance Requirements

The Vendor/Contractor shall be required to carry and evidence insurance coverage with a standard Acord Certificate of Insurance with minimum limits applicable. Sample attached.

1. Minimum Insurance Requirements and Limits

Coverage		*Limits*
A. Automobile Liability	$1,000,000	Combined single limit
B. Commercial General Liability	$1,000,000	Per occurrence
	$2,000,000	General aggregate

All Commercial General Liability policies must include Blanket Contractual coverage and Broad Form Vendors' Liability coverage.

C. Workers' Compensation	$500,000	Per accident
(Employers' Liability)	$500,000	Disease limit
	$500,000	Each Disease
D Umbrella Liability	$5,000,000	Limit
E. Cyber (If Applicable)	$1,000,000	Limit
F. Professional Liability (If Applicable)	$1,000,000	Limit

2. Cancellation or Alteration

Should any of the above described policies be cancelled before the expiration date thereof, notice will be delivered in accordance with the policy provisions.

3. Workers' Compensation and General Liability Waiver of Subrogation in favor of the City from their carrier.

4. Insurance Certificates

A. Must be submitted ten (10) days prior to any work being performed to allow review of certificates.
B. Certificates not meeting requirements must be revised and resubmitted within fifteen (15) days or the subcontractor will not be allowed on the jobsite.

5. Additional Insured and Broad Form Vendors' Liability in favor of the City.

The City must be named as an Additional Insured with the following wording appearing on the Certificate of Insurance: "The City of St. Charles and any official, trustee, director, officer, or employee of the City (plus any holder or mortgage as designated by the City), shall be named as an Additional Insured for the Commercial General Liability as respects any and all projects for any work being performed. This coverage will apply on a primary and noncontributory basis."

6. Minimum Insurance Carrier

All contractors, manufacturers/distributors, and suppliers' insurance carriers must comply with the minimum A.M Best rating of A-VI for all insurance carriers.

Illinois Department of Revenue
Office of Local Government Services
Sales Tax Exemption Section, 3-520
101 W. Jefferson Street
Springfield, IL 62702
217 782-6881

January 2, 2015

CITY OF ST CHARLES
DIRECTOR OF FINANCE
TWO EAST MAIN ST
ST CHARLES IL 60174

Effective January 1, 2015, we have renewed your governmental exemption from payment of the Retailers Occupation Tax, the Service Occupation Tax (both state and local), the Use Tax, and the Service Use Tax, as required by Illinois law.

We have issued the following new tax exemption identification number:

E9996-0680-07
to
CITY OF ST CHARLES
of
ST CHARLES, IL

The terms and conditions governing use of your exemption number remain unchanged.

Office of Local Government Services
Illinois Department of Revenue

Issued To: _____

Company: _____

Date Issued: _____

Project: _____

Dates Valid: _____

Christopher A. Minick, Director of Finance

STS-70 (R-2/98)
IL-492-3524
10-0001288

CERTIFICATE OF NONDISCRIMINATION

This is to certify that this firm does not and will not discriminate in any of its employment practices against persons because of their race, color, religion, sex or place of national origin, or ancestry.

The undersigned will take all necessary affirmative action as may be required by all applicable Federal, State and Local laws, ordinances, rules, regulations and orders to ensure that applicants are employed and that employees are treated, during employment, without regard to their race, color, religion, sex or national origin or ancestry.

Firm: _____

By: _____

Title: _____

Date: _____

STATE OF ILLINOIS)
)
COUNTY OF KANE & DUPAGE)

AFFIDAVIT OF NONCOLLUSION

The undersigned, who has herewith submitted a bid to provide,

_____

_

(describe nature of service or product)

in accordance with plans and specifications furnished by the City of St Charles for

_____

(describe project)

does hereby affirm that said undersigned person and/or firm into any agreement, understanding, or arrangement with any other bidder or prospective bidder or with any other person, firm, or corporation relating to the price named in said proposal, nor has said undersigned person and/or firm entered into any agreement, understanding, or arrangement under which any person, firm, or corporation is to refrain from bidding, nor any agreement, understanding, or arrangement for any act or omission in restraint of free competition among bidders.

The undersigned further affirms that said undersigned person and/or firm is not disqualified by law from contracting with the City of St Charles; and that said undersigned person and/or firm has not disclosed to any person, firm, or corporation the terms of this proposal or the price named herein.

_____
Company

_____ _____
Bid for Address

_____ _____
Date Duly authorized agent or officer

Subscribed and sworn to me

this_____day of_____, A.D. 20_____

_____
Notary Public

SPECIAL PROVISION
FOR
Best Management Practices Training

All general and sub-contractors who manage or carry out routine maintenance or replacement of public surfaces and utilities are required to provide annual training to their employees in current Best Management Practices.

All training shall be in accordance with the current regulations governed by the National Pollution Discharge Elimination System (NPDES) ILR-40 General Permit Section 5, Article D, Paragraph ii.

Contractors shall provide confirmation of training below.

I, _____ (Company Owner or Management Representative) hereby acknowledge that all employees working on this project who will manage or carry out maintenance or replacement of public surfaces have completed the required annual low impact design/green technology training for this permit cycle year (April 1, ____ – March 31, ____).

Signature: _____ Title: _____

Date: _____ Company: _____

CITY OF ST. CHARLES

CONTRACTOR'S PREQUALIFICATION
WORK HISTORY STATEMENT

_____
_____Name of Company

_____
Name / Title

being an authorized representative of said company hereby certifies that all statements made in this Work History Statement are made on behalf of the undersigned Contractor in support of its Prequalification Statement to perform

PRECAST BOX CULVERT REPLACEMENT AT JOHN DEUTSCH AND CMP CULVERT INVERT REPAIRS AT 7TH AVENUE INCLUDING GROUT INJECTION INTO VOIDS BEHIND CULVERT WALLS. FOR ALTERNATE BID AT JOHN DEUTSCH DRIVE, WORK HISTORY FOR 7TH AVENUE CULVERT REPAIRS WILL BE APPLICABLE. FOR ALTERNATE BID AT 7TH AVENUE – SUBMIT WORK HISTORY FOR GEOPOLYMER LINER AND CMP INVERT REPAIRS.
(List prequalification work items)

for the City of St. Charles, Illinois.

I,_____have carefully prepared, reviewed and checked this Work History Statement and certify that the statements contained in this Work History Statement are true and correct.

1. Nature of Business

State the nature of the Contractor's business:

_____

_____

2. Composition of Work

During the past five years, Contractor's work has consisted of:

___% Federal ___% As Contractor ___% Contractor's Forces
___% Other Public____% As Subcontractor ___% Subcontractors
___% Private ___% Materials

3. Years in Business

State the number of years (_____) that contractor, under its current name and organization has been continuously engaged in the aforesaid business.

4. Predecessor Organizations

If Contractor has been in business for less than five years, list any predecessor organizations:

NAME	ADDRESS	YEARS

5. Business Licenses

List all business licenses currently held by Contractor:

ISSUING AGENCY	TYPE	NUMBER	EXPIRATION

6. Related Experience

List three public improvement projects within the prequalification areas that have been completed by Contractor, or its predecessors, in the past five years including the names of the municipal references:

PROJECT ONE

Municipality Name: _____

Address: _____

Reference Name: _____

Title: _____

Phone Number: _____

Type of Work: _____

Awarded Amount: _____

Final Amount: _____

Contract Completion Date: _____

Date Completed: _____

PROJECT TWO

Municipality Name: _____

Address: _____

Reference Name: _____

Title: _____

Phone Number: _____

Type of Work: _____

Awarded Amount: _____

Final Amount: _____

Contract Completion Date: _____

Date Completed: _____

PROJECT THREE

Municipality Name: _____

Address: _____

Reference Name: _____

Title: _____

Phone Number: _____

Type of Work: _____

Awarded Amount: _____

Final Amount: _____

Contract Completion Date: _____

Date Completed: _____

7. Contract Quantitative Experience

List the cumulative contract amounts of work completed over the past five years of business:

2013: _____ 2014: _____ 2015: _____

2016: _____ 2017: _____

8. Proposed Subcontractors (Section Not Required)

List subcontractors which may be used to complete the work:

Subcontractor Name	Class of Work	% of work	IDOT Qualified Yes/No

DATED this_____day of_____, 20___.

CONTRACTOR:

By: _____

Title: _____

Company: _____

Address: _____

_____

Phone: _____

E-mail: _____

BDE SPECIAL PROVISIONS
For the April 27 and June 15, 2018 Lettings

The following special provisions indicated by an "x" are applicable to this contract and will be included by the Project Development and Implementation Section of the BD&E. An * indicates a new or revised special provision for the letting.

	File Name	#		Special Provision Title	Effective	Revised
	80099	1		Accessible Pedestrian Signals (APS)	April 1, 2003	Jan. 1, 2014
	80382	2		Adjusting Frames and Grates	April 1, 2017	
	80274	3		Aggregate Subgrade Improvement	April 1, 2012	April 1, 2016
	80192	4		Automated Flagger Assistance Device	Jan. 1, 2008	
	80173	5		Bituminous Materials Cost Adjustments	Nov. 2, 2006	Aug. 1, 2017
	80241	6		Bridge Demolition Debris	July 1, 2009	
	5026I	7		Building Removal-Case I (Non-Friable and Friable Asbestos)	Sept. 1, 1990	April 1, 2010
	5048I	8		Building Removal-Case II (Non-Friable Asbestos)	Sept. 1, 1990	April 1, 2010
	5049I	9		Building Removal-Case III (Friable Asbestos)	Sept. 1, 1990	April 1, 2010
	5053I	10		Building Removal-Case IV (No Asbestos)	Sept. 1, 1990	April 1, 2010
	80366	11		Butt Joints	July 1, 2016	
	80386	12		Calcium Aluminate Cement for Class PP-5 Concrete Patching	Nov. 1, 2017	
	80396	13		Class A and B Patching	Jan. 1, 2018	
	80384	14		Compensable Delay Costs	June 2, 2017	
	80198	15		Completion Date (via calendar days)	April 1, 2008	
	80199	16		Completion Date (via calendar days) Plus Working Days	April 1, 2008	
	80293	17		Concrete Box Culverts with Skews > 30 Degrees and Design Fills ≤ 5 Feet	April 1, 2012	July 1, 2016
	80311	18		Concrete End Sections for Pipe Culverts	Jan. 1, 2013	April 1, 2016
	80277	19		Concrete Mix Design – Department Provided	Jan. 1, 2012	April 1, 2016
	80261	20	X	Construction Air Quality – Diesel Retrofit	June 1, 2010	Nov. 1, 2014
	80387	21		Contrast Preformed Plastic Pavement Marking	Nov. 1, 2017	
	80029	22		Disadvantaged Business Enterprise Participation	Sept. 1, 2000	July 2, 2016
	80378	23		Dowel Bar Inserter	Jan. 1, 2017	Jan. 1, 2018
	80388	24		Equipment Parking and Storage	Nov. 1, 2017	
	80229	25		Fuel Cost Adjustment	April 1, 2009	Aug. 1, 2017
	80304	26		Grooving for Recessed Pavement Markings	Nov. 1, 2012	Nov. 1, 2017
	80246	27		Hot-Mix Asphalt – Density Testing of Longitudinal Joints	Jan. 1, 2010	April 1, 2016
	80347	28		Hot-Mix Asphalt – Pay for Performance Using Percent Within Limits – Jobsite Sampling	Nov. 1, 2014	Jan. 1, 2018
	80383	29		Hot-Mix Asphalt – Quality Control for Performance	April 1, 2017	Nov. 1, 2017
	80376	30		Hot-Mix Asphalt – Tack Coat	Nov. 1, 2016	
	80392	31		Lights on Barricades	Jan. 1, 2018	
	80336	32		Longitudinal Joint and Crack Patching	April 1, 2014	April 1, 2016
	80393	33		Manholes, Valve Vaults, and Flat Slab Tops	Jan. 1, 2018	
	80045	34		Material Transfer Device	June 15, 1999	Aug. 1, 2014
*	80394	35		Metal Flared End Section for Pipe Culverts	Jan. 1, 2018	April 1, 2018
	80165	36		Moisture Cured Urethane Paint System	Nov. 1, 2006	Jan. 1, 2010
	80349	37		Pavement Marking Blackout Tape	Nov. 1, 2014	April 1, 2016
	80371	38		Pavement Marking Removal	July 1, 2016	
	80390	39		Payments to Subcontractors	Nov. 2, 2017	
	80377	40		Portable Changeable Message Signs	Nov. 1, 2016	April 1, 2017
	80389	41		Portland Cement Concrete	Nov. 1, 2017	
	80359	42		Portland Cement Concrete Bridge Deck Curing	April 1, 2015	Nov. 1, 2017
	80385	43		Portland Cement Concrete Sidewalk	Aug. 1, 2017	
	80300	44		Preformed Plastic Pavement Marking Type D - Inlaid	April 1, 2012	April 1, 2016
	80328	45		Progress Payments	Nov. 2, 2013	
	3426I	46		Railroad Protective Liability Insurance	Dec. 1, 1986	Jan. 1, 2006

File Name	#		Special Provision Title	Effective	Revised
80157	47		Railroad Protective Liability Insurance (5 and 10)	Jan. 1, 2006	
80306	48		Reclaimed Asphalt Pavement (RAP) and Reclaimed Asphalt Shingles (RAS)	Nov. 1, 2012	Jan. 1, 2018
80395	49		Sloped Metal End Section for Pipe Culverts	Jan. 1, 2018	
80340	50		Speed Display Trailer	April 2, 2014	Jan. 1, 2017
80127	51		Steel Cost Adjustment	April 2, 2004	Aug. 1, 2017
80391	52		Subcontractor Mobilization Payments	Nov. 2, 2017	
80317	53		Surface Testing of Hot-Mix Asphalt Overlays	Jan. 1, 2013	April 1, 2016
80298	54		Temporary Pavement Marking (NOTE: This special provision was previously named *"Pavement Marking Tape Type IV"*.)	April 1, 2012	April 1, 2017
20338	55		Training Special Provisions	Oct. 15, 1975	
80318	56		Traversable Pipe Grate for Concrete End Sections (NOTE: This special provision was previously named "*Traversable Pipe Grate*".)	Jan. 1, 2013	Jan. 1, 2018
80288	57		Warm Mix Asphalt	Jan. 1, 2012	April 1, 2016
80302	58		Weekly DBE Trucking Reports	June 2, 2012	April 2, 2015
80071	59		Working Days	Jan. 1, 2002	

The following special provisions are in the 2018 Supplemental Specifications and Recurring Special Provisions.

File Name	Special Provision Title	New Location	Effective	Revised
80368	Light Tower	Article 1069.08	July 1, 2016	
80369	Mast Arm Assembly and Pole	Article 1077.03(a)(1)	July 1, 2016	
80338	Portland Cement Concrete Partial Depth Hot-Mix Asphalt Patching	Recurring CS #35	April 1, 2014	April 1, 2016
80379	Steel Plate Beam Guardrail	Articles 630.02, 630.05, 630.06, and 630.08	Jan. 1, 2017	
80381	Traffic Barrier Terminal, Type 1 Special	Article 631.04	Jan. 1, 2017	
80380	Tubular Markers	Articles 701.03, 701.15, 701.18, and 1106.02	Jan. 1, 2017	

The following special provisions require additional information from the designer. The additional information needs to be submitted as a separate document. The Project Development and Implementation section will then include the information in the applicable special provision. The Special Provisions are:

- Bridge Demolition Debris
- Building Removal - Case I
- Building Removal – Case II
- Building Removal - Case III
- Building Removal-Case IV
- Completion Date
- Completion Date Plus Working Days
- DBE Participation
- Material Transfer Device
- Railroad Protective Liability Insurance
- Training Special Provisions
- Working Days

Illinois Department of Transportation

Check Sheet For Recurring Special Provisions

The Following Recurring Special Provisions Indicated By An “X” Are Applicable To This Contract And Are Included By Reference:

Recurring Special Provisions

Check Sheet #			Page No.
1	☐	Additional State Requirements for Federal-Aid Construction Contracts	64
2	☐	Subletting of Contracts (Federal-Aid Contracts)	67
3	☐	EEO	68
4	☐	Specific EEO Responsibilities Non Federal-Aid Contracts	78
5	☐	Required Provisions - State Contracts	83
6	☐	Asbestos Bearing Pad Removal	89
7	☐	Asbestos Waterproofing Membrane and Asbestos Hot-Mix Asphalt Surface Removal	90
8	☐	Temporary Stream Crossings and In-Stream Work Pads	91
9	☐	Construction Layout Stakes Except for Bridges	92
10	☐	Construction Layout Stakes	95
11	☐	Use of Geotextile Fabric for Railroad Crossing	98
12	☐	Subsealing of Concrete Pavements	100
13	☐	Hot-Mix Asphalt Surface Correction	104
14	☐	Pavement and Shoulder Resurfacing	106
15	☐	Patching with Hot-Mix Asphalt Overlay Removal	107
16	☐	Polymer Concrete	109
17	☐	PVC Pipeliner	111
18	☐	Bicycle Racks	112
19	☐	Temporary Portable Bridge Traffic Signals	114
20	☐	Work Zone Public Information Signs	116
21	☐	Nighttime Inspection of Roadway Lighting	117
22	☐	English Substitution of Metric Bolts	118
23	☐	Calcium Chloride Accelerator for Portland Cement Concrete	119
24	☐	Quality Control of Concrete Mixtures at the Plant	120
25	☒	Quality Control/Quality Assurance of Concrete Mixtures	128
26	☐	Digital Terrain Modeling for Earthwork Calculations	144
27	☐	Reserved	146
28	☐	Preventive Maintenance - Bituminous Surface Treatment	147
29	☐	Reserved	153
30	☐	Reserved	154
31	☐	Reserved	155
32	☐	Temporary Raised Pavement Markers	156
33	☐	Restoring Bridge Approach Pavements Using High-Density Foam	157
34	☐	Portland Cement Concrete Inlay or Overlay	160
35	☐	Portland Cement Concrete Partial Depth Hot-Mix Asphalt Patching	164

The Following Local Roads And Streets Recurring Special Provisions Indicated By An “X” Are Applicable To This Contract And Are Included By Reference:

Local Roads And Streets Recurring Special Provisions

Contents

SPECIAL PROVISIONS

The following Special Provisions supplement the "Standard Specifications for Road and Bridge Construction," adopted April 1, 2016 (and hereinafter referred to as the "Standard Specifications"); the latest edition of the "Illinois Manual on Uniform Traffic Control Devices for Streets and Highways" in effect on the date of invitation for bids, the latest manual for Testing of Materials, the latest edition of the Illinois Urban Manual" prepared by the U.S. Department of Agriculture Natural Resource Conservation Service in effect on the date of invitation for bids; the latest edition of the "Standard Specifications for Water and Sewer Main Construction in Illinois" in effect on the date of invitation for bids; the Supplemental Specifications and Recurring Special Provisions," adopted January 1, 2017 as indicated on the check sheet herein, and the latest edition of the Illinois Electrical Standards in effect on the date of invitation for bids, which apply to and govern the construction of John Deutsch Drive, and 7th Avenue Culvert improvements in Kane County and in case of conflict with any part or parts of said specifications, the said Special Provisions shall take precedence and shall govern.

LOCATION OF PROJECT

Improvements are located at two project locations, consisting of improvements to John Deutsch Drive over 7th Ave. Creek (Project Location #1), and 7th Avenue over 7th Ave. Creek (Project Location #2).

John Deutsch Drive culvert improvements are located at 1405 S. 7th Avenue, St. Charles, Illinois just south of the intersection of Ronzheimer Ave. and 7th Avenue where John Deutsch Drive crosses 7th Ave. Creek.

7th Avenue culvert improvements are located approximately 475 feet south of the intersection of Madison Avenue and 7th Avenue, where 7th Avenue crosses 7th Ave. Creek. The site location is accessible from the dead end of Spring Avenue which intersects with South 10th Avenue (one block east of 7th Avenue) approximately 260 feet south of Madison Avenue.

DESCRIPTION OF PROJECT

Project Location #1: Work to be performed under this contract for the John Deutsch Drive improvements consist of replacing an existing double CMP culvert and concrete end sections with a proposed double Precast Concrete Box Culvert and concrete end sections to carry John Deutsch Drive over 7th Ave. Creek. This work will include, but not be limited to, removal of existing structures, box culvert end sections, precast-concrete box culverts, reconstruction of approximately 190 feet of John Deutsch Drive, replacement of existing sidewalk and curb and gutter as detailed in the plans, replacement of existing concrete driveway apron along the west side of 7th Avenue, rip rap armoring, erosion control and restoration of disturbed areas, removal and disposal of unsuitable material, water main replacement as detailed in the plans, pavement resurfacing in construction staging area(s), tree and debris removal, guardrail installation and coordination with existing utility companies for construction conflicts and utility relocations, and all incidental and collateral work necessary to complete the project as shown on

the plans and described herein.

Project Location #2: Work to be performed under this contract for the 7th Avenue improvements consist of repairs to the existing CMP culvert inverts, installation of rip rap, debris and tree removal, erosion control and restoration as detailed in the plans and all incidental and collateral work necessary to complete the project as described in the plans and herein.

This contract also includes alternate bids for each project location:

Alternate Bid for Project Location #1 consists of repairs to the existing CMP dual pipe culvert inverts at John Deutsch Drive over 7th Avenue Creek. This work will include, but not be limited to, filling of existing culvert invert voids and repairing culver invert voids per plan details, rip rap armoring, erosion control, debris removal, and temporary flow bypass.

Alternate Bid for Project Location #2 consists of installing a Geopolymer Liner in each of the existing CMP arch culverts that carry 7th Avenue over 7th Avenue Creek. This work will include, but not be limited to filling of existing culvert invert voids and repairing culver invert voids per plan details, rip rap armoring, erosion control, debris removal, temporary flow bypass, and installation of Geopolymer Liner of entire inside diameter of the existing CMP arch culverts. If authorized by the City of St. Charles, all work associated with this alternate bid will be included in the unit price for the Geopolymer Liner.

All of the proposed improvements are located within the City of St. Charles, Kane County, Illinois. These special provisions will apply to each project location noted in the plans and each alternative bid for those project locations as applicable for the proposed work described at each location in the plans.

AWARD OF CONTRACT BASE AND ALTERNATE BIDS

Each bidder may submit on the BASE BID for Project Location 1, Project Location 2, or both Project Location 1 and Project Location 2. Each bidder must submit on at least one of the BASE BID project locations to be eligible for the award of contract. Failure to do so will result in rejection of the Contractor's bid.

The City reserves the right to award the contract(s) to the lowest responsive, responsible bidder for the BASE BID in the schedule of prices for either Project Location 1, Project Location 2, or both, based upon which bids are in the City's best interest. The City reserves the right to award separate contracts for Project Location 1 and Project Location 2. The City reserves the right to award the most favorable combination of BASE and ALTERNATE BIDS, based upon which is in the City's best interest.

Accompanying the proposal is either a bid bond on Department form BLR 12230 or a proposal guarantee check, complying with the specification, made payable to the City, with an amount being 5% of the bid amount for the sum of the BASE BID(S).

COMPLETION DATE

For the John Deutsch Drive Culvert Improvements, the completion date shall be no later than **June 28, 2019**. For the 7th Avenue Culvert Repairs (and/or the alternate bid for the John Deutsch project location, and/or the alternate bid for 7th Avenue Culvert Lining), the completion date shall be no later than **October 30, 2018,** with an anticipated award date of September 4, 2018.

The completion date of **June 28, 2019** shall include the following work items for John Deutsch Drive Culvert Improvements at a minimum

- Coordination with Nicor for Gas Main temporary disconnect and removal in Spring of 2019 ahead of construction.
- water main remove and replace
- storm sewers improvements,
- concrete gutters,
- driveway pavement
- double precast concrete box culvert and box culvert end sections
- roadway pavement replacement and restoration on John Deutsch; and designated areas of the Public Works parking lot.
- Debris and tree removal
- Substantial completion of grading, erosion control and restoration.
- If the alternate bid for John Deutsch Drive Culvert Repairs is awarded, then that work shall have the same required completion date as the 7th Avenue Culvert Repairs.

The completion date of **October 30, 2018** shall include the following work items for 7th Avenue Culvert repairs at a minimum

- Existing CMP invert repairs
- Rip rap armoring of the upstream end section invert.
- If the alternate bid for 7th Avenue Culvert Lining is authorized, then the work associated with those improvements shall also be completed.
- Substantial completion of grading, erosion control and restoration.
- If the alternate bid for John Deutsch Drive Culvert Repairs is awarded, then the work associated with that alternate bid shall also be completed.

If the Contractor fails to complete the work by the above-specified dates, Article 108.09 or the Special Provision for "Failure to Complete the Work on Time", if included in this contract, shall apply to the interim completion date and the final completion date.

The Contractor will not be provided additional compensation for maintaining traffic control and protection through winter conditions. Any costs incurred by the Contractor due to winter shutdown will be considered included in the contract unit prices.

The Contractor will not be provided additional compensation for re-startup and re-mobilization costs

over the duration of the contract. The Contractor will not be provided additional compensation for material or labor increases over the duration of the contract.

FAILURE TO COMPLETE WORK ON TIME
Effective: September 30, 1985
Revised: January 1, 2007

Should the Contractor fail to complete the work on or before the completion dates as specified in the Special Provision for "Completion Date", or within such extended time as may have been allowed by the City, the Contractor shall be liable to the City in the amount of $1,500, not as a penalty but as liquidated damages, for each calendar day or a portion thereof of overrun in the contract time or such extended time as may have been allowed.

In fixing the damages as set out herein, the desire is to establish a certain mode of calculation for the work since the City's actual loss, in the event of delay, cannot be predetermined, would be difficult of ascertainment, and a matter of argument and unprofitable litigation. This said mode is an equitable rule for measurement of the City's actual loss and fairly take into account the loss of use of the roadway if the project is delayed in completion. The City shall not be required to provide any actual loss in order to recover these liquidated damages provided herein, as said damages are very difficult to ascertain. Furthermore, no provision of this clause shall be construed as a penalty, as such is not the intention of the parties.

A calendar day is every day shown on the calendar and starts at 12:00 midnight and ends at the following 12:00 midnight, twenty-four hours later.

NOTIFICATION OF WORK
The Contractor shall notify the City of St Charles Engineer 48 hours prior to commencement of all items of work.

CONSTRUCTION OPERATIONS
In order to minimize the effect of construction noise during the improvement, the Contractor and his subcontractors shall comply with the following requirements. Any changes to the schedule will not be accepted unless approved by the Engineer.

- All engines and engine driven equipment used for hauling or construction shall be equipped with an adequate muffler in constant operation and properly maintained to prevent excessive unusual noises. Any machine or device or part thereof which is regulated by or becomes regulated by Federal or State of Illinois noise standards shall conform to those standards.
- Construction operations including the startup of heavy equipment shall not begin before 7:00 AM Monday through Saturday. Construction operations including site cleanup, shall be completed before 7:00 PM Monday through Friday and 5:00PM on Saturday. No work

of any kind, shall be done on Sundays or holidays observed in Illinois. These time restrictions shall not apply to maintenance or operation of safety and traffic control devices such as barricades, signs and/or lighting, or construction of an emergency nature. If the Contractor requires additional time to complete a portion of the work on any given day or if he foresees the need to work extended hours for a number of days to comply with the construction schedule, he must receive approval of the Engineer.

- The Contractor shall schedule and conduct his operations so that the closure time of an existing driveway along the route of improvements is kept to a minimum. All homeowners shall be given a minimum 24-hour notice prior to initial removal of their driveway apron. The Contractor shall make every effort to keep driveways open including temporary grading and placement of aggregate.
- Beginning on the date that the Contractor commences work on the project, he/she shall assume responsibility for normal maintenance of all existing roadways within the limits of the improvements. Normal maintenance shall include all repair work deemed necessary by the Engineer. The work involved in maintaining the existing pavement shall be included in the cost of MOBILIZATION.

SEQUENCE OF CONSTRUCTION

The Contractor shall submit, within one week of a signed contract, a construction schedule with a proposed staging plan/sequence for the project. The work to be performed under the awarded contract for the John Deutsch and 7th Avenue locations shall not include overlapping work schedules at the two locations unless such work can be shown to expedite the overall project schedule without causing delays at either site location and only after obtaining approval of the City. The duration of construction activities at the 7th Avenue Culverts and the associated construction presence on Spring Avenue are to be minimized, as is the duration of the closure of John Deutsch Drive. No road closure on 7th Avenue, Spring Avenue or any residential streets (excluding John Deutsch Drive) within the City of St. Charles are anticipated or allowed as part of this contract. Driveway access for residents on Spring Avenue are to be kept open at all times unless the Contractor coordinates with the City and home owners one week prior for an agreed upon limited duration of driveway access obstruction.

STATUS OF UTILITIES TO BE ADJUSTED

Several existing buried and overhead utilities are to remain in place and in service including several that will require temporary support and protection in the area of the project where excavation for culvert removal and replacement at John Deutsch Road will expose existing buried utilities. The temporary support and protection of such utilities is to be included in the unit price for each applicable structure pay item, which for this project includes PRECAST CONCRETE BOX CULVERT, 12'x6' and/or BOX CULVERT END SECTIONS, depending on which structure(s) construction requires temporary support of existing utilities.

Utility companies involved in this project have provided the following estimated dates:

Name of Utility	Type	Location	Estimated Dates for Start / Completion / Relocation or Adjustments
John Deutsch Drive:			
City of St. Charles Electrical	Buried Lines for Lighting on John Deutsch Drive and Gate Operation	Along John Deutsch shoulder and across John Deutsch Drive near Gated Entrance	Light Poles and buried electrical (along north shoulder) to be removed and reinstalled by others. Gate Equip. and buried electrical under John Deutsch Drive to remain, contractor shall protect. Electrical hand hole south of John Deutsch to be adjusted.
City of St. Charles Electrical	Poles & Structures	West side of 7th Ave. over driveway entrance	No Relocation planned. Contractor to Coordinate with ComEd and other utilities on existing poles for any temporary insulation or adjustment of utilities.
AT&T	Poles, structures & buried lines	West side of 7th Ave. over driveway entrance. Also buried along North & South side of John Deutsch Drive	No relocation of overhead location on 7th Avenue is planned. Buried conduit along North Side of John Deutsch is to remain in place & active, Contractor to coordinate temporary support over excavation area. Conduit along South Side is reported by AT&T to be abandoned and in-active, Contractor to verify.

Comcast	Poles, structures & buried lines	West side of 7th Ave. over driveway entrance. Also buried along north side of John Deutsch Drive	Contractor to coordinate temporary support over excavation area
Fiber Optic	Service Line to Public Works Facility	Along North side of John Deutsch Drive and crossing John Deutsch Drive near Gated Entrance	No relocation, Contractor to coordinate temporary support over excavation area.
Water Main	8" D.I.	Under John Deutsch Drive	Remove and Replace as noted in Plans. Coordinate with City of St. Charles Public Works Dept. Portion of Existing to be cut and capped per plan.
Sanitary Sewer	Various sizes and materials	In Public Works Parking lot	To Remain in place. Contractor to field verify no conflicts.
Storm Sewer	Various pipe sizes & materials	Outlets from Public Works Parking Lot	Pipe to be replaced per plan, Rip Rap Armoring of existing Flared End Sections and outlets per plan. Erosion control per plan.
Nicor Gas	4" Gas Main	Buried along 7th Ave., & South side of John Deutsch Drive.	Nicor will temporarily disconnect and remove main from construction area and reconnect prior to pavement restoration. Main can be out of service only during months of May through September.

7th Avenue:

Nicor	Various main and service lines	Along 7th Ave. and residential streets	To remain, Contractor to field verify no conflicts.
Water Main	Various main and service lines	Buried under roadway, private and public property	To remain in place. Contractor to field location to verify no conflicts
Sanitary Sewer	Various main and service lines	Buried under roadway, private and public property.	To remain in place. Contractor to field location to verify no conflicts
Storm Sewer	12" RCP	Buried under 7th Ave. and outlets into existing north CMP culvert.	To remain in place. In bid alternate: the space around the penetration shall fully lined, outlet protected and reactivated prior to end of construction.
Storm Sewer	Various main and service line sizes	Buried under roadway, private and public property	To remain in place. Contractor to field location to verify no conflicts

The Contractor shall coordinate with the City of St. Charles to isolate water shut off so that no disruption of service to the Public Works building or any residential users occurs. It is understood that the Public Works facility has more than one water main service line connection to its facility. The Contractor shall give the City Engineer at least forty-eight (48) hours' notice for any shut downs of the existing water main. Contractor shall coordinate with the City to ensure that the described interruption of water services will impact any users.

The above represents the best information available at the time of Design and is included for the convenience of the bidder. The applicable portions of Articles 105.07 and 107.31 of the Standard Specifications shall apply.

APPROVAL OF SUBCONTRACTORS

The Contractor shall provide a list of the intended source of materials and the intended Subcontractor to be used for the project. The City of St Charles shall approve all subcontractors to be used on the project and reserves the right to reject the use of any subcontractor due to past performance or the apparent inability to perform the item of the work required of him.

PROGRESS SCHEDULE AND WEEKLY REPORTING

In addition to the progress schedule submitted and approved prior to construction (Article 108.02), the Contractor will be required to submit a weekly plan of what daily work operations he intends to perform for the upcoming two weeks. This report will be a continuation of the Engineer's "Weekly Report of Resident" BC 239 which will be submitted to the Contractor promptly following each week of work. The Contractor's plan should show his operations including those of all subcontractors.

DAILY PROJECT SCHEDULING

The Contractor shall telephone the Engineer every morning to inform the Engineer of daily and weekly progress and schedules.

PUNCH LIST ITEMS

Throughout the duration of the project the Engineer shall submit periodic punch list items to the Contractor. **The City Public Works Division will also perform utility inspections of work completed on public utilities. Inspections by the Public Works Division are required prior to installation of pavement surface course.** Items must be complete within five (5) calendar days after the Engineer notifies the Contractor of punch list. Liquidated damages will be assessed if items are not complete to the satisfaction of the Engineer within five (5) calendar days. Punch list items and dates will be strictly enforced and documented with the Contractor via the "Weekly Report of Resident"-BC 239.

CONTRACTOR PAYOUTS – REQUIRED SUBMITTALS

Contractor payout requests can be submitted at any time, and do not have to go through a scheduled City Council Meeting to authorize payment; as long as the Contract amount is not exceeded. Change Orders, which would cause the Contract to go above Original Contract Amount, will go through scheduled Committee and Council Meetings for approval.

Submittals required for **any** Contractor payouts, which must be received prior to release of payout, are listed below:

1. Lien Waivers from General Contractor and any Subcontractors or Vendor receiving payments from subject payout.
2. Copies of Certified Payroll for period when work was completed.
3. Sworn Statement from General Contractor.

WAGE RATES

Kane County Prevailing Wages shall be used for all work performed under this contract.

PERMITS

The work under this contract shall conform to all regulations stated in the ACOE Regional Permit(s) and the IDNR/OWR permit issued for this project. The work shall also conform to Kane-DuPage County Soil and Water Conservation District (KDSWCD) requirements. Any fees required by the KDSWCD throughout the duration of the project shall be the responsibility of the Contractor. The KDSWCD must be notified of the preconstruction meeting in writing 10 days prior to the preconstruction meeting. A binder with all obtained permits, consultation recommendations and notices will be provided to the contractor. The permits from the United States Army Corps of Engineers (USACOE) and KDSWCD have been issues and are included in the appendix of these specifications. The ENGINEER is in the process of obtaining an IDNR/OWR permit for the proposed culvert improvements and an IEPA permit for water main and a stormwater management permit from the City of St. Charles and anticipates having the permits prior to start of Construction.

CLEAN CONSTRUCTION OR DEMOLITION DEBRIS (CCDD)

The Contractor is to be aware of and comply with CCDD requirements. The City of St. Charles will provide IEPA form LPC-663, which will be executed by the City and provided to the contractor at the pre-construction meeting. It is our understanding that CCDD sites are accepting the 663 forms for spoil created in industrial areas. The majority of the soil spoil material in this contract will be generated in industrial areas. The contractor shall make sure that the CCDD site being utilized will accept the material based on the LPC-663 form and the fact that they are in industrial areas. If the CCDD site being selected by the Contractor will not accept it, the Contractor will be responsible for the requirements necessary for the completion and execution of the LPC-663 forms for the industrial areas at no additional cost to the City.

CONSTRUCTION LAYOUT

This work shall consist of the Contractor establishing all construction staking and layout in the field necessary for completion of the work as detailed in the design plans. Electronic CAD files will be furnished upon request containing the roadway alignment, control points and benchmark information.

Basis of Payment: This work shall be paid for at the contract unit price per lump sum for CONSTRUCTION LAYOUT and no additional compensation will be allowed.

CONSTRUCTION STAKES, LINES AND GRADES

Construction staking and benchmark establishment will be the responsibility of the Contractor, and shall be included in the unit price for CONSTRUCTION LAYOUT. The Contractor shall assume full responsibility for dimensions and elevations measured for such stakes.

The Contractor shall exercise care in the preservation of the stakes and marks, and shall have them reset at his/her expense when they are damaged, lost, displaced, removed or otherwise obliterated.

PRE-CONSTRUCTION VIDEOTAPING

The Contractor shall prepare pre-construction video documentation of all features in the areas affected by construction, including areas adjacent to the right-of-way and construction easements. All video cameras, recorders, tapes, accessories and appurtenances shall be high quality CD or DVD format equipment. Pre-construction video documentation shall consist of a series of high-resolution color audio-video tapes showing all areas affected by construction. All pertinent exterior and interior features within the construction's zone of influence shall be shown in sufficient detail to document its pre-construction condition. Features to be shown shall include but not be limited to pavements, curbs, driveways, sidewalks, retaining walls, buildings, landscaping, trees, shrubbery, fences, light posts, signs, interior features and equipment, etc. Viewer orientation shall be maintained by audio commentary on the audio track of each, videotape to help explain what is being viewed.

The pre-construction videotaping shall be completed after the initial walkthrough and two copies of the tape(s) submitted to the City of St Charles before commencing with any construction activities, including material delivery. This work shall be included in the cost of CONSTRUCTION LAYOUT.

ADVANCED PUBLIC NOTIFICATION

Description: This work shall consist of furnishing, installing, maintaining, and relocating temporary information signing for various stages of construction.

The Contractor shall provide notice to the public a minimum of 5 days in advance of any work that requires the closure of lanes through the use of temporary information signing.

Basis of Payment: This work shall be NOT be measured for payment but shall be included in the Lump Sum unit price for TRAFFIC CONTROL.

CLEANING

The Contractor and his subcontractors by the end of the working day shall remove from the premises rubbish, waste material and accumulations and shall keep the premises clean. **The Contractor shall keep the premises clean during construction to the satisfaction of the Engineer. This work shall be incidental to the contract**.

MAINTENANCE OF ROADWAYS

Beginning on the date that the Contractor begins work on this project, he shall assume responsibility for 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 maintenance of roadways will be provided by the Contractor as required by the Engineer.

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.

TRAFFIC CONTROL PLAN

Traffic Control shall be according to the applicable sections of the Standard Specifications for Road and Bridge Construction, the Supplemental Specifications, the Illinois Manual on Uniform Traffic Control Devices for Streets and Highways, these special provisions, and any special details and Highway Standards contained herein and in the plans.

Special attention is called to Articles 107.09 and 107.14 of the Standard Specifications for Road and Bridge Construction and the following Highway Standards relating to traffic control.

Standards
701001, 701006, 701501, 701301, 701801, 701901

Details
Maintenance of Traffic Details

Special Provisions
Work Zone Traffic Control
Road Closure Requirements
Work Zone Traffic Control Devices
Flagger Vests
Temporary Information Signing

TEMPORARY INFORMATION SIGNING

Description: This work shall consist of furnishing, installing, maintaining, relocating for various states of construction and eventually removing temporary informational signs. Included in this item may be ground mount signs, skid mount signs, truss mount signs, bridge mount signs, and overlay sign panels which cover portions of existing signs.

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

	Item	Article/Section
a.)	Sign Base (Notes 1 & 2)	1090
b.)	Sign Face (Note 3)	1091
c.)	Sign Legends	1092
d.)	Sign Supports	1093
e.)	Overlay Panels (Note 4)	1090.01

Note 1.	The Contractor may use 16mm (5/8 inch) instead of 19mm (3/4 inch) thick plywood.
Note 2.	Type A sheeting can be used on the plywood base.
Note 3.	All sign faces shall be Type A except all orange signs shall meet the requirements of Article 1084.02(b).
Note 4.	The overlay panels shall be 2mm (0.08 inch) thick.

GENERAL CONSTRUCTION REQUIREMENTS
Installation: The sign sizes and legend sizes shall be verified by the Contractor prior to fabrication.

Signs which are placed along the roadway and/or within the construction zone shall be installed according to the requirements of Article 702.05 and Article 720.04. The signs shall be 2.1m (7') above the near edge of the pavement and shall be a minimum of 600mm (2') beyond the edge of the paved shoulder. A minimum of 2 posts shall be used.

The attachment of temporary signs to existing sign structures or sign panels shall be approved by the Engineer. Any damage to the existing signs due to the Contractor's operations shall be repaired or signs replaced, as determined by the Engineer, at the Contractor's expense.

Signs which are placed on overhead bridge structures shall be fastened to the handrail with stainless steel bands. These signs shall rest on the concrete parapet where possible. The Contractor shall furnish mounting details for approval by the Engineer.

Method of Measurement: This work shall be NOT be measured for payment but shall be included in the Lump Sum unit price for TRAFFIC CONTROL.

All hardware, posts or skids, supports, bases for ground mounted signs, connections, which are required for mounting these signs will be included as part of this pay item.

Basis of Payment: This work shall be included in the contract unit price per lump sum for TRAFFIC CONTROL, which price shall be full compensation for all labor, equipment and materials required for performing the work as herein specified.

TRAFFIC CONTROL

Specific traffic control plan details have not been prepared since the work is to be performed under a closure of John Deutsch Drive (which does not require a marked detour route) and no staging or closure of any other local residential streets are anticipated for the culvert improvements at either John Deutsch Drive or 7th Avenue. Use of Spring Avenue for access to the 7th Avenue culvert shall have a limited construction equipment footprint such that residential driveway access and use of Spring Avenue is uninterrupted. Any Traffic Control and Protection and pavement marking tape, type III required prior to

closing John Deutsch Drive and/or after opening the John Deutsch Drive will be according to applicable Highway Standards and included in the item of work for TRAFFIC CONTROL.

Method of Measurement: All traffic control will be included in the Lump Sum unit price for TRAFFIC CONTROL.

Basis of Payment: All additional traffic control and protection will be included in the contract unit price per lump sum for TRAFFIC CONTROL. This shall be payment in full for all labor, materials, transportation, handling and incidental work necessary to furnish, install, cover, maintain, and remove all traffic control devices and pavement marking tape, type III required for this project.

ROAD CLOSURE REQUIREMENTS

The Contractor will be allowed to close John Deutsch Drive to through traffic to allow for the installation of the culvert and water main, and storm sewer improvements replacements. No other road closures are allowed. Temporary lane closures must have traffic control plans submitted to the City for approval, and must include the length of time such temporary lane closures will last, with none exceeding a single 4 hour period of time.

1. The John Deutsch Drive closures shall be completed using Type III barricades in compliance with Standards 701901, and signing according to Traffic Control for Road Closure detail. Two flashers shall be installed above each Type III barricade. The "ROAD CLOSED" (R11-2) signs shall be placed as shown in Standard 701901. Flashers shall be installed above all warning signs involving a night time road closure. If a portion of the road is completely closed between a side road and any entrances, the roadway will be kept open to local access in the other direction between that closure and the next road.

2. The Contractor shall be required to notify the City of St. Charles prior to a complete closure.

3. The Contractor shall limit staging and operational footprint in the Public Works parking lot so as not to interfere with daily operations at the Public Works facility and shall adjust the fencing and traffic flow from the staging area to the construction area as needed at the request of the City, Public Works Staff and/or the Engineer.

4. All cost involved in conforming with this provision shall be considered a part of TRAFFIC CONTROL.

5. **The Contractor must reopen John Deutsch Drive to vehicular and pedestrian traffic within twelve (12) weeks from initial closure. The Contractor must complete all construction activity in the area of the 7th Ave. culverts within 2 (2) weeks from initial setup at that location.**

If the John Deutsch is not opened to traffic, as specified above for both dates, the Contractor shall be

liable to the City in the amount of $3,000.00 per day or portion thereof that the roadway is closed, not as penalty but as liquidated damages. Such damages may be deducted by the City from monies due the Contractor.

CITY TRUCK PERMIT REQUIREMENTS

The City of St. Charles with respect to roadways under its jurisdiction requires permits for trucks that exceed allowable weight/sizes. The Contractor shall be responsible for contacting the City of St. Charles Police Department to verify truck weight/size limits and obtain permits as necessary for applicable trucks that will be used by Suppliers of materials and equipment and/or Contractor's vehicles that will be used for construction activities.

Contractor is responsible for permit fees, proof of liability insurance requirements, route selection for vertical and horizontal clearances and posted vehicle weight limits, and complying with safety requirements such as escort vehicles, vehicle flags, reduced speed limits and allowed time of day movement on City streets when applicable.
CONTACT INFO:

City of St. Charles Police Department
211 N. Riverside Avenue, St. Charles, IL 60174
Non-Emergency Telephone: (630) 377-4435

Contractors doing work for the City of St. Charles (under contract with the City or the state) are not exempt and still need to apply for permits. The permit fee will be waived.

STOCKPILE AREA

Description: This work shall consist of fencing, signage, traffic control, erosion control, and all work and permitting required for operating, maintaining and restoring a temporary stock pile area outside of the existing floodplain, outside of regulatory wetlands and at a location the Contractor is responsible for arranging and paying for at his cost. If the Contractor chooses to use the optional stockpile area on City property identified in the plans, all work and costs associated with the stockpile area shall still be at the Contractor's expense and the area shall be restored to the satisfaction of the Engineer and the City. Additional or separate offsite stockpile and staging areas selected by the Contractor shall be at his expense and Contractor shall be responsible for all permitting, maintenance and restoration related to offsite locations.

Installation: This work shall be performed in accordance with all applicable Best Management practices established by NPDES, the Illinois Urban Manual and Kane-DuPage Soil and Water Conservation District.

Basis of Payment: This work will not be measured or paid for separately and shall be at the Contractor's expense.

CONSTRUCTION FENCE

Description: This work shall consist of placement of temporary construction fence around the construction site where required per the plans and/or as directed by the Engineer. The Contractor is responsible for construction fence for protection of stock pile areas, construction equipment and all additional temporary fencing for making the construction site safe from public access. The lack of construction fence indicated on the plans or by the Engineer does not alleviate the Contractor's responsibility to maintain a safe condition on the project site to prevent public access.

Basis of Payment: This work will not be measured for payment but shall be incidental to the project costs.

PROTECTION OF TREES AND SHRUBS

Contractor shall stake area of tree and shrub removal mark large diameter trees for removal and get City or Engineer approval of area and trees identified for removal prior to removing. Any large diameter trees, shrubs and/or landscape areas not identified for removal shall be protected and cared for during the construction in accordance with the applicable Articles of Section 201 of the Standard Specifications and this Special Provision, with the following revisions. The Contractor shall prune all tree roots along the side of the proposed improvement, prior to digging, in the presence of the qualified Arborist (hired by the Contractor) and Engineer. All costs for root pruning and costs for the Arborists shall be paid for by the Contractor and shall be included in the cost of TREE REMOVAL. No additional compensation will be allowed for root pruning or Arborist's fees.

Every effort should be made by the Contractor when working near trees and shrubs to preserve same from harm. No trees or shrubs shall be removed unless authorized in the field by the Engineer. The Contractor shall provide the Engineer notification ten (10) working days prior to the removal of any tree or shrub. The Contractor shall be responsible for damage to or loss of any tree or shrub not specifically designated to be removed.

Damage to trees limbs shall be held to a minimum. Shrubs and trees limbs shall be tied back wherever necessary to prevent their loss or damage. Wherever damage by construction equipment to limbs and branches are unavoidable, they should be pruned before starting work in accordance with Articles 201.06 of the Standard Specifications.

Small trees (less than 4 inches in diameter) and shrubs not indicated for removal which are removed or severely damaged during construction shall be replaced in kind and size by the Contractor at no additional cost to the City, Engineer, or Resident. All planting shall be done in accordance with Section 1081 of the Standard Specifications.

Damages at the rate of two hundred dollars ($200.00) per inch of trunk diameter shall be charges against the Contractor for unauthorized removal or destruction of any tree four (4) inches in diameter or larger. The protection and care of trees and shrubs as herein specified will be included in the cost of TREE REMOVAL.

PROTECTION OF EXISTING DRAINAGE FACILITIES DURING CONSTRUCTION

Unless otherwise noted in the Contract Documents, the existing drainage facilities shall remain in use during the period of construction. Prior to commencing work, the Contractor, at his own expense shall determine the exact locations of existing structures that are within the proposed construction limits.

Unless reconstruction or adjustment of an existing manhole, catch basin, inlet or adjustment to the frame and grate is called for in the Contract Documents or ordered by the Engineer, the proposed work shall meet the existing elevation of these structures.

The Contractor shall take the necessary precautions when working near or above existing sewers to protect these sewers from any damage resulting from his operations. All work and material necessary to repair any existing sewers damaged due to non-compliance with this provision shall be provided, as directed by the Engineer, in accordance with Section 550 of the Standard Specifications, at the Contractor's expense with no extra compensation being allowed.

It shall be the Contractor's responsibility to direct the work and protect the facilities from damage during all construction activities.

LOCATING STORM SEWER, SANITARY SEWER, WATERMAIN OR OTHER COMPONENTS OF CITY UTILITIES

To prevent damage and facilitate work by others, the City will promptly respond to calls requesting the location of City owned storm sewer, sanitary sewer, watermain, or other components of City utilities. Public Works forces will locate City owned underground utilities or any other components, one time for each individual system, per project or contract, as requested by the general contractor of the construction project, before or after transfer of maintenance responsibilities. Each request may involve multiple locations where separated utility systems are involved. The Contractor will be required to reimburse the City of St Charles for time and material costs associated with additional locate requests.

The Contractor shall only call in locates for work to be accomplished within seven days.

USE OF FIRE HYDRANTS

The Contractor shall contact the City of St Charles Water Division to obtain a water meter and for permission to use water from existing fire hydrants. The Water Division reserves the right to restrict which fire hydrant(s) may be used. The Contractor shall use special care in opening and closing of fire hydrants following Water Division guidelines. Repairs caused by failure to comply with proper operating guidelines will result in the sole responsibility of the Contractor.

SAWING PAVEMENT, DRIVEWAY PAVEMENT, SIDEWALK, AND CURB

This work shall be performed at locations stated in the Contract Documents or as directed by the Engineer.

The Contractor shall cut the joint between the portion of pavement, driveway, sidewalk and/or curb to be removed and that to be left in place with a sawing machine to prevent spalling. This work shall be done

in a manner that a straight and perpendicular joint will be secure. All saw cutting should be the full depth of the pavement, driveway, and sidewalk or curb to be removed.

It is the Contractor's responsibility to determine the thickness of the existing pavement and whether or not it contains reinforcement. This work shall be included in the cost of the item being removed. No additional compensation will be allowed for sawing reinforcement.

LIMITS OF REMOVAL

All pay items for removal and replacement must be field measured and marked by the Engineer prior to construction. No payment will be made for any items of work, which have been removed and/or replaced without having been field measured and marked by the Engineer. No additional payment will be made for removal and/or replacement beyond field markings unless specifically authorized by the Engineer.

DEBRIS REMOVAL FROM CHANNEL

Description: This work shall consist of labor and material required for removing and properly disposing of wooded and miscellaneous debris from existing channel and existing culverts for the number of locations indicated in plan where debris piles have gathered in the existing creek channel and/or culvert openings and areas identified for culvert repairs. A sample photo of what a typical debris pile looks like is included in the plans. This work shall be measured as a single lump sum item and paid for as DEBRIS REMOVAL FROM CHANNEL. This work will be paid for once, even if performed on multiple occasions during the construction period for each awarded project location or alternative bid unless noted otherwise in the plans or these specifications.

CLEARING

This work shall consist of clearing material as defined in Section 201 of the Standard Specifications from sloped embankments designated for grading in the plans. This work shall be done in conformance with Section 201 of the Standard Specifications except that the work shall be measured and paid for at the contract unit price per ACRES for CLEARING.

INLET AND PIPE PROTECTION

Description: This work shall consist of placement of protection surrounding storm sewer structures as shown on the plans and as directed by the Engineer. IDOT Standard 280001 shall be utilized with the exception that the use of hay bales is exclusively prohibited. The Contractor shall properly maintain the system at all times during the life of the contract.

Installation: This work shall be performed in accordance with all applicable articles of Section 280 of the Standard Specifications and as directed by the Engineer.

Basis of Payment: This work will be paid for at the contract unit price per EACH for INLET AND PIPE PROTECTION, which price shall include all materials and labor necessary to install, maintain, remove and dispose of the system as show on the plans or as directed by the Engineer.

TEMPORARY DITCH CHECKS – COIR LOG

This work shall be performed in accordance with applicable portions of Section 280.04 of the Standard Specifications, and as directed by the Engineer. This work shall be performed in the locations shown on the plans. The coir logs shall be made of rolled excelsior. The coir logs shall be staked using wooden stakes at a maximum four (4)' spacing.

This work shall be measured for payment in FOOT. This work shall be paid for at the contract unit price per FOOT for TEMPORARY DITCH CHECKS – COIR LOG which price shall include all of items listed in the Standard Specifications.

EROSION CONTROL FENCE

Description: This work consists of the installation of Erosion Control Fence in accordance with applicable articles of Section 280 of the Standard Specifications, the Illinois Urban Manual and as detailed on the plans. The work shall include supplying, installing, relocating, and maintaining Erosion Control Fence as directed by the Engineer or KDSWCD.

Method of Measurement: This work shall be measured for payment as linear foot.

Basis of Payment: This work will be paid for at the contract unit price per FOOT for EROSION CONTROL FENCE, which price shall be full compensation for all labor, equipment and materials required for performing the work as herein specified and detailed on the plans

EROSION CONTROL BLANKET

Description: This work consists of the installation of Erosion Control Blanket in accordance with applicable articles of Section 251 of the Standard Specifications, the Illinois Urban Manual, except that the material and product type shall be as noted on the plans, or equal. The work shall include supplying, installing, relocating, and maintaining Erosion Control Blanket as directed by the Engineer or KDSWCD.

Method of Measurement: This work shall be measured for payment as square yard.

Basis of Payment: This work will be paid for at the contract unit price per SQUARE YARD for EROSION CONTROL BLANKET, which price shall be full compensation for all labor, equipment and materials required for performing the work as herein specified and detailed on the plans

CONCRETE BREAKERS

When removing pavement, curb and gutter, shoulder, and/or other structures, the use of any type of concrete breakers, which might damage underground public or private utilities, will not be permitted. Under no circumstances will the use of a frost ball be permitted. The Contractor is prohibited from breaking up concrete by dropping it on the pavement or in any other manner, which in the opinion of the Engineer may damage existing or proposed pavements or other roadway appurtenances.

HOT-MIX ASPHALT SURFACE REMOVAL, 7", SPECIAL

Hot-Mix Asphalt Surface Removal, 7", Special shall consist of the removal of the existing asphalt surface and binder pavement to the thickness of grinding of 7" over the full-width of the roadway as shown on the plans and in the summary of quantities. It is anticipated that the entire asphalt pavement will be removed in addition to a portion of the aggregate base course, exposing the base course.

All areas in the roadway that are generally loose aggregate shall be, shaped, water added if necessary, and compacted as shown on the plans and to the satisfaction of the Engineer. It may be necessary to grade and shape the existing aggregate base course in order to establish the proposed base course elevation.

Proof-rolling with a 45,000-pound, rubber-tired vehicle in the presence of the Engineer shall be required to demonstrate that the base is firm and in proper condition for resurfacing.

Base or subgrade repairs needed at this time shall be marked and measured for payment by the Engineer, and shall be paid for at the contract unit price per square yard for AGGREGATE BASE COURSE, TYPE B, 4 INCH.

Hot-Mix Asphalt Surface Removal, 7", Special shall consist of removing the asphalt surface in order to provide a relatively smooth surface for placing of the proposed hot-mix asphalt resurfacing. It is the intent to remove the entire asphalt surface as required, so as to profile the street and thereby provide a proper surface for resurfacing without raising the present crown of the road. The average depth to be removed is 7 inches as shown on the plans, however, no additional compensation will be granted for removal of asphalt surface for variance in thickness (some of the roadway may have 6 inches to 8 inches of asphalt over the aggregate base) or excavation and disposal of excess material. The method of performing this work shall be reviewed with and acceptable to the Engineer and the profiling shall be acceptable to the Engineer before the proposed asphalt surface can be placed. Excess aggregate material resulting from grading of the base course to accommodate the proposed hot-mix asphalt thickness shall be hauled away at contractor's expense.

Surface Removal shall be measured in place and the area computed in square yards. This work will be paid for at the contract unit price per SQUARE YARD for HOT-MIX ASPHALT SURFACE REMOVAL, 7", SPECIAL. Saw cutting shall be considered included. The Contractor will be required

to construct the binder course lift on milled surfaces within 5 calendar days; failure to do so shall result in a charge of $1,000 per each calendar day over the above specified time.

The materials generated shall become property of the Contractor and shall be removed from the site of work at the end of the day. Failure to do so shall result in a charge of $500 per each calendar day over the day of the removal operations.

AGGREGATE BASE COURSE, TYPE B, 4" SPECIAL

Aggregate Base Course, Type B, 4" Special shall consist of adding base course as needed to raise and shape the existing base course to the necessary elevation to support the new HMA binder and surface course layers at John Deutsch Drive for the locations identified in plan for HOT-MIX ASPHALT SURFACE REMOVAL, 7", SPECIAL. It is anticipated the top of the existing base course will need to be raised 2". The 4" thickness specified is intended to account for scarification of the top of the existing base course during HMA surface and binder removal and repairs that may be necessary to the existing base course per the proof rolling requirements in the project Special Provision for HOT-MIX ASPHALT SURFACE REMOVAL, 7", SPECIAL.

The method of performing this work shall be reviewed with and acceptable to the Engineer and the profiling shall be acceptable to the Engineer before the proposed pavement section and additional aggregate base are placed. Excess aggregate material resulting from grading of the base course to accommodate the proposed hot-mix asphalt thickness shall be hauled away at contractor's expense. Unused furnished aggregate will not be measured for payment.

Aggregate base course shall be measured in place and the area computed in square yards. This work will be paid for at the contract unit price per SQUARE YARD for AGGREGATE BASE COURSE, TYPE B, 4", SPECIAL.

The materials generated shall become property of the Contractor and shall be removed from the site of work at the end of the day. Failure to do so shall result in a charge of $500 per each calendar day over the day of the removal operations.

PAVEMENT REMOVAL, FULL DEPTH

This work consists of the removal and disposal of the roadway pavement in the area of excavation required for the existing culvert removal and replacement. The removal and disposal of this material shall be performed in accordance with applicable articles of Section 440 of the standard specifications.

These removal areas shall be saw cut full depth prior to removal. Pavement replacement in this area shall be paid for separately.

The Contractor will be required to remove the entire pavement structure, including the aggregate base,

unless otherwise note on the plans and/or otherwise directed by the Engineer.

Basis of Payment: This work will be paid for at the contract unit price per SQUARE YARD for PAVEMENT REMOVAL, FULL DEPTH which price shall be payment in full for saw cutting, removal and disposal of the entire pavement structure.

PORTLAND CEMENT CONCRETE DRIVEWAY REMOVAL AND REPLACEMENT

This work shall be in accordance with applicable portions of Sections 351, 423, and 440 of the Standard Specifications, except as herein modified.

This work shall include removal and disposal of excavated material for Portland Cement Concrete (P.C.C.) driveways located throughout the project limits. Excavated materials shall include but not limited to Portland cement concrete pavement, HMA concrete pavement, aggregate subbase and soil. Excavation to subgrade shall not be paid for separately, but shall be included in the cost of PORTLAND CEMENT CONCRETE DRIVEWAY REMOVAL AND REPLACEMENT.

This work shall include placement of four (4) inches of aggregate base course under eight (8) inches of Portland Cement Concrete. If the existing base is soft or unsuitable, the Contractor shall remove the existing base and provide compacted granular material (CA-6 or approved equal) as required to provide a stable subbase.

All exposed concrete shall receive a protective surface treatment consisting of two (2) coats of boiled linseed oil and petroleum spirits mixture, formulated and applied according to Article 420.18 of the Standard Specifications. If an application of sand is required by the Engineer for blotter material, it will be considered incidental to this work. The application of both coats shall be witnessed by the Engineer. The Engineer shall be notified 24 hours in advance prior to application. Protective surface treatment shall not be paid for separately but shall be included in the cost of the concrete item provided.

This work shall be paid for at the contract unit price per SQUARE YARD for PORTLAND CEMENT CONCRETE DRIVEWAY REMOVAL AND REPLACEMENT, which price shall include all labor, materials, equipment, protective coat, backfill and incidentals necessary to complete the work as described above. Restoration shall be included in the cost of this bid item.

CURB REMOVAL AND REPLACEMENT

The work shall be done in accordance with applicable portions of Sections 351, 440 and 606 of the Standard Specifications, except as herein modified.

This work shall consist of the removal of the existing curb and gutter or removal of existing pavement or soil at the location of the proposed curb, excavation of material four (4) inches below the new curb, placement of four (4) inches of aggregate base course (CA-6 or approved equal), and pouring the new curb and gutter at locations as directed by the Engineer.

The type of replacement concrete curb and gutter, where applicable, shall match the existing curb and gutter or be of the type specified by the Engineer. The thickness of the proposed gutter flag shall match the thickness of the adjacent pavement but in no case be less than nine (9) inches. The proposed curb and gutter shall be constructed to a grade established by the Engineer at the time of construction. The Engineer must approve forming methods for pouring the curb and gutter. The use of the existing edge of pavement for HMA roadways shall not be considered a proper forming method for placement of P.C.C. material.

Any excavation required to construct the proposed curb and gutter to the proper elevation, including excavation to subgrade for placement of four (4) inches of aggregate base course (CA-6 or approved equal), shall be include in the contract unit price for CURB REMOVAL AND REPLACEMENT. Any excavated material by the Contractor for forming purposes shall be included in this pay item. Any excavated material shall be properly disposed of at a suitable off-site location.

Any pavement area adjacent to the curb and gutter not designed to be removed, which is removed, damaged or otherwise disturbed during construction operations, shall be restored to the satisfaction of the Engineer. The restoration will not be paid for separately but shall be included in the associated pay item.

In curb and gutter sections to remain and where cracks exist, the contractor shall clean, rout and seal cracks with an approved polysulfide sealer (Standard Specifications, Article 606)

If the existing base is soft or unsuitable, the Contractor shall remove the existing base and provide compacted granular material (CA-6 or approved equal) as required to provide a stable sub base.

The proposed curb and gutter shall be depressed across all handicapped ramps, driveways and/or directed by the Engineer. **Placement of depressed curbing for private walkways or carriage walks shall not be permitted.**

Expansion joints shall be installed at 60’ intervals and at all points of curvature where the radius is less than 100’. Contraction joints shall be formed at 15’ intervals. Contraction joints shall be formed by saw cutting to a depth of at least two inches (2”).

Two (2) drilled, epoxy coated, and grouted reinforcing bars or expansion tie anchors shall be used to tie the proposed curb and gutter to the existing curb and gutter. Two (2) continuous rebar shall be installed in all curb sections longer than five feet. See curb and gutter details for reinforcement sizing. Furnishing and installing the expansion tie anchors, drilled and grouted reinforcing bars, or continuous rebar shall not be paid for separately, but shall be included in the contract unit price for CURB REMOVAL AND REPLACEMENT.

All exposed concrete shall receive a protective surface treatment consisting of two (2) coats of boiled linseed oil and petroleum spirits mixture, formulated and applied according to Article 420.18 of the Standard Specifications. If an application of sand is required by the Engineer for blotter material, it will be considered incidental to this work. The application of both coats shall be witnessed by the Engineer.

The Engineer shall be notified 24 hours in advance prior to application. Protective surface treatment shall not be paid for separately but shall be included in the cost of the concrete item provided.

Where voids occur between the existing pavement and proposed curb any loose material shall be removed to the satisfaction of the engineer and it shall be backfilled with concrete to above the elevation of the proposed milled surface course and is considered included in the cost of the pay item. Soil backfill behind the proposed curb is considered included in the cost of the pay item.

The excavation, aggregate base course replacement or fill, earthwork, grading, bedding, Curing/Sealing Compound necessary to complete the curb and gutter is considered included in the cost of the pay item.

This work shall be paid for at the contract unit price per FOOT for CURB REMOVAL AND REPLACEMENT, which price shall include all labor, equipment, materials, protective coat and incidentals necessary to complete the work as described above. Restoration shall be included in the cost of the bid items.

SIDEWALK REMOVAL

The work shall be done in accordance with applicable portions of Sections 351, 424, and 440 of the Standard Specifications, Standard 424001, except as herein modified.

This work shall consist of removal of the existing concrete sidewalk as stated in the Contract Documents and/or as directed by the Engineer. The work shall include the removal of existing sidewalk, removal of 4" of existing base course, and restoration where new sidewalk is not proposed. Any excavated material shall be disposed of at a suitable off-site location. Any damage to the existing sidewalks, curbs or driveways remaining in place due to removal operations shall be replaced to the satisfaction of the Engineer at the Contractor's own expense.

This work shall be paid for at the contract unit price per SQUARE FOOT for SIDEWALK REMOVAL, which price shall include all labor, equipment, materials and incidentals necessary to complete the work as described above. Restoration shall be included in the cost of this bid item.

PORTLAND CEMENT CONCRETE SIDEWALK, SPECIAL, 8"

The work shall be done in accordance with applicable portions of Sections 351, 424, and 440 of the Standard Specifications, Standard 424001, except as herein modified.

This work shall consist of the construction of new Portland cement concrete sidewalks at locations as shown on the plans and/or as directed by the Engineer. The work shall include the removal of soil (where necessary) to provide for the placement of four (4) inches of aggregate base course (CA-6 or approved equal) and placement of new P.C.C. sidewalk.

Any excavation required to construct the proposed sidewalk and aggregate base course to the proper elevation, and the excavation required for forming purposes, shall be considered included in the pay item. Excavated material shall be disposed of at a suitable off-site location. Any damage to existing

sidewalks, curbs or driveways remaining in place due to forming methods or removal operations shall be replaced to the satisfaction of the Engineer at the Contractor's own expense. If the sub base material is soft or unsuitable, the Contractor shall remove unsuitable material and provide compacted granular material (CA-6 or approved equal) as required to provide a stable sub base.

Expansion joints shall be placed where the sidewalk abuts existing sidewalk, curbs and between concrete driveway pavement. The minimum slab thickness for sidewalks shall be 8 inches through concrete apron or driveway limits and 5 inches for all other public walkways unless otherwise noted by the Engineer.

All exposed concrete shall receive a protective surface treatment consisting of two (2) coats of boiled linseed oil and petroleum spirits mixture, formulated and applied according to Article 420.18 of the Standard Specifications. If an application of sand is required by the Engineer for blotter material, it will be considered incidental to this work. The application of both coats shall be witnessed by the Engineer. The Engineer shall be notified 24 hours in advance prior to application. Protective surface treatment shall not be paid for separately but shall be included in the cost of the concrete item provided.

The excavation, aggregate base course replacement or fill, earthwork, bedding, Curing/Sealing Compound necessary to complete the sidewalk is considered incidental to the pay item. Where grading (filling, cutting or shaping), is required adjacent to the sidewalk, it shall be considered included in the cost of the pay item. Any excavation or disposal of material necessary for the installation of the curb and gutter in order to meet the new grade shall be considered incidental to this item. The removal and disposal of existing sidewalks shall be paid for separately as SIDEWALK REMOVAL.

This work shall be paid for at the contract unit price per SQUARE FOOT for PORTLAND CEMENT CONCRETE SIDEWALK, SPECIAL which price shall include all labor, equipment, materials, protective coat, backfill and incidentals necessary to complete the work as described above. **Restoration shall be included in the cost of this bid item.**

REMOVAL OF EXISTING STRUCTURES, SPECIAL

Description: This work shall consist of the removal of the existing dual CMP culverts at John Deutsch Drive and the associated items described herein, and in conformance with Section 501 of the Standard Specification.

No separate measurements will be made for removal of existing end sections, superstructure and substructure elements, railings, guardrail, fencing, barriers, headwalls, existing steel pipes projecting vertically out of embankment near downstream end of existing culvert or other components attached to the existing bridges and/or culverts that are to be removed.

Such items will be included in the unit price per each for REMOVAL OF EXISTING STRUCTURES, SPECIAL.

Measurement: The removal of the existing dual culverts at John Deutsch Drive shall be measured as one

structure (no separate measurement for each culvert pipe will be made), and shall include the associated items described above.
Basis of Payment: This work shall be paid for at the contract unit price per EACH for REMOVAL OF EXISTING STRUCTURES, SPECIAL and no additional compensation will be allowed.

HOT MIX ASPHALT BINDER COURSE, IL-19.0, N50, 3"

This work shall be according to the Standard Specifications except for the following:

The Contractor shall make every effort to complete full roadway pavement section installation at John Deutsch Drive prior to the completion date stated in the Completion Date section of these special provisions. If final surface course cannot be completed prior to the completion date, then additional binder course shall be installed to match shoulder elevations until Surface Course can be installed. This additional interim binder thickness, if needed until surface course can be installed, shall not be measured for payment and shall be at the Contractors expense.

HMA MIXTURE DESIGN REQUIREMENTS (D-1)

Effective: January 1, 2013
Revised: January 1, 2018

1) Design Composition and Volumetric Requirements

Revise the table in Article 406.06(d) of the Standard Specifications to read:

"MINIMUM COMPACTED LIFT THICKNESS	
Mixture Composition	Thickness, in. (mm)
IL-4.75	3/4 (19)
SMA-9.5, IL-9.5, IL-9.5L	1 1/2 (38)
SMA-12.5	2 (50)
IL-19.0, IL-19.0L	2 1/4 (57)"

Revise the table in Article 1004.03(c) of the Standard Specifications to read:

"Use	Size/Application	Gradation No.
Class A-1, 2, & 3	3/8 in. (10 mm) Seal	CA 16
Class A-1	1/2 in. (13 mm) Seal	CA 15
Class A-2 & 3	Cover	CA 14
HMA High ESAL	IL-19.0 IL-9.5	CA 11 [1/] CA 16, CA 13[3/]
HMA Low ESAL	IL-19.0L IL-9.5L Stabilized Subbase or Shoulders	CA 11 [1/] CA 16
SMA[2/]	1/2 in. (12.5mm) Binder & Surface IL 9.5 Surface	CA13[3/], CA14 or CA16 CA16, CA 13[3/]

1/ CA 16 or CA 13 may be blended with the gradations listed.
2/ The coarse aggregates used shall be capable of being combined with stone sand, slag sand, or steel slag sand meeting the FA/FM 20 gradation and mineral filler to meet the approved mix design and the mix requirements noted herein.
3/ CA 13 shall be 100 percent passing the 1/2 in. (12.5mm) sieve.

Revise Article 1004.03(e) of the Supplemental Specifications to read:

"(e) Absorption. For SMA the coarse aggregate shall also have water absorption ≤ 2.0 percent."

Revise the last paragraph of Article 1102.01 (a) (5) of the Standard Specifications to read:

"IL-4.75 and Stone Matrix Asphalt (SMA) mixtures which contain aggregate having absorptions greater than or equal to 2.0 percent, or which contain steal slag sand, shall have minimum surge bin storage plus haul time of 1.5 hours."

Revise the nomenclature table in Article 1030.01 of the Standard Specifications to read:

"High ESAL	IL-19.0 binder; IL-9.5 surface; IL-4.75; SMA-12.5, SMA-9.5
Low ESAL	IL-19.0L binder; IL-9.5L surface; Stabilized Subbase (HMA)[1/]; HMA Shoulders[2/]

1/ Uses 19.0L binder mix.

2/ Uses 19.0L for lower lifts and 9.5L for surface lift."

Revise Article 1030.02 of the Standard Specifications and Supplemental Specifications to read:

"**1030.02 Materials.** Materials shall be according to the following.

Item ..... Article/Section
(a) ..... Coarse Aggregate 1004.03
(b) ..... Fine Aggregate 1003.03
(c) ..... RAP Material 1031
(d) ..... Mineral Filler 1011
(e) ..... Hydrated Lime 1012.01
(f) ..... Slaked Quicklime (Note 1)
(g) ..... Performance Graded Asphalt Binder (Note 2) 1032
(h) ..... Fibers (Note 3)
(i) ..... Warm Mix Asphalt (WMA) Technologies (Note 4)

Note 1. Slaked quicklime shall be according to ASTM C 5.

Note 2. The asphalt binder shall be an SBS PG 76-28 when the SMA is used on a full-depth asphalt pavement and SBS PG 76-22 when used as an overlay, except where modified herein.

The asphalt binder shall be an Elvaloy or SBS PG 76-22 for IL-4.75, except where modified herein. The elastic recovery shall be a minimum of 80.

Note 3. A stabilizing additive such as cellulose or mineral fiber shall be added to the SMA mixture according to Illinois Modified AASHTO M 325. The stabilizing additive shall meet the Fiber Quality Requirements listed in Illinois Modified AASHTO M 325. Prior to approval and use of fibers, the Contractor shall submit a notarized certification by the producer of these materials stating they meet these requirements. Reclaimed Asphalt Shingles (RAS) may be used in Stone Matrix Asphalt (SMA) mixtures designed with an SBA polymer modifier as a fiber additive if the mix design with RAS included meets AASHTO T305 requirements. The RAS shall be from a certified source that produces either Type I or Type 2. Material shall meet requirements noted herein and the actual dosage rate will be determined by the Engineer.

Note 4. Warm mix additives or foaming processes shall be selected from the current Bureau of Materials and Physical Research Approved List, "Warm Mix Asphalt Technologies"."

Revise Article 1030.04(a)(1) of the Standard Specifications and the Supplemental Specifications to read:

" (1) High ESAL Mixtures. The Job Mix Formula (JMF) shall fall within the following limits.

High ESAL, MIXTURE COMPOSITION (% PASSING) [1/]										
Sieve Size	IL-19.0 mm		SMA [4/] IL-12.5 mm		SMA [4/] IL-9.5 mm		IL-9.5 mm		IL-4.75 mm	
	min	max	min	max	min	max	min	max	min	max
1 1/2 in (37.5 mm)										
1 in. (25 mm)		100								
3/4 in. (19 mm)	90	100		100						
1/2 in. (12.5 mm)	75	89	80	100		100		100		100
3/8 in. (9.5 mm)				65	90	100	90	100		100
#4 (4.75 mm)	40	60	20	30	36	50	34	69	90	100
#8 (2.36 mm)	20	42	16	24 [5/]	16	32 [5/]	34 [6/]	52 [2/]	70	90
#16 (1.18 mm)	15	30					10	32	50	65
#30 (600 µm)			12	16	12	18				
#50 (300 µm)	6	15					4	15	15	30
#100 (150 µm)	4	9					3	10	10	18
#200 (75 µm)	3	6	7.0	9.0 [3/]	7.5	9.5 [3/]	4	6	7	9 [3/]
Ratio Dust/Asphalt Binder		1.0		1.5		1.5		1.0		1.0

1/ Based on percent of total aggregate weight.

2/ The mixture composition shall not exceed 44 percent passing the #8 (2.36 mm) sieve for surface courses with Ndesign = 90.

3/ Additional minus No. 200 (0.075 mm) material required by the mix design shall be mineral filler, unless otherwise approved by the Engineer.

4/ The maximum percent passing the #635 (20 µm) sieve shall be ≤ 3 percent.

5/ When establishing the Adjusted Job Mix Formula (AJMF) the percent passing the #8 (2.36 mm) sieve shall not be adjusted above the percentage stated on the table.

6/ When establishing the Adjusted Job Mix Formula (AJMF) the percent passing the #8 (2.36 mm) sieve shall not be adjusted below 34 percent.

Revise Article 1030.04(b)(1) of the Standard Specifications to read:

"(1) High ESAL Mixtures. The target value for the air voids of the HMA shall be 4.0 percent and for IL-4.75 it shall be 3.5 percent at the design number of gyrations. The VMA and VFA of the HMA design shall be based on the nominal maximum size of the aggregate in the mix, and shall conform to the following requirements.

<table>
<tr><td colspan="5">VOLUMETRIC REQUIREMENTS
High ESAL</td></tr>
<tr><td></td><td colspan="3">Voids in the Mineral Aggregate (VMA),
% minimum</td><td rowspan="2">Voids Filled with Asphalt Binder (VFA),
%</td></tr>
<tr><td>Ndesign</td><td>IL-19.0</td><td>IL-9.5</td><td>IL-4.75[1/]</td></tr>
<tr><td>50</td><td rowspan="3">13.5</td><td rowspan="3">15.0</td><td>18.5</td><td>65 – 78 [2/]</td></tr>
<tr><td>70</td><td rowspan="2"></td><td rowspan="2">65 - 75</td></tr>
<tr><td>90</td></tr>
</table>

1/ Maximum Draindown for IL-4.75 shall be 0.3 percent

2/ VFA for IL-4.75 shall be 72-85 percent"

Replace Article 1030.04(b)(3) of the Standard Specifications with the following:

"(3) SMA Mixtures.

Volumetric Requirements SMA [1/]			
Ndesign	Design Air Voids Target %	Voids in the Mineral Aggregate (VMA), % min.	Voids Filled with Asphalt (VFA), %
80 [4/]	3.5	17.0 [2/]	75 - 83
		16.0 [3/]	

1/ Maximum draindown shall be 0.3 percent. The draindown shall be determined at the JMF asphalt binder content at the mixing temperature plus 30 °F.

2/ Applies when specific gravity of coarse aggregate is ≥ 2.760.

3/ Applies when specific gravity of coarse aggregate is < 2.760.

4/ Blending of different types of aggregate will not be permitted. For surface course, the coarse aggregate can be crushed steel slag, crystalline crushed stone or crushed sandstone. For binder course, coarse aggregate shall be crushed stone (dolomite), crushed gravel, crystalline crushed stone, or crushed sandstone.

Add to the end of Article 1030.05 (d) (2) a. of the Standard Specifications:

"During production, the Contractor shall test SMA mixtures for draindown according to AASHTO T305 at a frequency of 1 per day of production."

Delete last sentence of the second paragraph of Article 1102.01(a) (4) b. 2.

Add to the end of Article 1102.01 (a) (4) b. 2.:

"As an option, collected dust (baghouse) may be used in lieu of manufactured mineral filler according to the following:

(a.) Sufficient collected dust (baghouse) is available for production of the SMA mix for the entire project.

(b.) A mix design was prepared based on collected dust (baghouse).

2) Design Verification and Production

Revise Article 1030.04 (d) of the Standard Specifications to read:

"(d) Verification Testing. High ESAL, IL-4.75, and SMA mix designs submitted for verification will be tested to ensure that the resulting mix designs will pass the required criteria for the Hamburg Wheel Test (IL mod AASHTO T-324) and the Tensile Strength Test (IL mod AASHTO T-283). The Department will perform a verification test on gyratory specimens compacted by the Contractor. If the mix fails the Department's verification test, the Contractor shall make the necessary changes to the mix and resubmit compacted specimens to the Department for verification. If the mix fails again, the mix design will be rejected.

All new and renewal mix designs will be required to be tested, prior to submittal for Department verification and shall meet the following requirements:

(1)Hamburg Wheel Test criteria. The maximum allowable rut depth shall be 0.5 in. (12.5 mm). The minimum number of wheel passes at the 0.5 in. (12.5 mm) rut depth criteria shall be based on the high temperature binder grade of the mix as specified in the mix requirements table of the plans.

Illinois Modified AASHTO T 324 Requirements [1/]

Asphalt Binder Grade	# Repetitions	Max Rut Depth (mm)
PG 70 -XX (or higher)	20,000	12.5
PG 64 -XX (or lower)	10,000	12.5

1/ When produced at temperatures of 275 ± 5 °F (135 ± 3 °C) or less, loose Warm Mix Asphalt shall be oven aged at 270 ± 5 °F (132 ± 3 °C) for two hours prior to gyratory compaction of Hamburg Wheel specimens.

Note: For SMA Designs (N-80) the maximum rut depth is 6.0 mm at 20,000 repetitions.
For IL 4.75mm Designs (N-50) the maximum rut depth is 9.0mm at 15,000 repetitions.

(2) Tensile Strength Criteria. The minimum allowable conditioned tensile strength shall be 60 psi (415 kPa) for non-polymer modified performance graded (PG) asphalt binder and 80 psi (550 kPa) for polymer modified PG asphalt binder. The maximum allowable unconditioned tensile strength shall be 200 psi (1380 kPa)."

Production Testing. Revise first paragraph of Article 1030.06(a) of the Standard Specifications to read:

"(a) High ESAL, IL-4.75, WMA, and SMA Mixtures. For each contract, a 300 ton (275 metric tons) test strip, except for SMA mixtures it will be 400 ton (363 metric ton), will be required at the beginning of HMA production for each mixture at the beginning of each construction year according to the Manual of Test Procedures for Materials "Hot Mix Asphalt Test Strip

Procedures". At the request of the Producer, the Engineer may waive the test strip if previous construction during the current construction year has demonstrated the constructability of the mix using Department test results."

Add the following after the sixth paragraph in Article 1030.06 (a) of the Standard Specifications:

"The Hamburg Wheel test shall also be conducted on all HMA mixtures from a sample taken within the first 500 tons (450 metric tons) on the first day of production or during start up with a split reserved for the Department. The mix sample shall be tested according to the Illinois Modified AASHTO T 324 and shall meet the requirements specified herein. Mix production shall not exceed 1500 tons (1350 metric tons) or one day's production, whichever comes first, until the testing is completed and the mixture is found to be in conformance. The requirement to cease mix production may be waived if the plant produced mixture demonstrates conformance prior to start of mix production for a contract.
If the mixture fails to meet the Hamburg Wheel criteria, no further mixture will be accepted until the Contractor takes such action as is necessary to furnish a mixture meeting the criteria"

Method of Measurement:

Add the following after the fourth paragraph of Article 406.13 (b):

"The plan quantities of SMA mixtures shall be adjusted using the actual approved binder and surface Mix Design's G_{mb}."

Basis of Payment.

Replace the fourth paragraph of Article 406.14 of the Standard Specifications with the following:

"Stone matrix asphalt will be paid for at the contract unit price per ton (metric ton) for POLYMERIZED HOT-MIX ASPHALT SURFACE COURSE, STONE MATRIX ASPHALT, of the mixture composition and Ndesign specified; and POLYMERIZED HOT-MIX ASPHALT BINDER COURSE, STONE MATRIX ASPHALT, of the mixture composition and Ndesign specified."

WATER SUPPLY

The indiscriminate use of existing streams, creeks, wetlands or ponds is strictly prohibited. The Contractor shall contact the City of St. Charles for a water meter and approval for the use of a City Fire Hydrant or else provide a water truck and driver as required to obtain and transport water from an approved source. The Contractor shall be responsible for obtaining water from an approved source. If this water is from a source other than his yard or an approved and metered City hydrant, written approval from the agency having jurisdiction for the source of the water must be received by the Contractor prior to use of the water.

HEAT OF HYDRATION CONTROL FOR CONCRETE STRUCTURES (D-1)

Effective: November 1, 2013

Article 1020.15 shall not apply

WATERMAIN REMOVE AND REPLACE 8" DUCTILE IRON, CLASS 52 WITH POLYETHYLENE ENCASEMENT

Description

This work shall consist of the furnishing and installation of a ductile iron water main and fittings, with interior diameter as indicated on plans or as directed by the Engineer, including all excavation backfill, insulation, demolition, testing, material and labor required to complete the installation and have the installed watermain accepted by the owner. This work will also include pavement removal and/or patching when that work is not already accounted for elsewhere in the plans. The work shall be constructed in accordance with the applicable sections of the Section 40 and 41 of the "Standard Specifications for Water and Sewer Construction in Illinois", the latest edition, and Sections 561, 562, 563, 564, and 565 of the Standard Specifications, except as modified herein. Specifications outlined by the City of St. Charles shall take precedence.

Materials

A. Watermain Pipe:
   a. Ductile Iron Class 52, conforming to AWWA Standard C-151.
      i. Cement Lining, conforming to AWWA Standard C-104.
      ii. Mechanical or push-on joints shall conform to AWWA Standard C-111.
      iii. At minimum, Type 3 laying conditions shall be provided, conforming to AWWA Standard C-600.
   b. All watermains shall be encased in a High Density Polyethylene Encasement (8 mil min.) with its material specifications and installation method in accordance with ANSI.AWWA C105/A21.5, ASTM A674, using "Method A" installation.
   c. Brass Wedges shall be installed to provide electrical conductivity.

B. Joint Restraint:
   All mechanical joint fittings shall have restraining glands installed. Restraint device shall be Uni-flange by Ford Company or Mega-lug by EBAA Iron. Push joint pipe restraint shall be Field Lock Gaskets by US Pipe or Series 1700 Mega-lug or Series 1390 Pipe Restraint by Ford. Lengths of pipe restraint shall be determined from manufacturers installation specifications (refer to watermain restraint detail).

C. Thrust Blocking:
   Concrete thrust blocks, as shown on the plans and/or directed by the Engineer, shall be

constructed at plugs, tees, and bends of 3000 psi. concrete in accordance with section 41-2.10 of the "Standard Specifications for Water and Sewer Main Construction in Illinois", latest edition, and City of St. Charles standards. The concrete thrust blocks shall completely fill the space between the bends or fittings and the walls of the trench from 6 inches below the fittings to 12 inches above the fitting with no possible interference with the making or remaking of the joints. In addition to the concrete thrust blocking all mechanical joints, bends of 11 degrees and larger, and fire hydrants shall be a "Megalug" restraint or approved equal. Bolts shall be "304 Grade Stainless Steel". This work shall be considered incidental to the cost of the water main.

Construction Requirements

At least 30 days prior to installation of water mains covered in these specifications, the Contractor is required to submit to the City of St. Charles and the Engineer shop drawings/catalog descriptions of all items to be installed showing locations, dimensions, and details, including piping sizes, pipe materials, fittings, valves, basins, hydrants, and other appurtenances.

Detailed drawings of any proposed deviation from the Plans due to actual field conditions or other causes shall be included with the foregoing submittal as soon as practical. The shop drawings shall have a schedule of materials on each drawing defining all items mentioned above. All catalog and descriptive data shall note where the specific item is to be installed and a cross reference made on the Plans. The manufacturer shall certify to a minimum of three (3) years of experience specializing in manufacturing of products specified herein.

The Plans show the general arrangement of the water distribution systems. Whenever the Contractor deems it necessary to deviate from the arrangements shown, the Contractor shall submit to the Engineer in writing a request for the deviation, along with drawings showing the proposed new arrangement. Deviation shall not be made until approval of new arrangements is obtained. Wherever piping arrangements are shown or required to be modified to accommodate the equipment approved for installation, the Contractor shall prepare and submit for approval detailed shop drawings of the new arrangement. Only new and unused materials shall be installed in the work specified herein.

The Plans are not intended to show every fitting, offset, or similar item. Piping systems shall include all unions, fittings, anchors, valves, gaskets, bracing, or other appurtenances necessary for the proper installation of the water distribution systems, but shall include not less than that shown in the Plans.

All water main pipe and appurtenances shall be carefully examined for defects and no piece shall be laid which is known to be defective. If any defective piece should be discovered after having been laid, it shall be removed and replaced with a sound piece, in a satisfactory manner, by the Contractor at no additional cost to the City. All items shall be thoroughly cleaned before they are placed, shall be kept clean until they are accepted in the completed work, and when laid shall conform accurately to the lines and elevations shown on the Plans, or as specified.

Watermain Installation

Water in the trench shall be removed during pipe laying and jointing operations. Provisions shall be made to prevent floating of the pipe. Trench water shall not be allowed to enter the pipe at any time.

Adequate provisions shall be made for safely storing and protecting all water pipe prior to the actual installation in the trench. Care shall be taken to prevent damage to the pipe castings, both inside and out. Provisions shall be made to keep the inside of the pipe clean throughout its storage period and to keep mud and/or debris from being deposited therein.

All pipe and fittings must be cleaned and swabbed with a chlorine solution of at least 50 mg/L. A City of St. Charles representative must test this solution. Backfill work shall be performed in accordance of with applicable portions of Section 208 of the "Standard Specifications for Road and Bridge Construction" latest addition, and City of St. Charles trench backfill specifications.

Proper equipment shall be used for the safe handling, conveying, and laying of the pipe. All pipes shall be carefully lowered into the trench, piece by piece, by means of suitable tools or equipment, in such a manner as to prevent damage to water main materials and protective coatings and linings. Under no circumstances shall water main material be dropped or dumped into the trench.

The pipe shall be inspected for defects. All lumps, blisters, and excess coal tar coating shall be removed from the ends of each pipe and the inside of the bell.

When connecting joints, all portions of the joining materials and the socket and spigot ends of the joining pipe shall be wiped clean of all foreign materials. The actual assembly of the joint shall be in accordance with the manufacturer's installation instructions. During the construction and until joining operations are complete, the open ends of all pipes shall be at all times protected and sealed with temporary water tight plugs. Unless otherwise specified or as shown separately on the plans, all water main shall be laid with a minimum depth of 5'-0" as measured from the established grade shown on the drawings to the top of the pipe. No additional compensation will be provided for sections of pipe that have a depth of bury greater than 5'-0".

The entire section of the pipe shall be pushed forward to seat the spigot end into the bell. After the section of pipe is inserted into the bell (when joining pipe to mechanical joint fittings) the gasket shall then be pressed into place within the bell, being careful to have the gasket evenly located around the entire joint.

If necessary, bell holes of sufficient depth shall be provided across the bottom of the trench to accommodate the bell of the pipe providing sufficient room for joint making, and to ensure uniform bearing for the pipe.

Backfill

Below roadway sections, Watermain trench shall be backfilled with CA-7 except within the pavement cross-section area which shall use CA-6. Below grass and other permeable areas, Watermain trench shall be backfilled with CA-7. Backfill shall be to the existing grade and provide for a safe and drivable surface at the end of each working day.

Insulation

Where site constraints result in less than 5'-6" of cover (either to the top of the watermain, or to the underside of the watermain when crossing over culverts and other such openings below) then the watermain shall be installed with insulation on 3 or 4 sides (depending on cover condition above and below the watermain) using a box method as detailed in plans. The insulation material and backfill material inside and outside of the insulation shall be per the plan details. The material and labor for insulating the watermain shall be incidental to the watermain pay item herein.

Braced and Sheeted Trenches

Whenever necessary to prevent caving, excavations in sand, gravel, sandy soil or other unstable materials shall be adequately sheeted and braced. Provide and maintain sheeting, shoring, and bracing necessary for protection of the Work, adjacent property, and for the safety of personnel. The trench shall be so braced and drained that workmen may work therein safely and efficiently. The Contractor shall note that excavations shall conform to the latest OSHA requirements for excavations.

Where sheeting and bracing are used, the trench width shall be increased accordingly. Trench sheeting shall remain in place until the pipe has been laid, tested for defects, and repaired if necessary, and the backfill around it compacted to a depth of two feet over the top of the pipe.

Remove temporary sheeting and bracing after backfilling to an elevation which will prohibit caving. Fill voids left by the withdrawal of sheeting with compacted sand. No extra payment will be made for the supports left in place without the direction of the Engineer.

The Engineer may direct that supports in trenches be cut off at any specific elevation to protect adjacent facilities or property. Do not leave supports within 4 feet of the ground or pavement surface in place without the permission of the Engineer.

Over Excavation Backfill Requirement: The Contractor shall over excavate unsuitable soils found at or below the bottom of the trench to meet firm subsoil or as determined by the Engineer. In cases where the trench excavation is carried beyond or below the lines and grades

as indicated in the Plans or given by the Engineer, the Contractor shall, at no additional cost, backfill all such excavated space with CA-1 granular material in layers not to exceed eight (8) inches in thickness and compact each layer solidly in place. The backfill material shall then be compacted to a minimum of 95% Standard Proctor density or that necessary to prevent settlement. Compaction of granular materials within three feet of the walls of a structure shall be accomplished by the use of hand operated compaction equipment.

Pipe Restraining Systems

At all dead ends or where a fittings create alignment changes greater than 11 degrees, concrete thrust blocks or restrained joint pipe and/or devices shall be installed as indicated on the Plans. This work shall be considered incidental to the water main work.

A. Provide protection from movement of water main piping, plugs, caps, tees, valves, hydrants, and bends greater than 11 degrees.
    1. Provide restrained joint fittings and concrete thrust blocks where shown on the Plans and where connections are made to existing water mains. All mechanical joint fittings must be restrained joint type.
B. Concrete thrust blocks:
    1. Provide precast concrete thrust blocking with a compressive strength of 3,000 psi in 28 days.
    2. Locate thrust blocking between solid ground and the fitting to be anchored.
    3. Unless otherwise shown or directed by the Engineer, place the base and thrust bearing sides of thrust blocking directly against undisturbed earth.
    4. Sides of thrust blocking not subject to thrust may be placed against forms.
    5. Place thrust blocking so the fitting joints will be accessible for repair.
C. Restrained type pipe and fittings:
    1. Provide restrained joint pipe to distance indicated on the Plans, or not less than a minimum of three standard pipe lengths on each side of a bend or fitting to be restrained.

Temporary Caps and Plugs

Plugs shall be inserted into the joints of all dead end pipes, valves, tees or crosses. No ends shall be left open during construction activities. This work shall be considered incidental to the water main work requiring the plug or cap.

Abandonment of Existing Water Mains: Abandon water mains indicated on the Plans as "to be abandoned" only after all requirements for testing and disinfection have been satisfied.

A. Provide ductile iron plugs, caps, or other necessary fittings, and thrust blocking, on ends of portions of existing water mains to remain in service.

Cut and Cap of Existing Water Mains: Cut water mains where indicated on the plans shall be coordinated with the owner for isolation of main and temporary shut off at adjacent valve. Provide ductile iron cap and concrete thrust block at cut end of water main. Complete testing and disinfection in conjunction with adjacent watermain improvements.

Wrapping of Water Main

Install all ductile iron water main, fittings, and appurtenances in accordance with pipe manufacturer's instructions and in compliance with AWWA C600.

A. Protect all pipe, fittings, fire hydrants, auxiliary valve boxes, buried valves, valve boxes, and corporation stops by loose wrapping with polyethylene sheeting or tubing.
   1. Place polyethylene sheet around the entire circumference of the pipe, tie or tape sheet securely to prevent displacement during backfilling.
   2. Wrap copper service lines to a point 3 feet from center of water main.
   3. Wrap around any water main pipe to be installed inside of casing pipe.
B. Install conductivity through joints by use of conductivity wedges or copper cable and taps.
   1. Use two (2) wedges per joint for pipes 12 inches or smaller, and four (4) wedges per joint for pipe sizes larger than 12 inches.
   2. Use number of copper cable connectors per joint as recommended by the pipe manufacturer.

Sequence of Operations and Watermain Shutdowns

The Contractor shall provide a detailed schedule of operations at the pre-construction meeting. The schedule of operation shall include dates for all anticipated shut downs of the City's watermain. All watermain shutdowns must be requested to the Engineer a minimum of 72 hours in advance. Failure to provide 72 hours advance notice may result in a delay to the Contractor's schedule, with no additional compensation for delay.

All shut downs of the water system shall be performed by the City of St. Charles' Water Division.

Protection of Water Mains and Water Service Lines

A. Normal Conditions

Water mains shall be laid at least 10 feet horizontally from any sanitary sewer, storm sewer or sewer manholes. The Distance shall be measured edge-to-edge. When not possible, water mains

shall be protected in conformance with IEPA requirements.

B. Unusual Conditions

When local conditions prevent a horizontal separation of 10 feet, a water main may be laid closer to a storm or sanitary sewer provided that:

1. The bottom of the water main is at least 18 inches above the top of the sewer.
2. Where this vertical separation cannot be obtained, the sewer shall be constructed of materials and with joints that are equivalent to water main standards of construction for 10 feet, as measured perpendicular, on either side of the water main.

C. Crossings – Water Mains, Sewers and Utilities

1. Normal Conditions: Water main crossing storm or sanitary services or sewers shall be laid to provide a separation of at least 18 inches between the bottom of the water main and the top of the sewer.
2. Unusual Conditions: When local conditions prevent a vertical separation as Normal Conditions, the following construction shall be used.

    a. Sewers passing over or under water mains should be constructed of the materials described for parallel installation where vertical separation cannot be obtained.
    b. Water mains passing under sewer shall, in addition, be protected by providing:
        i. A vertical separation of at least 18 inches between the bottom of the sewer and the top of the water main.
        ii. Adequate structural support for the sewers to prevent excessive deflection of joints and settling on and breaking the water mains,

3. When local conditions prevent adequate frost protection to the top or bottom of the water main, a perimeter of insulation per the plan details shall be installed using a box method as detailed in the plans for the limits of inadequate frost protection plus an additional 6 feet each side of crossing.

4. Water Main Crossing Utilities
   Wherever the water main crosses existing utilities, including sewer, telephone, electric, gas, etc., the Contractor shall be responsible for determining the existing depth of said utilities prior to installation and at no additional cost. No additional compensation will be provided if utility crossings require the watermain to be installed at a depth greater than that shown on the plans.

Pressure Testing & Disinfecting Watermains

Pressure testing of the water mains shall be in accordance with Section 41-2.14 of the "Standard Specifications for Water and Sewer Main Construction in Illinois", and as required by the Section. All water mains shall be disinfected and tested according to the requirements of the "Standards for Disinfecting Water Mains," AWWA C601, and as required by this Section. This work and as directed on the plans or as directed by the City will not be measured or paid for separately but shall be included in the cost of the water main and no additional compensation will be allowed.

When a section of pipe and appurtenances have been completed, the Contractor shall furnish proper appliances and facilities for testing and flushing the same, without injury to the work or surrounding territory. Notify the Engineer at least 48 hours prior to the time of the requested official tests. Contractor shall test by filling the pipe with clean water under a minimum hydrostatic pressure of one hundred fifty (150) pounds per square inch for two (2) hours. All testing shall be in conformance with Section 41 of the Standard Specifications for Water and Sewer Main Construction in Illinois.

If makeup water is less than the following allowable amounts, the test is complete with a passing result (Linear footage X GPH X 2 Hours)/1000):

Pipe Size	3”	4”	6”	8”	10”	12”	16”
GPH	0.28	0.37	0.55	0.74	0.92	1.10	1.47

If at any time after the test begins a drop of 5 psi or more is recorded, the test is complete with a failing result regardless of the allowable makeup water.

Any cracked or defective pipes, fittings, valves, or hydrants discovered in consequence of the pressure test shall be removed and replaced. If the pipeline fails to meet the requirements of the hydrostatic testing, the Contractor shall find the cause for the failure and make repairs or replacement, and repeat the test until results are satisfactory. Any replaced items or re-testing shall be at no additional cost to the City.

After completion of the pressure test, the Contractor shall conduct a leakage test to determine the quantity of water lost by leakage under the specified test pressure.

Leakage Testing: The Contractor shall perform a metered leakage test after the pressure testing has been satisfactory completed.

i. Duration of each leakage test shall be a minimum of 24 hours.
ii. During the test, subject water lines to the normal operating water pressure of the City's water system.
iii. Install water meter approved by the Engineer. Provide double check valve assembly (DCA) for backflow protection between water meter and existing water main.
iv. Maximum allowable leakage shall not exceed the number of gallons per hour (gph) as determined by the following formula:

$L = SD(P^{0.5})/148,000$
Where:
L = Allowable leakage, in gallons per hour
S = Length of the pipe section tested, in feet
D = Diameter of water main, in inches
P = Average test pressure, in pounds per square inch (gage)

Should any test of pipe disclose leakage greater than the maximum allowable amount, locate and repair the defective joint or joints and then repeat the 24-hour metered leakage test until the leakage is within the specified allowance, and at no additional cost to the Owner.

Any defects, cracks or leakage that may develop or may be discovered, either in the joints or in the body of the castings, shall be promptly repaired by the Contractor at his/her own expense and the section shall be retested.

When pressure and leak tests are completed and prior to being placed into service, the water main pipe and appurtenances shall be disinfected by a method of chlorination approved by the Engineer and following the requirements of the above noted sections and the requirements of the Illinois EPA. **Gas or liquid chlorination is required.**

Procedures for disinfecting water mains shall be in accordance with AWWA C651. Satisfactory disinfection shall be demonstrated in accordance with the requirements of 35 Illinois Administrative Code 652.203

Measurement and Payment

This work as described above, shall be paid for at the Contract Unit price per lineal foot for WATER MAIN REMOVE & REPLACE 8" DUCTILE IRON WATERMAIN, CLASS 52, WITH POLYETHYLENE ENCASEMENT, which price shall be payment in full for all materials, including removal of existing watermain where appropriate, all fittings (bends, wyes, tees, reducers, plugs, sleeves), pipe, polyethylene encasement, anode bags, thrust blocks, Mega-lugs, sawcutting, removal and disposal off-site of excavated material (including pavement) and removed water main and

appurtenances, trench and stockpile protection (fencing), bedding, trench backfill, chlorination and pressure testing, including labor, equipment and incidentals as shown on the plans and as required herein for a complete and operational watermain. Where existing watermain is to be cut and capped, the work will be paid for at the Contract Unit price per EACH for CUT AND CAP EXISTING WATERMAIN, which price shall be payment in full for all materials, including sawcutting, removing and disposal off-site of excavated material (including pavement) and removed watermain and appurtenances, trench and stockpile protection (fencing), bedding, trench backfill, all plugs and caps, thrust blocks, chlorination and pressure testing, including labor, equipment and incidentals as shown on the plans and as required herein for a complete and operational watermain.

PRECAST CONCRETE BOX CULVERT, 12' x 8'

This work shall be completed in conformance of the Standard Specification Section 540. In addition, this work shall include the temporary support and protection of existing buried utilities as noted in plan to remain in place and in service during construction. Plan locations are based on utility atlas information provided at the time of construction, but is not a guarantee of utility locations and number of utilities or conduits present in the field. Contractor shall be responsible for verifying all existing utilities in project area, locations, depths, limits and providing temporary supports for each buried utility undercut by culvert improvement work. It is understood that the Standard Specification for this work includes all excavation, stockpile and backfill required for the installation of the proposed box culvert(s), including all imported Porous Granular Embankment required per the Standard Specification and the areas identified for Porous Granular Embankment below and along the sides of the proposed structure in the plans. Where portions of the Standard Specification differ from this understanding, this special provision shall govern.

BOX CULVERT END SECTIONS

This work shall be completed in conformance of the Standard Specification Section 540. In addition, this work shall include the temporary support and protection of existing buried utilities as noted in plan to remain in place and in service during construction. Plan locations are based on utility atlas information provided at the time of construction, but is not a guarantee of utility locations and number of utilities or conduits present in the field. Contractor shall be responsible for verifying all existing utilities in project area, locations, depths, limits and providing temporary supports for each buried utility undercut by culvert improvement work. It is understood that the Standard Specification for this work includes all excavation, stockpile and backfill required for the installation of the proposed end sections including all imported Porous Granular Embankment required per the Standard Specification and the areas identified for Porous Granular Embankment below and along the sides of the proposed structure in the plans. Where portions of the Standard Specification differ from this understanding, this special provision shall govern.

REPAIR OF EXISTING CMP INVERT VOIDS

This work shall consist of making repairs to existing CMP culvert inverts as indicated in the plans for Project Location #1 at the 7th Avenue Culverts. This same specification also applies to the alternative

bid for Project Location #2 at the John Deutsch Culverts if that alternative bid is awarded. The work includes filling cavities outside of the existing culvert, partial removal of damaged sections of existing culvert inverts and installing a reinforced concrete invert for the limits indicated in the plans, or by the City of St. Charles or the Engineer. This work shall include all labor and material required for preparation work, cleaning, maintenance, installation and finish work required to complete the repairs unless otherwise noted in the plans and/or these specifications.

The Contractor shall submit a work plan 15 days prior to the start of work, detailing the methods for cleaning and preparing the existing culvert (including temporary bracing), the process to fill invert cavities, construct the reinforced concrete invert and the grout injection process for filling voids behind the culvert walls and the proposed concrete mix and grout mix, cellular concrete or controlled low strength material to be used in each step of the process, and a list of corrective actions to address common installation issues that may arise. If a problem is discovered, it shall be brought to the attention of the Engineer prior to ordering materials.

The filling of obvious cavities outside of the existing culvert shall be done per the applicable portions of Section 543.03 of the Standard Specification (note that no liner pipe is proposed). Filling of the cavities may be accomplished with the use of either the Grout Mix proposed for use with the Grout Injection of Voids Behind the Culvert Walls, Cellular Concrete, or Controlled Low Strength Material.

Prior to filling the cavities, damaged portions of the existing culvert invert shall be removed per the limits shown in the plans, or as directed by the Engineer or the City of St. Charles. The design intent is to remove only portions of the existing Culvert Invert where over 50% of section loss has occurred, with cut lines made at locations of sound material to the left and right of the invert centerline at the base of the culvert. Cut lines are not to extend above the knuckle radius at the lower corners of the culvert arch shape unless otherwise approved by the Engineer. Prior to removing existing damaged sections of invert along the culvert – the Contractor shall install temporary bracing to the interior of the culvert to prevent buckling, deflection, or loss of shape of the Culvert opening. Bracing shall remain in place until reinforced concrete invert has been installed and adequately cured. Cavities shall be filled up to the base of the proposed reinforced concrete invert. The reinforced concrete invert shall be installed for the full width of the missing or removed CMP invert. Where the existing sidewall of the CMP culvert is partially missing, and if the concrete invert cannot be formed to replace the missing portion of the sidewall, the Contractor shall install a concrete bulkhead that does not reduce the opening width of the culvert as needed.

The finished concrete invert shall not reduce the opening size of the existing culvert measured between interior corrugations in any direction. Any locations with excessive concrete thickness that exceeds the height of the interior corrugations, or reduces the opening of the existing culvert will be subject to removal and replacement to the satisfaction of the Engineer and/or the City of St. Charles at the Contractor's expense.

This work will measured and paid for at the contract unit price per SQUARE FOOT for REPAIR OF EXISTING CMP INVERT VOIDS. If similar repairs are awarded for the alternative bid at Project Location #2 for the existing John Deutsch Culverts, this work at that location will be measured and paid

for at the contract unit price per SQUARE FOOT for REPAIR OF EXISTING CMP INVERT VOIDS with the exception that no use of grout ports in the sidewall of the John Deutsch Culverts is anticipated.

GROUT INJECTION OF VOIDS BEHIND CULVERT WALLS

This work shall consist of all material and labor necessary for the preparation and installation of grout injection to fill voids behind culvert walls for the length of invert repairs identified in the plans for the 7th Avenue Culverts at Project Location #1.

The Contractor's work plan (as part of the requirements for the REPAIR OF EXISTING CMP INVERT VOIDS) shall include the process for grout injection and filling of voids behind the culvert walls. The Contractor's work plan shall include his process for identifying void locations and appropriate grout port locations, grout or cellular concrete mix and pumping or injection method and a process to verify void spaces behind the culvert walls are filled. If a problem is discovered, it shall be brought to the attention of the Engineer prior to ordering materials. Temporary bracing and/or other methods required to protect against floating or deformation of the existing culvert during the grout pumping shall be identified in the Contractor's work plan.

The grout injection shall be performed in conformance with the applicable portions of Section 543 of the Standard Specification (note that no liner pipe is proposed). A grout mix or cellular concrete mix may be submitted for use by the Contractor. Alternative material for filling the voids behind the walls of the existing CMP culverts can be submitted by the Contractor for review by the City of St. Charles and the Engineer, but deference will be toward the use of a grout mix or cellular concrete mix listed in the IDOT Standard Specification unless documentation can be provided showing an alternative product having 10 years, minimum, of successful use on similar applications (CMP culvert voids under public roadways) and also having been added to the preapproved material lists by at least three State Departments of Transportation for use in similar applications.

Prior to performing the grout injection, the Contractor shall have completed culvert invert repairs, preparation work, cleaning of the culverts and bracing of the culverts as needed to prepare the culverts for the grout injection process for the limits of the culverts identified in the plans. The length of culvert identified in the plans for invert repairs is the same length where grout injection to fill voids behind the culvert walls is required.

This work shall include both existing culverts at the 7th Avenue location noted in the project plans for Project Location #1. This work will measured and paid for at the contract unit price per LUMP SUM for GROUT INJECTION OF VOIDS BEHIND CULVERT WALLS.

DEBRIS REMOVAL FROM CULVERTS

This work shall consist of all labor and material required to remove and properly dispose of existing debris, unsuitable material and damaged sections of existing culvert inverts from the interior of the existing culverts and any cleaning of culverts required for proper completions of repairs to existing

culvert inverts. This work shall include both existing culverts at the 7th Avenue location noted in the project plans for Project Location #1. This work will be measured and paid for at the contract unit price per LUMP SUM of DEBRIS REMOVAL FROM CULVERTS. If similar repairs are awarded for the alternative bid at Project Location #2 for the existing John Deutsch Culverts, this work at that location will be measured and paid for separately as its own LUMP SUM item for the two existing CMP culverts at the John Deutsch location.

STORM SEWER REMOVAL, D.I., 12"

This work shall be completed in conformance of the Standard Specification Section 551, except that the removal shall consists of cutting off damaged and unusable portion of the existing 12" ductile iron pipe to a location that is sound and adequate for making a mechanical connection to as indicated in the plans. The removal length in plan is an estimate. The Contractor shall identify and mark the location of sound pipe that the Contractor proposes to cut back to and have the City of St. Charles review and approve the removal length prior to making the cut. The final removal length and proposed installation of replacement pipe shall be reviewed with the City of St. Charles and the Engineer for final approval prior to removal and/or installation. This work shall include the removal and proper disposal of the pipe and unsuitable material encountered in excavation. This work will be measured and paid for at the contract unit price per FOOT of STORM SEWER REMOVAL, D.I., 12".

STORM SEWER, PVC 12"

This work shall be completed in conformance of the Standard Specification Section 550. In addition, this work shall include the ductile iron bends, mechanical connections, thrust blocks, excavation and backfill as indicated on the plans. This work will be measured and paid for at the contract unit price per FOOT of STORM SEWER, PVC 12".

LANDSCAPE WALL

This work shall be completed in conformance of the Standard Specification Section 522.12 for Segmental Concrete Block Retaining Wall, and all applicable portions of Section 522 with the following exceptions: Color and texture shall be coordinated with the Owner for final selection and approval. Any drainage required by the wall supplier shall be included in the unit price for LANDSCAPE WALL. All excavation, materials, backfill and labor shall be included in the unit price per SQUARE FOOT of LANDSCAPE WALL.

TEMPORARY FLOW BYPASS

The stream within the work area must be isolated to prevent potential sources of sediment from entering the stream. This work may be completed by constructing a temporary cofferdam with a bypass pumping system may be utilized to allow for the required work to be completed. This TEMPORARY FLOW BYPASS must be in place when work is being completed within the channel of 7th Ave. Creek and particularly when work is being completed below the 2-year flood elevation noted in plan. The

TEMPORARY FLOW BYPASS will no longer be necessary once the project has been stabilized.

When possible, the Contractor shall attempt to schedule work in the waterway so as to take place during low flow or no-flow conditions. 7th Ave. Creek frequently has little flow during the average summer months with no flow during driest times of the year. When flowing water is present in the channel, or when rain is forecast, the Contractor shall install cofferdams according to the material requirements and limits described in the plans and in this specification.

Water shall be isolated from the in-stream work area using a cofferdam constructed of non-erodible materials (steel sheets, aqua barriers, rip rap and geotextile fabric, etc.). Acceptable practices include, but are not limited to: pre-fabricated rigid cofferdams, sheet piling, inflatable bladders, sandbags and fabric-lined basins. Under no circumstances are earthen cofferdams or other practices that would result in a release of sediment into waters of the U.S. acceptable.

Work may NOT be performed in the water, except for the placement of the materials necessary for the construction of the cofferdam. The cofferdam must be constructed from the upland area and no equipment may enter the water at any time. If the installation of the cofferdam cannot be completed from shore and access is needed to reach the area to be coffered, other measures, such as the construction of a causeway, will be necessary to ensure that equipment does not enter the water. Once the cofferdam is in place and the isolated area is dewatered, equipment may enter the coffered area to perform the required work.

If bypass pumping is deemed necessary by the Contractor or the Engineer, the intake hose shall be placed on a stable surface or floated to prevent sediment from entering the hose. The bypass discharge shall be placed on a non-erodible, energy dissipating surface prior to rejoining the stream flow and shall not cause erosion. Filtering of bypass water is not necessary unless the bypass water has become sediment-laden as a result of the current construction activities.

During dewatering of the coffered area, all water must be filtered to remove sediment. Possible options for sediment removal include baffle systems, anionic polymers, dewatering bags, or other appropriate methods. Water shall have sediment removed prior to being re-introduced to the downstream waterway. A stabilized conveyance from the dewatering device to the waterway must be identified. Discharge water is considered clean if it does not result in a visually identifiable degradation of water clarity. Please see the construction plans for a detail of an example of how to layout a temporary flow bypass.

Cofferdams may not be constructed to be higher than the 2-year flood depth at any given location unless the cofferdams are constructed parallel to flow for isolated foundation construction and do not obstruct the existing channel flow. The 2-year flood flows and elevations at the upstream end of the culvert(s) has been provided on the plans. For cofferdams constructed and used for bypass flow, any flows in excess of the 2-year event must be allowed to overtop the cofferdams and flow its natural course. Special attention to weather forecast shall be paid by the contractor to ensure that work is being completed during appropriate times and that the channel is able to accept forecast rainfall events. Repairing any damage caused by flood events that occur during construction will not be grounds for extra compensation.

This work will measured and paid for at the contract unit price per LUMP SUM for TEMPORARY FLOW BYPASS. This work will be paid for once, even if performed on multiple occasions during the construction period for each awarded project location or alternative bid unless noted otherwise in the plans or these specifications. This work will include all materials, equipment and labor necessary for installation, maintenance, and removal of materials and equipment.

SEDIMENT FILTER BAGS

Filter Bags may be used to filter water pumped from disturbed areas prior to discharging back into the stream. They may also be used to filter water pumped from the sediment storage areas of sediment basins.

Materials. Filter bags shall be made from non-woven geotextile material sewn with high strength, double stitched "J" type seams. They shall be capable of trapping particles larger than 150 microns.

Construction Requirements. Filter bags shall be installed according to the details shown on in Figure S1 shown on the Dewatering Systems detail sheet.

A suitable means of accessing the bag with machinery required for disposal purposes must be provided. Filter bags shall be replaced when they become ½ full. Spare bags shall be kept available for replacement of those that have failed or are filled.

Bags shall be located in well-vegetated (grassy) areas, and discharges onto stable, erosion resistant areas. Where this is not possible, a geotextile lined flow path shall be provided. Bags shall not be placed on slopes greater than 5%. If necessary, the Contractor shall install a temporary stone work pad using rip rap to provide a stable erosion resistant discharge area with no separate measurement or payment made to establish the erosion resistant area.

Pumping rates vary depending on the size of the filter bag, and the type and amount of sediment discharged to the bag. The pumping rate shall be no greater than 750 gpm or ½ the maximum specified by the manufacturer, whichever is less. The maximum pumping rate shall be approved by the Engineer.

Pump intakes shall be floating and screened.
The pump discharge hose shall be inserted into the bags in the manner specified by the manufacturer and securely clamped.

Filter bags shall be inspected daily. If any problem is detected, pumping shall cease immediately and not resume until the problem is corrected to the satisfaction of the Engineer. No payment shall be made for steps required to address inadequate filtering of the discharge water, including, if needed, the addition of FLOC tubes or other Best Management Practice required by the City and/or its representative(s) to address inadequate filtration.

Basis of Payment. Sediment filter bags will not be paid for separately but shall be included in the cost of TEMPORARY FLOW BYPASS regardless of the number of sediment filter bags required and/or the number of times a flow bypass must be installed.

EARTH EXCAVATION

This work includes all earth excavation, stockpile and backfill of excavated material on site and all associated material and labor required to maintain stockpile(s) and complete earthwork indicated on the plans for the installation of the proposed culvert(s), end sections, and site grading necessary to tie final proposed grades into existing grades. All excavation and backfill as described herein shall be included in the unit price for the applicable structural pay item(s) which shall be either PRECAST CONCRETE BOX CULVERT or BOX CULVERT END SECTIONS, depending on which item is most applicable to the excavation and backfill. No separate measurement for structural excavation, earth excavation, backfill or stockpiling will be made for payment. If proposed grades cannot be achieved with on-site material, then Porous Granular Embankment shall be furnished by the Contractor to supplement on-site backfill material to achieve final proposed grades. POROUS GRANULAR EMBANKMENT, if needed and if in excess of plan quantities for undercut of the proposed box culvert, shall be measured and paid for per Section 109.03 of the standard specification.

REMOVAL & DISPOSAL OF UNSUITABLE MATERIAL

Description: This work consists of the removal and disposal of unsuitable material prior to the placement of the proposed box culvert(s) if undercuts in excess of 6" included in the Standard Specification pay item for Precast Concrete Box Culvert, unless otherwise noted on the plans. Excavation and disposal of unsuitable material shall be performed in accordance with applicable articles of Section 202 of the standard specifications.

Only excavated materials that cannot be reused on the site shall be included in the quantities for removal and disposal of unsuitable material. The subgrade shall be prepared in accordance with Article 301.03 before removal of any unstable material.

Basis of Payment: This work will be paid for at the contract unit price per CUBIC YARD for REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL.

POROUS GRANULAR EMBANKMENT

Description: This work consists of the furnishing additional fill material needed for additional undercuts of the proposed box culvert(s) if undercuts are in excess of the 6" included in the Standard Specification pay item for Precast Concrete Box Culvert. Where Porous Granular Embankment is required for backfill along base of footing, culvert bottom slab, and back of vertical walls of structures – those quantities shall be included in the unit price of the applicable structure.

Basis of Payment: This work will be paid for at the contract unit price per CUBIC YARD for POROUS GRANULAR EMBANKMENT, and shall exclude locations where such material is to be included in the unit price for the applicable structure.

TOPSOIL EXCAVATION AND PLACEMENT

Description: This work shall be completed in accordance with Section 211 of the Standard Specifications except as specified herein, as shown on the plans, and as directed by the Owner's Representative.

Construction Requirements: Top soil excavation shall be limited to the areas of grading improvements within the construction limits rather than the right-of-way limits only. This work shall be performed in accordance with Articles 211.04 and 211.05 of the Standard Specifications except as modified herein.

Place topsoil and complete finish grading to meet grades as shown on the plans. Place topsoil to a depth of [4] inches in all seed and sod areas. Amend topsoil in all planting bed areas with soil conditioner to meet the requirements specified herein.

Method of Measurement: The contract unit price shall include stockpile of top soil strip from the project limits and placement to a minimum depth of 4 inches in all seed and sod areas to meet finish grades, including all materials, labor, or equipment required to complete this work.
This work shall include soil conditioner and amending topsoil for all planting beds including all materials, labor, or equipment required to complete this work.

Basis of Payment: This work shall be paid for at the contract unit price per SQUARE YARD for TOPSOIL EXCAVATION AND PLACEMENT, 4" and no additional compensation will be allowed. If existing top soil stockpile on site from excavation is not sufficient to place 4" of topsoil in areas to be restored with seed, sod or plantings, additional topsoil shall be furnished and placed by the Contractor and paid for at the contract unit price per square yard for TOPSOIL FURNISH AND PLACE, 4".

SEEDING

All soil preparation, seeding methods and seed mixtures shall be per the Sections 211 & 250 of the Standard Specifications for Road and Bridge Construction except as modified herein. The plans identify the different seed classes and or sod to be used at different locations within the project site.

This work shall also consist of Supplemental Watering in the areas indicated on the drawings or as directed by the Engineer, and a 3-year maintenance plan utilizing trained staff employed or subcontracted to the Contractor to ensure proper maintenance and management of seeding, plantings and erosion control until proper and full establishment of vegetation in areas of restoration.

The preparation of the ground surface shall include the removal of the existing sod/stone/spoils and excavation, if necessary, of the existing ground to depth, which will permit placement of the required 4 inches of topsoil.

All disturbed/damaged landscape areas, including existing areas outside the limits of construction that are damaged by the Contractor or its representatives shall be restored at the Contractor's expense.

Contractor shall be mindful and responsible of restoration limits and shall take all precautions necessary to minimize disturbances to Right-Of-Way and properties. Where grading (filling, cutting or shaping), is required, it shall be considered included in the cost of the associated pay item.

Restoration in the areas defined in plan for topsoil placement and seeding will be paid for at the contract unit price per SQUARE YARD for SEEDING (using the specified IDOT class seeding) and TOP SOIL EXCAVATION AND PLACEMENT which includes all materials, equipment and labor necessary for installation, maintain, and removal of materials and equipment. The 3-year maintenance plan, and all work associated with it shall be paid for per the Project Special Provision for LANDSCAPE MAINTENANCE.

SODDING, SALT TOLERANT

All soil preparation, seeding methods and seed mixtures shall be per the Sections 211 & 252 of the Standard Specifications for Road and Bridge Construction except as modified herein. The plans identify the locations where salt tolerant sod is to be installed within the project site.

This work shall also consist of Supplemental Watering in the areas indicated on the drawings or as directed by the Engineer, and a 3-year maintenance plan utilizing trained staff employed or subcontracted to the Contractor to ensure proper maintenance and management of sod, plantings and erosion control until proper and full establishment of vegetation in areas of restoration.

Sod shall meet the requirements of Article 1081.03. Sod within the John Deutsch Drive and/or 7th Avenue Right-Of-Way shall be Salt Tolerant. All sod shall be approved by the Engineer prior to ordering material. Where plans do not specify a width for sodding and construction activity disturbs adjacent soils, a minimum width of 5' from edge of pavement shall control.

The preparation of the ground surface shall include the removal of the existing sod/stone/spoils and excavation, if necessary, of the existing ground to depth, which will permit placement of the required 4 inches of topsoil.

Restoration limits to be determined by the Engineer. Minimum restoration width along sidewalks, curbs and driveways, where other construction improvements do not disturb the adjacent soil, shall be one foot.

All disturbed/damaged landscape areas, including existing areas outside the limits of construction that are damaged by the Contractor or its representatives shall be restored at the Contractor's expense. Contractor shall be mindful and responsible of restoration limits and shall take all precautions necessary to minimize disturbances to Right-Of-Way and properties. Where grading (filling, cutting or shaping), is required, it shall be considered included in the cost of the associated pay item.

Restoration in the areas defined in plan for sodding will be paid for at the contract unit price per SQUARE YARD for SODDING, SALT TOLERANT and TOP SOIL EXCAVATION AND PLACEMENT which includes all materials, equipment and labor necessary for installation, maintain, and removal of materials and equipment. The 3-year maintenance plan, and all work associated with it shall be paid for per the Project Special Provision for LANDSCAPE MAINTENANCE.

LANDSCAPE MAINTENANCE

Description: This work will consist of providing landscape maintenance for the John Deutsch Drive Culvert Replacement at Project Location #1 for the duration of three (3) years. The Contractor will properly care for the maintenance area including supplemental watering, weed control, conservation mowing, supplemental seeding or sodding, topsoil furnish and placement, placement of erosion control blanket and/or other work which is necessary to successfully achieve the outlined performance standards. The Contractor will perform a minimum of two field visits during the growing season per year or more frequently if necessary or as directed by the City. The 3-year landscape maintenance period will begin following the guarantee period and final acceptance from the Owner.

Quality Assurance: The work of this section will be performed by an experienced Contractor who has a minimum of five years documented experience with the maintenance of similar native areas. All herbicide application will be performed by persons currently licensed in the State of Illinois for Herbicide Application.

Performance Standards: The following performance standards are considered minimum indicators for successful landscape maintenance of the project site;

- Stabilized slopes rills and gullies filled with topsoil, graded and stabilized with suitable plant material and erosion control blanket.
- 95% vegetative coverage (measured by aerial coverage) within the maintenance area.
- 75% vegetative coverage (measured by aerial coverage) of native, non-invasive species.
- No area greater than 0.5 square meters devoid of vegetation. This standard does not apply to emergent and aquatic communities within the creek.
- None of the three most dominant species within the maintenance area may be non-native, invasive or weedy species, including by not limited to Reed Canary Grass (Phalaris arundinacea), Cattail (Typha spp.), Common Reed (Phragmites australis), Kentucky Bluegrass (Poa pratensis), Canada Bluegrass (Poa compressa), Purple Loosestrife (Ambrosia spp.), Teasel (Dipsacus spp.), Canada Thistle (Cirsium arvense), Sweet Clover (Melilotus spp.), Sandbar Willow (Salix interior), Buckthorn (Rhamnus spp.) and Box Elder (Acer negundo).
- The Contractor shall provide a written report to the City of St. Charles at the end of each year of Landscape Maintenance performed summarizing the landscape maintenance activities performed for the year.

Basis of Payment: This work will be paid for at the contract unit price per lump sum for LANDSCAPE MAINTENANCE – YEAR 1, LANDSCAPE MAINTENANCE – YEAR 2, LANDSCAPE MAINTENANCE – YEAR 3 and will include all necessary maintenance activities required to successfully achieve the required performance standards by the end of the 3-year maintenance period. For each pay item year of LANDSCAPE MAINTENENACE, following the first site visit 50% of the pay item will be paid and following the final site visit the remaining 50% of the pay item will be paid.

The following activities may be utilized by the Contractor during the 3-year landscape maintenance period to successfully achieve the performance standards outlined in the Project Special Provision for LANDSCAPE MAINTENANCE. These activities include but are not limited to, CONSERVATION

MOWING, WEED CONTROL, SUPPLEMENTAL WATERING, SUPPEMENTAL SEEDING OR SODDING, and TOPSOIL FURNISH AND PLACE. These items will not be paid separately and will be considered included in the cost for LANDSCAPE MAINTENANCE of the year specified.

CONSERVATION MOWING - LANDSCAPE MAINTENANCE

Description: This work will consist of mowing existing vegetation prior to seeding activities during the 3-year landscape maintenance period. Areas to be seeded with Class 3 will be mowed or trimmed one or more times to achieve a height not more than 6 inches, unless otherwise directed by an Experienced Contractor familiar with the care and growth of Class 3 seed mixture on slopes of 5:1 or steeper and also approved by the City. Areas to be seeded with Class 1A (or Sodding, Salt Tolerant) and/or Class 4 will be mowed to a height not to exceed 3 inches. This work will include all mowing, trimming, materials, equipment, labor, removal, disposal and incidentals required to complete the work as specified herein.

General Requirements: The Contractor will keep all mowing equipment sharp and properly equipped for operation in a native area. The equipment used will be capable of completely severing all growth at the cutting height and distributing it evenly over the mowed area. Special equipment may be required on steep slopes, in narrow areas, and for trimming around posts, poles, fences, trees, shrubs, feedings, etc. The cut material will not be windrowed or left in a lumpy or bunched condition. Additional mowing or trimming may be required to obtain the height specified or to disperse the mowed material and allow penetration of the seed.

Debris encountered during the mowing operations which hampers the operation will be removed and disposed of according to Article 202.03. All trimmings, windrowed material, and debris must be removed to the satisfaction of the City. Damage to the ground surface, such as ruts or wheel tracks more than 2 inches in depth, or other plantings caused by the mowing or trimming operation will be repaired and the Contractor's expense.

Basis of Payment: This work will not be measured for payment. The cost associated with performing conservation mowing during the 3-year landscape maintenance period including removal and disposal of debris will be considered included in the cost for LANDSCAPE MAINTENANCE of the year specified.

WEED CONTROL, NON-SELECTIVE AND NON-RESIDUAL - LANDSCAPE MAINTENANCE

Description: This work will consist of the application of non-selective and non- residual herbicide on upland slopes and wetlands during the 3-year landscape maintenance period. Herbicide (Rodeo or approved equal) will be applied on upland slopes for the control of non-native weedy herbaceous species including but not limited to Clover species (*Melilotus spp. and Trifolium spp*.), Thistle (*Cirsium spp*.), Ragweed (*Ambrosia spp*.) and Queen Anne's Lace (*Daucus carota*). Aquatic-safe herbicide (Habitat or approved equal) will be applied in wetlands and areas of flowing water for the control of invasive herbaceous species including but not limited to Reed Canary Grass (*Phalaris arundinacea*), Cattail

(*Typha angustifolia and Typha x glauca*) and Common Reed (*Phragmites australis*). Weed control will be applied per manufacturer's instructions.

Quality Assurance: Weed control will be applied by a Pesticide Applicator licensed in the State of Illinois. The Contractor will provide copies of current herbicide application licenses to the City for all employees assigned to the project.

Pesticide Permit: This work will also include obtaining a General NPDES Permit for Pesticide Application Point Source Discharges from the Illinois Environmental Protection Agency (IEPA) Division of Water Pollution Control. The Contractor is responsible for securing the necessary authorizations for herbicide application. The Contractor will also be responsible for all reporting requirements contained in permits and authorizations. The Contractor will provide a copy of all permits to the City prior to commencement of weed control. The contact information for the IEPA is found below:

State of Illinois
Environmental Protection Agency
Division of Water Pollution Control
1021 North Grand Avenue
P.O. Box 19276
Springfield, IL 62794-9276

Materials:
The non-selective and non-residual herbicide (Rodeo or approved equal) will have the following formulation:

Active Ingredient:	
*Glyphosate, N- (phosphonomethyl) glycine, isopropylamine salt	53.8%
Other Ingredients (including surfactant):	46.2%
Total:	100.0%

*Contains 480 grams per liter or 4 pounds per U.S. gallon of the active ingredient Glyphosate, in the form of its isopropylamine salt. Equivalent to 356 grams per liter or 3 pounds per U.S. gallon of the acid, glyphosate.

The non-selective and non-residual herbicide (Habitat or approved equal) will have the following formulation:

Active Ingredient:	
Isopropylamline salt of Imazapyr (2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-Pyridinecarboxylic acid)*	28.7%
Other Ingredients:	71.3%
Total:	100.0%

Schedule: Spraying will not be allowed when temperatures exceed 90° F or under 60° F, when wind velocities exceed fifteen (15) miles per hour, when foliage is wet or rain is eminent, when visibility is poor or during legal holiday periods.

General Requirement: The Contractor will submit a certificate including the following, prior to starting work:

1. The chemical names of the compound and the percentage by volume of the Ingredients which must match the above specified formulation including all Material Safety Data Sheets (MSDS).
2. A statement that the material is in a solution which will form a satisfactory emulsion for use when diluted with water for normal spraying conditions.
3. A statement that the herbicide, when mixed with water, will be completely soluble and dispersible and remain in suspension with continuous agitation.
4. A statement describing the products proposed for use when the manufacturer of the herbicide or equal requires that surfactants, drift control agents, or other additives be used with the product. These tank mix additives will be used as specified by the manufacture.

All material will be brought to the spray area in the original, unopened containers supplied by the manufacturer.

Basis of Payment: This work will not be measured for payment. The cost associated with performing weed control during the 3-year landscape maintenance period including permits, water for dilution and additives required for application will be considered included in the cost for LANDSCAPE MAINTENANCE of the year specified.

WEED CONTROL, HAND REMOVAL - LANDSCAPE MAINTENANCE

Description: This work will consist of performing hand and/or manual-tool (shovel, spade, etc.) removal and disposal of invasive species during the 3-year landscape maintenance period. Hand removal will include removal of flowering heads from Purple Loosestrife (*Lythrum salicaria*) within wetland areas prior to flowers going to seed. Purple Loosestrife seed heads will be cut, baggad and removed from the specified area. This work will also include manual removal of Cattail (*Typha spp*.) within wetland areas. All debris as a result from this operation will be removed at the end of each day.

Basis of Payment: This work will not be measured for payment, the cost associated with performing weed control during the 3-year landscape maintenance period including all necessary labor, material9 and equipment will be considered included in the cost for LANDSCAPE MAINTENANCE of the year specified.

SUPPLEMENTAL WATERING - LANDSCAPE MAINTENANCE

Description: This work will include watering newly seeded areas during the 3-year landscape maintenance period. During the summer or times of extreme heat, plants will be watered on a regular basis. Damage to plant material that is a result of the Contractor's failure to water in a timely way must be repaired or replaced at the Contractor's expense. The Contractor will not be relived in any way from the responsibility of unsatisfactory plants due to the amount of watering.

Source of Water: The Contractor will notify the City of the source of water used and provide written certification that the water does not contain chemicals harmful to plant growth.

Basis of Payment: This work will not be measured for payment. The cost associated with all water, equipment, and labor as needed for supplemental watering during the 3-year landscape maintenance period will be considered included in the cost for LANDSCAPE MAINTENANCE of the year specified.

TOPSOIL FURNISH AND PLACE - LANDSCAPE MAINTENANCE

Description: It is anticipated that additional topsoil will be required for landscape maintenance operations including repairing erosion, rills and gullies. Locations for topsoil placement will be at the direction of the City. Providing and placing topsoil will be as described herein and in accordance with Sections 211 and 1081 of the Standard Specifications.

Basis of Payment: This work will not be measured for payment. The cost associated with topsoil furnish and place during the 3-year landscape maintenance period will be considered included in the cost for LANDSCAPE MAINTENANCE of the year specified.

CONTINGENCY

This work is reserved for items in addition to the design plans and specifications ordered by the Engineer and at the Engineer's discretion for work related to the proposed improvements that are not already addressed by project design plans and/or specifications. The amount of the CONTINGENCY allowance is not a guarantee of additional work and/or use of the discretionary cash allowance, and the Engineer may choose to not use any of the CONTINGENCY on the project or a portion less than the total allowance. Costs incurred by the Contractor due to damages and/or delays caused by the Contractor, and/or his sub-contractors and/or vendors are the responsibility of the Contractor at his own cost and are not eligible for reimbursement from the discretionary cash allowance.

The Contractor shall include in the Contract Sum the CONTINGENCY unit price and total cost equal to the amount noted in the Schedule of Pay Items for CONTINGENCY. Items (including all work, material and labor) covered by the allowance shall be as directed by the Engineer. Payment for items covered by the allowance shall be determined per Section 109.03 and 109.04 of the Standard Specifications.

If costs of items covered by the allowances are more than or less than allowance, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowance and (2) changes in the Contractor's costs.

GEOPOLYMER LINER

PART 1 GENERAL

1.01 RELATED DOCUMENTS

1.02 SUMMARY

A. This specification covers work, materials and equipment required for the preparation and installation of a Geopolymer Lining System providing a minimum 50-year design life for internal protection and structural rehabilitation of storm infrastructure. This includes but is not limited to pipe, tunnels, culverts, boxes, bends, junctions, structures, stabilized construction access, erosion control, temporary flow bypass, cofferdams, restoration and other similar infrastructure required for preparation, installation, cleanup and restoration of the project site for completion of the Geopolymer Liner. This work requires using an approved structural, monolithic spray-application of a high-build, geopolymer liner system with enhanced corrosion protection. The protective lining works shall include all activities associated with the protective lining system, not limited to the following:

1. Design of approved continuous protection liners to the internal surface of the host infrastructure (pipe, tunnels, manholes, culverts, boxes, structures, etc.), by an Illinois Licensed Structural Engineer.
2. Pre-construction inspection and surface preparation of host infrastructure prior to application of protective lining system,
3. Installation of approved continuous protection liners to the internal surface of the host infrastructure, for pipe; manhole to manhole, manhole to structure, or structure to structure and including lateral protection and reinstatement. Partial liner installations, unless directed by the Owner, are not allowed,
4. Quality Control Measures,
5. and Post-construction inspection, repairs and testing.

1.03 REFERENCES

A. Applicable ASTM and ACI Standards and Specifications

Unless revised herein, the Contractor shall follow the latest revision of the practices and standards of the following American Society for Testing and Materials (ASTM) and American Concrete Institute (ACI) Standards, which are made part of this specification:

American Society for Testing and Materials (ASTM):

1. ASTM C 31 - Standard Practice for Making and Curing Concrete Test Specimens in the Field
2. ASTM C 39 / C 109 – Compressive Strength Hydraulic Cement Mortars
3. ASTM C 78 / C 293 / C 348 – Flexural Strength of Concrete
4. ASTM C 138 / C 642 – Standard Test Method for Density

5. ASTM C 267 – Chemical Resistance of Mortars, Grouts, and Monolithic Surfacings and Polymer Concretes
6. ASTM C 469 – Static Modulus of Elasticity & Poisson's Ratio of Concrete Compression
7. ASTM C 496 – Splitting Tensile Strength of Cylindrical Concrete Specimens
8. ASTM C 666 – Freeze Thaw Durability
9. ASTM C 321 / C 882 – Bond Strength of Epoxy-Resin Systems Used with Concrete by Slant Shear
10. ASTM C 1090 – Shrinkage Test
11. ASTM C 1138 - Standard Test Method for Abrasion Resistance of Concrete (Underwater Method)
12. ASTM C 1140-03A – Preparing and Testing Specimens from Shotcrete Test Panels
13. ASTM C 1202 – Electrical Indication of Concrete's Ability to Resist Chloride Ion Penetration
14. ASTM F 2414 – Practice for Sealing Sewer Manhole Using Chemical Grouting

American Concrete Institute (ACI):
1. ACI Certified Concrete Field Testing Technician, Level 1

1.04 SUBMITTALS

A. Submittals shall be prepared and submitted in accordance with the General Conditions of the project.

B. The following items shall be submitted:
1. Before any field work by the Contractor, the Contractor shall submit to the Owner for his review the following:
    1. Manufacturer-certified copies of all test reports on each product used, including:
        (i) ASTM test results indicating the product conforms to and is suitable for its intended use per these specifications. Test reports shall be performed at the Contractor's expense and shall be carried out by an approved laboratory or by a reputable independent testing body. As a minimum, the test reports should include all those listed in Table 2 of this Section.
        (ii) XRF test results indicating the product confirms to the requirements as found in Table 1 of this Section. Testing to be performed as detailed in Paragraph 1.08.
        (iii) XRD test results indicating the product confirms to the requirements as found in Table 1 of this Section. Testing to be performed as detailed in Paragraph 1.08.
    2. Detailed Minimum Liner Thickness Calculations as required and as discussed further in Paragraph 2.05 of this Section, along with proposed plan for ensuring that the installed Geopolymer liner meets the minimum thickness requirements.
    3. Applicator Qualifications
        (i) Manufacturer certification that Applicator (as defined in Paragraph 1.05/B of this Section) has been trained and approved in the handling, mixing and application of the products to be used. At least one manufacturer certified Superintendent (as defined in Paragraph 1.05/C of this Section) must be on-site at all times during related construction activities. A fully trained field technician shall apply the liner material.
        (ii) Certification that the equipment to be used for applying the products has been manufactured or approved by the Manufacturer and Applicator personnel have been trained and certified for proper use of the equipment.
        (iii) Proof of any required permits or licenses necessary for the project.
2. A plan for cleaning existing culverts, including how sediment during clean out will be prevented from flowing into creek channel and how the sediment will be collected, removed from site and

properly disposed of. Plan shall include the use of a temporary flow bypass, filter bags and temporary sediment basin, or other methods Contractor proposes to use to prevent sediment and debris transport to the downstream creek channel.

3. After cleaning and TV inspection by the Contractor of all proposed infrastructure to be rehabilitated and before beginning lining of any infrastructure, the Contractor shall submit to the Owner/Engineer for his review the following:
    1. DVD (1 copy), or electronic transmittal, of the Contractor's TV inspection of the infrastructure prior to product application.
4. After rehabilitation of the infrastructure, the Contractor shall submit to the Owner/Engineer for his records the following:
    1. A DVD (1 copy), or electronic transmittal, of the Contractor's TV inspection of the completed Work.
    2. Test results of samples of Geopolymer material as specified in the Contract Documents.

1.05 QUALITY ASSURANCE

A. Product Manufacturer: Company specializing in manufacturing quality Geopolymer liner products with minimum 5-years' experience.

B. Applicator: Company pre-approved by the manufacturer and who meets the following conditions:
1. Horizontal Infrastructure:
    1. At least 5-years' experience specializing in the application of spray on lining systems including the installation of at least 5,000 LF in horizontal infrastructure using the specific material(s) being proposed for the subject project, OR
    2. Provide supplemental installation expertise in the form of a product expert, provided by the manufacturer, who meets the Superintendent requirements found in Item C, below.
        (i) In addition, product expert provided by the manufacturer must be additionally insured with a minimum liability umbrella of $4 million dollars.

Applicator shall initiate and enforce quality control procedures consistent with applicable ASTM and ACI standards and Manufacturer's recommendations.

C. Superintendent: Individual specialized in the application of Geopolymer Liner products, pre-approved by, or associated with the Geopolymer Liner manufacturer for the application of spray on lining systems, who, meets the following minimum requirements:
1. 5-years' experience in the industry actively involved in field services related to the lining of pipes, manholes or other wastewater and/or stormwater infrastructure.
2. Installation of 15,000 LF of geopolymer, cementitious or mortar products in horizontal infrastructure applications similar to those being proposed for the subject project.

D. Single Source Responsibility: Geopolymer Liner and all products used with the lining system, to include but not limited to Infiltration Control, Invert Repair and Patching and optional Antimicrobial Liquid (if recommended by supplier) shall be approved by and supplied through the Geopolymer Liner manufacturer. Use only products approved by Geopolymer Liner manufacturer, and use only within recommended limits.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Delivery: Deliver materials in original containers with seals unbroken and labels intact and free of moisture. Do not use materials that have been exposed to moisture or if there is visible damage to the packaging.

B. Receipt Process: All materials must be inspected upon receipt and properly documented as to the amount of material and the identification of the material by batch numbers. Dates and times along with the shipping company delivering the material should be recorded for possible future reference. See Daily Activity Log, Paragraph 1.08/C of this Section.

C. Storage: Contractor shall designate a specific space at the project site for storing and mixing materials. Protect this space and repair all damage resulting from use. Do not store kerosene nor gasoline in this space. Remove oily rags at the end of each day's work. Products are to be kept dry, protected from weather and stored under cover within the temperature ranges recommended by the manufacturer. Products are to be stored and handled according to their MSDSs or appropriate classification. Damaged or unsuitable products shall be promptly removed from the job site and shall be replaced with suitable materials.

1.07 PROJECT CONDITIONS

A. Environmental Requirements: Applicator shall conform with all local, state and federal regulations including those set forth by OSHA and the EPA and any other applicable authorities. Confined space entry requirements shall be followed.

B. Maintain the temperature inside the host infrastructure at not less than 1.00º C (34º F) and no more than 38.00º C (100º F), or as otherwise directed by manufacturer, during application and finishing.

C. Provide continuous ventilation and if necessary cooling and heating facilities to maintain surface and ambient temperatures before, during, and following application of finishes, within temperature range and for duration as directed by manufacturer.

D. Protection: Provide sufficient shielding to fully protect adjacent finished work.

1.08 QUALITY CONTROL

A. Confirmation of a Geopolymer

1. Material shall be confirmed as a Geopolymer as determined by XRF and XRD testing. Testing shall be completed on the proposed Geopolymer material and results submitted at the following stages:
    1. As a part of the Submittal documentation outlined in Paragraph 1.04/B/1/a.
    2. During application, XRF and XRD testing shall be carried out as follows:
        (i) Sieve the geopolymer material with 200 mesh.
        (ii) XRF and XRD testing to be run on the powder.
        (iii) Based upon the size of the project, as determined by the material that is to be used, testing shall be carried out based upon the following:
            (a) For projects utilizing equal to or less than 100,000 lbs. of product, first and last batch of material.
            (b) For projects utilizing more than 100,000 lbs. of product, first, last and one randomly sampled batch throughout the project life.

B. Quality Control, Sampling and Testing

1. During application, Applicator shall regularly perform and record Geopolymer lining thickness readings with a method approved by manufacturer. Applicator shall submit all documentation on thickness readings to Inspector on a daily basis when lining application occurs.
2. The Contractor shall be responsible for the preparation, documentation, labeling and storage of the test cylinders. Also the Contractor shall be responsible for deliver the test cylinders to the testing laboratory. Sample and make five test cylinders per ASTM C 31 and analyze with ASTM C 39, or as specified by contract document, for testing compressive strength from each day's work (for Vertical Infrastructure) or every 32,000 lbs. of material (for Horizontal Infrastructure). Label the cylinders with the date, location, project, and product batch numbers. The product batch numbers are located on each geopolymer material bag. Send the cylinders to a third-party laboratory or the manufacturer for verification. Test in accordance with ASTM C 39, or as specified in contract documents. Test the geopolymer material for compressive strength at 7 days (1 cylinder) and 28 days (3 cylinders) and leave 1 cylinder for retainage.
    (i) Samples shall be cast by a ACI certified Concrete Field Technician Level 1.
    (ii) All test shall be performed by an accredited independent third party laboratory.
3. If the thickness or the compressive strength or the compressive modulus of elasticity of the installed spin cast pipe lining is less than 90 percent of the specified values, the product is considered unacceptable. Submit a proposed method of repair or replacement for review and approval by the Engineer. Work required to remedy non-conforming work shall be at the Contractor's expense and shall not be measured for payment.

C. Performance and Material Testing – Horizontal Infrastructure (Pipes, Culverts, Tunnels, etc.)

(i) Submit the following information to the engineer: Product data, including manufacturer and brand name along with laboratory test results to verify 28-day compressive strength in accordance with ASTM C 31 or ASTM C 39. The project superintendent will require that samples of the applied material will be taken first and last day of application and every 32,000 lbs. of material. The samples may be taken from the pump immediately before discharge into the hose or at the spin caster, if feasible. A minimum of five samples will be obtained as required by ASTM C 31 and analyzed by ASTM C 39 or C 109. The samples must be undisturbed for a period of at least 24 hours before they can be transported. The material thickness may be determined by using depth gauges during the spraying process. Permanent depth gauges may either be attached to the host infrastructure prior to Geopolymer liner application or a handheld depth gauge may be used by the installer during installation. The depth measurements should be made in at least three locations within the infrastructure being lined as well as near both ends and the middle of the infrastructure. These measurements must be written down in a log book which will be submitted to the client at the end of the project, along with digital photos of the completed lining.

D. Daily Activity Logs -

1. Horizontal Infrastructure
    1. A Daily Activity Log will be filled out completely anytime a work crew is on site. This log includes listing the personnel present at the site, when they arrived and when they left the site. All materials must be inspected upon receipt and properly documented as to the amount of material and the identification of the material by batch numbers. Dates and times along with the shipping company delivering the material should be recorded for possible future reference

2. Important spray data includes the times material was applied and under which atmospheric conditions. The ambient air temperature, the dry powder temperature, the mixing water temperature, and the temperature inside the infrastructure are all recorded on the daily activity report.
3. The operating conditions are also recorded. These measurements include the water addition rate taken at the meter tube, the retrieval speed of the retraction system and the pump motor speed recorded at the pump.
4. Any special conditions are to be noted in the daily log.

2. Vertical Infrastructure
   1. A Daily Activity Log will be filled out completely anytime a work crew is on site. This log includes listing the personnel present at the site, when they arrived and when they left the site.
   2. Surface preparations made.
   3. Repair materials used.
   4. Any special conditions are to be noted in the daily log.

E. Equipment Calibration Reports
   1. Equipment calibration reports are to be maintained at all times for inspection by the Owner/Engineer.

F. Final Inspection
   1. See Paragraph 3.14 in this Section

1.09 WARRANTY

A. Manufacturer shall warrant all work against defects in materials and applicator shall warrant all work against defects in workmanship for a period of one (1) years, unless otherwise noted, from the date of final acceptance of the project. Manufacturer / Applicator shall, within a reasonable time after receipt of written notice thereof, repair defects in materials or workmanship, as applicable, which may develop during said one (1) year period, and any damage to other work caused by such defects or the repairing of same, at his own expense and without cost to the Owner. Additionally, manufacturer and applicator shall warrant the design and installation, respectively, to be structurally adequate for a period of ten (10) years and shall within a reasonable time after receipt of written notice of structural inadequacy, repair defects in materials or workmanship, as applicable, which may develop during said ten (10) year period, and any damage to other work caused by such defects or the repairing of same, at his own expense and without cost to the Owner. An average annual section loss of the liner system in excess of 0.015 inches per year, shall be considered structurally inadequate.

B. Minimum Compressive Strength, (as sampled by ASTM C 31 and as tested by ASTM C 39), shall be as follow:

   1. 28 Day Minimum Compressive Strength .....7,000 psi

PART 2 PRODUCTS

2.01 EXISTING PRODUCTS

A. Existing infrastructure may consist of RCP, brick, stone, corrugated metal, HDPE and others as allowed by manufacturer.

2.02 ACCEPTABLE MATERIALS

A. When more than one product is used in composite with other(s), all materials shall be supplied by the same manufacturer.

B. Approved materials as manufactured/supplied by the following supplier (or equivalent with proper documentation per these project specifications):
   1. Geopolymer Liner – GeoKrete (Quadex / Vortex Infrastructure)
   2. Geopolymer Liner – GeoSpray (Milliken Infrastructure)

2.03 GEOPOLYMER – CHARACTERIZATION TECHNIQUES

A. A process to determine that a product is actually a geopolymer shall include oxide composition and phase composition testing, using X-Ray Fluorescence (XRF) and X-Ray Diffraction (XRD), respectively.

   1. A geopolymer precursor, the powder passing a #200 mesh, must contain significant amounts of amorphous SiO_2 and Al_2O_3 in particular ratios as determined by X-Ray Fluorescence (XRF). See: Table 1
   2. Phase composition utilizing X-Ray Diffraction (XRD) shall be used to quantify amorphous phases in the geopolymer precursor powder. A significant amount of amorphous SiO_2 and Al_2O_3 is required for the geopolymerization process. Using (XRF) and (XRD) together provides optimum information for both oxide composition and phase composition. See: Table 1

Table 1

Oxide Content of Geopolymer Powder		**Acceptable Values**
Oxides		**(% wt)**
	SiO_2	40 – 55 %
	Amorphous SiO_2 (Geopolymer precursor*)	25 – 40 %
	Al_2O_3	13 – 30 %
	Amorphous Al_2O_3 (Geopolymer precursor*)	10 – 20 %
	Total Amorphous content (XRD Testing)	>50 %
	Total of cementitious crystalline phases wt.% (% Portland, calcium aluminate or calcium sulfoaluminate cement, i.e.: C_3S, C_2S, C_3A, C_4AF, $C_{12}A_7$, $C_4A_3\hat{S}$, etc.)	<20 %
	Total CaO	<25 %
	Total Na_2O	0.35 – 15.0 %
Oxide Ratios		**(ratio)**
	Amorphous SiO_2 / Amorphous Al_2O_3 (Ratio)	1-3
	Total Na_2O / Amorphous Al_2O_3 (Ratio)	0.05 – 1.2

*Geopolymer precursors and total amorphous content shall exclude all crystalline forms such as but not limited to those found in cementitious materials (C_3S, C_2S, C_3A, C_4AF, $C_{12}A_7$, $C_4A_3\hat{S}$, etc.) or in minerals (Quartz, Mullite, etc.).

2.04 GEOPOLYMER – PHYSICAL PROPERTIES

A. The Geopolymer lining material may be Centrifugally Cast, Manually Sprayed or Hand Troweled.

B. The Geopolymer lining material shall be a micro-fiber reinforced ultra-dense Geopolymer. This material shall provide a high strength fiber reinforced mortar specifically designed for ease of mechanical pumping, spraying and spin casting.

C. The Geopolymer liner shall not clog spinner heads or spray equipment. The Geopolymer liner can also be used to repair, resurface, or rebuild pits, sumps, trenches, tunnels, bridged, piers or any infrastructure that has experienced deterioration.

D. The Geopolymer liner shall be designed to produce a liner with improved compressive and flexural strength, high adhesion to damp surfaces, lower permeability and increased resistance to aggressive chemical attack as compared to Portland Cement based systems.

E. The fiber reinforced formula shall be engineered to improve hydraulic abrasion resistance, provide dimensional stability and protect against penetration by substances such as fats, oils, greases and chloride ions as compared to Portland Cement based systems.

F. The finished infrastructure must be such that once the Geopolymer liner sets, the total wall thickness will be homogeneous and monolithic.

The Geopolymer liner material shall conform to the minimum requirements demonstrated in standard laboratory conditions following ASTM Standards as presented in Table 2. The Typical Material Properties presented as minimum requirements in Table 2 have been obtained through the performance of independent Third Party Laboratory Testing performed under standard laboratory conditions. Field sampled material properties will meet or exceed table values herein. Material properties utilized in design engineering shall be equal or lesser of tabled values; therefore, difference between field values and minimum requirements will not affect design engineering.

Table 2

Physical Properties	ASTM	Requirements
Compressive Strength	ASTM C 39 / C 109	Min. 8,000 psi @ 28 days
Flexural Strength	ASTM C 78 / C 293 / C 348	Min. 800 psi @ 28 days
Density	ASTM C 138 / C 642	Dry 75 – 90 lb/ft^3 Wet 100 – 115 lb/ft^3
Chemical Resistance, Sulfuric Acid PH 1.0	ASTM C 267	Max 2% mass loss @ 8 weeks
Modulus of Elasticity	ASTM C 469	Min. 5,400,000 psi @ 28 days
Split Tensile Strength	ASTM C 496	Min. 900 psi @ 28 days
Freeze Thaw Durability	ASTM C 666	Max 0.1% Loss @ 300 cycles

Bond Strength to	ASTM C 882	Min. 3,000 psi @ 28 days
Shrinkage Test	ASTM C 1090	Max 0.02% @ 28 days
Abrasion Resistance	ASTM C 1138	Max 1.5% Weight Loss @ 6 cycles on 28 day sample
Rapid Chloride Ion Permeability	ASTM C 1202	Very Low @ 28 days

2.05 GEOPOLYMER – LINER THICKNESS DESIGN

A. General Liner Thickness Guidelines - The design thickness of the centrifugally cast, manually sprayed or hand troweled liner is largely a function of the condition of the existing infrastructure, earth loading, traffic loading, hydraulic loading, earthquake loading, ground conditions, variations in the ground water through seasons, variations in conditions in the longitudinal direction and other factors that the registered professional engineer retained by either the manufacturer or the owner may consider as important, given the local site conditions.

B. Signed and sealed designs shall be prepared and submitted by a Licensed Structural Engineer licensed in the state of Illinois.

C. The thickness calculations shall be site specific and involve a careful consideration of loading conditions that are applicable to those for the construction phase and long term service of the infrastructure in question. The Licensed Structural Engineer, experienced in infrastructure liner design, should provide a signed and sealed design thickness report, showing the assumptions made, input data used, design principles employed and the results of the calculations that would meet the standard of care, expected of professionals practicing in the same region and time period. The design thickness report shall include what amount of the design thickness is sacrificial (can be lost over time prior to the structure becoming structurally deficient). If the sacrificial thickness is presented as a safety factor, then it shall be independent and in addition to load factors required for culvert designs in conformance with both 2014 AASHTO LRFD Bridge Design Specifications, 7th Edition with 2015 Interims, and the current IDOT Culvert Design Manual.

D. As determined in Paragraph 2.05/B&C in this Section, the Contractor shall submit manufacturer's minimum recommended thicknesses or liner thickness calculations to the Owner/Consulting Engineer for review. Thickness or calculations shall substantiate sufficient liner thickness to achieve desired 50-year design life, including estimated loss of design thickness before liner becomes structurally inadequate.

E. The Contractor shall submit his proposal based upon the appropriate length, size, design life and host infrastructure parameters designated in the Project Plans and Specifications.

F. Heavy Infiltration
1. Injection grouting material shall be used to address heavy infiltration following manufacturer's instructions. Apply injection grouting material as approved by the Geopolymer manufacture.
2. Heavy infiltration means infiltration that meets the definition of a "runner" or "gusher", as defined by NASSCO's Pipeline Assessment Certification Program.
    1. Runner - water running into the sewer through a faulty joint or pipe wall. A continuous flow will be visible.
    2. Gusher - water entering the pipe "under pressure" through a defect or faulty joint.

G. Mild to Moderate Infiltration
   1. All fast setting materials furnished shall be designed to be applied in dry powder form, with no prior mixing of water, directly to active leaks under hydrostatic pressure in pipes, manholes or related structures. Materials shall consist of rapid setting cements, siliceous aggregates, and various accelerating agents. Material shall not contain chlorides, gypsum, or metallic particles. Approved infiltration control material shall be compatible with the geopolymer liner system and approved by the geopolymer supplier.

2.06 INVERT REPAIR AND PATCHING

A. The geopolymer liner system work shall include all material and labor necessary to fill existing voids in pipe, manholes and structure walls and to repair or reconstruct inverts where no hydrostatic pressure exists. The geoplymer liner system design shall incorporate the necessary additional materials and labor needed to complete existing void and structure repairs. Materials used for void and structure repairs shall be compatible for the Contractor's proposed bypass flow conditions & the anticipated return to service time period.
   1. Physical Properties of approved quick-setting material shall exhibit the following minimum physical properties:
      1. Compressive Strength (ASTM C109)
         (i) 30 mins: >1,200 psi
         (ii) 1 hour: >2,500 psi
         (iii) 1 day: >3,500 psi
      2. Bond Strength (ASTM C882)
         (i) 28 Day: >3,000 psi
      3. Shrinkage (ASTM C1090)
         (i) < 0.1%

2.07 TREATMENT OF EXPOSED REBAR

A. When encountered, exposed rebar shall be cleaned and then coated with a rust inhibiting coating to chemically modify the existing rust and introduce an inhibitor to reduce future rust formation.

2.08 SECONDARY CORROSION PROTECTION (ANTIMICROBIAL LIQUID)

A. Application of Antimicrobial Liquid, (when directed by Owner/Engineer), is to provide additional Microbiologically Induced Corrosion (MIC) resistance to the Geopolymer liner. The work consists of rolling, spraying or centrifugally applying Antimicrobial Liquid, or approved substitute, to the surface of the newly lined infrastructure. Equipment required for application can include centrifugal spray mechanisms, pneumatic spray pumps, hand pumps or paint style roller. Approved secondary corrosion protection (Antimicrobial Liquid) shall be compatible with the liner product material and approved by the liner supplier for use with their product.

B. The Antimicrobial Liquid shall be used as specified by the manufacturer and shall not be diluted in excess of the Manufacturer's recommendation for a full strength coating.

C. The Antimicrobial Liquid, shall be applied to the finished surface of the Geopolymer material during the application of the Geopolymer liner or anytime thereafter, as recommended by the Manufacturer.

D. The Antimicrobial Liquid shall be applied adequately to achieve surface saturation.

E. The Antimicrobial Liquid must be allowed to cure for a minimum of 30 minutes, or meet manufacturer recommended cure time, prior to releasing bypass or opening to any traffic.

2.09 GEOPOLYMER LINER APPLICATION EQUIPMENT

A. Horizontal Infrastructure

1. Manufacturer approved equipment shall be used in the application of the specified Geopolymer lining. The following outlines the equipment that is to be used on application to Horizontal Infrastructure. Such equipment may also be used on Vertical Infrastructure at the installer's discretion.
2. Major equipment components consist of a generator, an air compressor, a high pressure washer, a high shear mixer, a high output pump, a gyroscopic high speed spin cast delivery assembly, an electronic retraction system capable of +/- 5% repeatability, and high pressure hoses and couplings.
3. Application equipment shall include a high shear mixer and high output swing tube pump. In addition, the application equipment will have safety sensors that monitors specific operation parameters.
4. Application equipment shall have visible display for the rate of water addition. This will ensure water/material ratios are known and controlled. Water/material ratio must be maintained per manufacturers' recommendations.
5. Application equipment shall measure the back pressure on the discharge side of the pump. The change in pressure will alert the operator to any potential changes in flow rates. Backpressures must not exceed the system providers' recommendations at all times.
6. Spinner head shall be attached to a gyroscopic mechanism to layer the materials. The gyroscopic mechanism can adjust the spinner head pattern and frequency. The multiple layering process allows more uniform application of the product and achieves higher thickness levels, in a single pass.
7. Retraction system shall be capable of pulling the sled assembly with no more than +/-5% tolerance. The tolerance shall be verified on a daily basis, prior to product application, and recorded in the daily log.
8. Retraction system shall have a visible display that monitors the controlled rate of retraction. The rate of retraction and the volume of material discharged is necessary to calculate the thickness of the applied materials.
9. The rate of retraction, material application volume, dry material usage and length of application covered should be monitored and recorded on a daily basis. This is a critical to accurately verify the thickness of material applied.

2.10 EQUIPMENT MAINTENANCE

A. All equipment shall be in clean and good working conditions.

B. Maintenance and service shall be performed on the equipment to manufacturers' standards.

C. Inspect the dry material hopper in the mixer to ensure that there is no blockage or debris in the dry material feed point. Remove any debris prior to feeding dry powder.

D. Inspect the pre-mix chamber to ensure it that there is no blockage or debris. Remove any debris prior to mixing.

E. Inspect the mixing chamber to ensure there is no blockage or debris. Remove any debris or dry materials prior to application.

F. Inspect the pump to ensure there is no debris or blockage in the pump. Remove any debris prior to application.

G. Spare parts or extra equipment should be kept on site to ensure rapid redeployment in the event of equipment failure.

PART 3 EXECUTION

3.01 ACCEPTABLE APPLICATORS

A. Geopolymer liner must be applied by a Certified Applicator of the Geopolymer lining manufacturer, as discussed further in Paragraph 1.04/B/1/c & 1.05/B of this Section, and according to manufacturer specifications.

B. Format and Preparation of Data Log and Startup Checklist:
   1. Data Log and Startup Checklist for all works shall be on-site prior to commencement of the works. These sheets shall be used to ensure that the works are carried out and audited at multi-level according to standard steps and procedures. These sheets will be maintained on-site and available for viewing but will not be submitted. Information found on these logs will be used in the preparation of Daily Logs discussed in Paragraph 1.08/B of this Section.
   2. A Data Log shall be prepared for each shift/application at each location. Data Log shall contain the following information at minimum:
      1. Job Name and Location;
      2. Upstream, downstream and all intermediate manhole/access chambers reference numbers;
      3. Material(s) used in the application (by batch number) and the precise location of applied lining applications within the infrastructure system;
      4. Record of time/date of delivery of materials to application point (to include batch number and shipping company delivering the material);
      5. Time of commencement and completion of application;
      6. Application Method (hand trowel, hand sprayed or spin cast);
      7. Hose Length, Product Temperature Wet/Dry, Water Temperature, Water Addition Rate, Pressure, Condition of Surface to be Rehabbed, Manhole/Structure/Pipeline Temp. and Prevailing Atmospheric Conditions;
      8. Motor Speed and Retrieval Speed.

3.02 EXAMINATION

A. Applicator shall verify that surfaces and substrate conditions are ready to receive work as instructed by the product manufacturer.

B. Applicator shall examine surfaces scheduled to be finished prior to commencement of work. Report to Owner any condition that may potentially affect proper application.

C. Appropriate actions shall be taken to comply with regulatory and other applicable agencies with regard to environment, health and safety.

D. Any active flows shall be dammed, plugged or bypassed as required to ensure that the conveyed flow is maintained away from the surfaces to be lined. Flows should be totally plugged and/or diverted when lining the invert and during required dry/cure periods. All extraneous flows into the host

infrastructure at or above the area lined shall be plugged and/or diverted until the Geopolymer liner has cured per manufacturer recommendations.

E. Installation of the Geopolymer liner shall not commence until the host infrastructure has been properly cleaned and repaired in accordance with these specifications and Geopolymer liner manufacturer recommendations.

F. Prior to and during application, care should be taken to avoid exposure of direct sunlight or other intense heat source to the infrastructure being lined.

3.03 BYPASS PUMPING

A. Install and operate bypass pumping equipment to maintain flow around the host infrastructure being rehabilitated, and to prevent backup or overflow in compliance with Owner requirements.

B. Coordinate with Owner regarding potential upstream diversion strategies which could potentially reduce influent flow from upstream system.

C. Install all bypass and isolation material and equipment so as to not affect flow in upstream or downstream structures. The pump and bypass lines shall be of adequate capacity and size to handle the anticipated flow. Bypassing of sanitary sewer into the storm water system will not be permitted. For all bypass pumping, pump noise shall be kept to a minimum.

3.04 SURFACE PREPARATION AND STRUCTURE CLEANING

A. Excessive debris, sediment, root intrusion or other foreign materials which may impact the effectiveness of the surface preparation process shall be removed prior to the commencement thereof. The removal of collected sediment and debris from the 7th Avenue Culvert(s) shall utilize a temporary flow bypass system that allows creek flow through the sister culvert (or other approved flow bypass route for the creek). The temporary flow bypass system shall also collects sediment and debris being cleaned out of the subject culvert in a downstream sediment trap or temporary sediment basin that prevents the cleaned out sediment and debris from entering the downstream creek channel and allows the sediment and debris to be removed from the site without flowing downstream of the temporary flow bypass system. Water, if used to jet clean the existing culvert, may be allowed to pass through a filter bag or other sediment removal containment and rejoin creek flow downstream of the culvert only if the water color indicates that suspended sediment/debris is not being introduced to the creek flow. The Contractor shall follow the requirements for the project special provision for TEMPORARY FLOW BYPASS.

B. Offset structural components, lids, covers, frames, etc. shall be reported to the Owner / Consulting Engineer so that direction related to further possible action may be discussed prior to the commencement of surface preparation.

C. External soil/fill voids shall be remediated and/or stabilized by replacement or injection of stabilizing grout, flowable fill, or as determined appropriate by the engineer.

D. Oils, grease, incompatible existing coatings, waxes, form release, curing compounds, efflorescence, sealers, salts, or other contaminants which may affect the performance and adhesion of the lining to the substrate shall be addressed per manufacturers' recommendations.

E. Choice of surface preparation method(s) should be based upon the condition of the structure and concrete or masonry surface, potential contaminants present, access to perform work, and the required cleanliness and profile of the prepared surface to receive the repair and/or lining product.

F. Contractor shall select a method for cleaning the existing culvert and removing sediment from existing culvert inverts in a manner that does not damage the existing culvert. When grease or oil are present within the host infrastructure, steam, heated water (up to 200°F) or an approved detergent may be added to the water used for cleaning the culverts.

G. Loose debris materials resulting from the cleaning of the structure shall be removed prior to application of the Geopolymer lining material.

H. Loose or defective brick, concrete, grout, ledges, and steps shall be removed to provide an even surface prior to application of Geopolymer lining material.

I. Exposed rebar shall be pressure washed to remove any extraneous materials, such as dirt, oil, grease, debris and loose rust scale. Rebar is then coated with rust inhibiting coating and allowed to dry overnight. Geopolymer lining using the selected application method can then begin, lining to the required application thickness.

3.05 PRE-CONSTRUCTION INSPECTIONS

A. Prior to lining, the Contractor's experienced personnel trained in the inspection of large diameter pipes and/or related manholes and structures will clean the infrastructure to be rehabilitated and provide pre-construction videos utilizing color video inspection equipment. As an alternative, photos are acceptable for manholes and structures. The interior of the effected host infrastructure shall be carefully inspected to determine the location of and conditions which may prevent the proper installation of the Geopolymer liner, and it shall be noted so that these conditions can be corrected. A DVD or electronic transmittal shall be submitted to the Owner prior to the commencement of work.

3.06 SEALING ACTIVE LEAKS

A. The work consists of hand applying a dry quick-setting cementitious mix or, for heavy leaks, chemical grout designed to instantly stop running water or seepage in all types of concrete, metal and masonry pipes, manholes and structures. The applicator shall apply an approved quick-setting mortar or chemical grout in accordance with manufacturer's recommendations and the following requirements.
   1. The area to be repaired must be clean and free of debris to the extent the repair material will bond to the surface of the affected area.
   2. For quick-setting mortar, with gloved hand, place a generous amount of the dry quick-setting cementitious material to the active leak, with a smooth fast motion, maintaining external pressure for 30 seconds, repeat until leak is stopped.
   3. Proper application should not require any special mixing of product or special curing requirements after application.

B. Materials, additives, mixture ratios, and procedures utilized for the grouting process shall be in accordance with manufacturer's recommendations and shall be appropriate for the application.

3.07 INVERT REPAIR AND PATCHING

A. The work consists of mixing and applying flowable fill or a rapid setting, high early strength, non-shrink patching material to fill all large voids and repair inverts prior to spray lining of the structure in accordance with Paragraphs 2.07/B and C of this Section. For pipe or manhole invert repairs, flow must be temporarily restricted prior to cleaning.
   1. The area to be repaired must be capable of receiving the appropriate repair material.
   2. Mix water shall be clean potable water and require no additives or admixtures for use with cementitious patching materials.
   3. Flowable fill shall be mixed on-site or delivered to the site ready for use. Patching material shall be mixed in a mortar tub or 5-gallon pail with water per manufacturer's specifications. Material should be mixed in small quantities, to avoid setting prior to placement in voids or inverts.
   4. Once mixed to proper consistency, the materials shall be applied to the invert or void areas by pump, hand or trowel. In invert applications, care should be taken to not apply excessive material in the channel, which could restrict flow. Once applied, materials should be smoothed either by hand or trowel in order to facilitate flow.
   5. Flows with inverts patched with flowable fill are typically not reestablished until rehabilitation of the host infrastructure with Geopolymer liner has been completed.

3.08 MIXING OF THE GEOPOLYMER LINING MATERIAL

A. Contractor shall add the Geopolymer material to the batch water following precisely the manufacturer's water/material ratio. Precision metering of water in mixer is required to maintain the strict water to material ratio. The ability to closely adjust and monitor the addition of water through the use of a water meter is required. □

B. Mixing water temperatures must be determined before blending operations begin. The mixing water temperature must be recorded in the data log at multiple times throughout the day during the installation process. Water temperatures should be maintained at all times to within the limits required by the system supplier or manufacturer. The ability to provide mixing water at a consistent temperature is a critical aspect of the mixing and installation process.

C. The lining material shall be mixed in a high shear mixer, or similar, to ensure thorough and uniform mix of water with the material prior to pumping.

D. The mixing operations must be performed so that the minimum of dust is released into the surrounding environment.

E. The batch style mixing, precise metering of water and pump rate eliminates wet/dry and thick/thin variations resulting in a uniform structure liner regardless of the pumping distance.

F. Multiple application nozzles should be onsite at all times to address any application issues or failure of the nozzle. Multiple nozzles may be required to produce the required depth or finish of the liner surface.

3.09 APPLICATION OF GEOPOLYMER LINING MATERIAL

A. The work consists of spray applying and/or centrifugally spin-casting the specified geopolymer liner material to the inside of an existing structure. The necessary equipment and application methods to apply the liner materials shall be only as approved by the material manufacturer. Material shall be

mixed in accordance with manufacturer's specifications to proper consistency, then the materials shall be pumped through a high pressure material hose for delivery to the appropriate and / or selected application device.

B. In brick, block, rock, concrete and corrugated metal pipelines, tunnels and manholes with deteriorated surfaces, mortar material shall be applied to specified design thickness, but not less than one (1) inch. Application on all pre-cast/poured-in-place manholes shall occur after preparing surfaces. Material shall be applied to the bench and invert area in such a manner as to provide for proper drainage without ponding and to compensate for abrasion. Material must be applied only when surfaces are damp but with no visible water dripping or running.

C. Hand Spray Application

1. Material hose shall be coupled to a low-velocity spray application nozzle. Pumping of the material shall commence and the mortar shall be atomized by the introduction of air at the nozzle, creating a low-velocity spray pattern for material application.
2. Spraying typically is performed by starting at the bottom of the structure and progressing up the wall.
3. Material shall be applied to a specified uniform minimum thickness per the design thickness determined by the supplier's Structural Engineer, but not less than 1 inch. Material shall be applied to the bench area in such a manner as to provide for proper drainage without ponding and accounting for anticipated abrasion.
4. Troweling of materials shall begin immediately following the spray application. Initial troweling shall be in a motion, to compress the material into any voids within the structure walls. Precautions should be taken not to over trowel.
5. Once troweling has been completed the applied liner shall be brushed to remove trowel marks and to break up the latent surface brought about by troweling. Brushing should be in the horizontal plane and as with troweling do not over work the lining material.

D. Centrifugal Application

Spin-cast unit shall be approved by the material manufacturer. Mechanical insertion/extraction equipment and speeds shall be calibrated to the structure diameter to ensure uniform application to specified thickness. Material hose shall be coupled to the spin-cast unit. The spin-cast unit shall then be properly positioned within the horizontal or vertical structure.

1. Horizontal Structures/Pipes
    1. The Geopolymer lining material delivery hose shall be coupled to a medium-velocity spray application nozzle.
    2. Pumping of the material shall commence and the material shall be spin cast onto the pipe surface.
    3. A gyroscopic head that has a speed adjustment for making multiple position changes per minute is required. The gyroscopic head allows the spin cast mechanism and the associated selected nozzle to make multiple passes on the pipe wall in a single pass of the sled assembly.
    4. Spraying of a pipe is typically performed by starting at the pipe end-project location (Lower level) and progressing towards the entrance of the pipe (Higher level).
    5. At the beginning of each application segment the mechanical retraction system should be calibrated.

6. The measured rate observed and recorded must be within 5% of the expected speed and can be verified by this process.
7. Geopolymer liner shall be applied to a specified uniform minimum thickness as instructed by the professional engineer.
8. The Geopolymer delivery hose shall be coupled to a gyroscopic applicator device. The gyroscopic applicator shall then be positioned within the center, or positioned higher inside the pipe, as required by the diameter and shape of the pipe.
9. As the material begins to be gyroscopically cast evenly around the interior of the cavity, the rotating applicator head shall produce a uniform material thickness to the repair surface.
10. Controlled multiple passes shall then be made, if necessary, until the specified minimum finished thickness is attained. If the procedure is interrupted for any reason, the operator shall arrest the longitudinal transition of the applicator head until flows are recommenced.
11. Material thickness may be verified at any point with an approved depth gauge. If additional material is required at any level, the gyroscopic applicator head shall be placed at the location and application shall recommence until that area meets the required thickness.
12. The lining material shall be applied to a damp surface, with no free water.
13. The medium-velocity spray nozzle and the gyroscopic spin casting head may be used in conjunction to facilitate uniform application of the material to irregularities in the contour of the pipe walls.
14. If desired, the liner may be troweled following the spray application. Initial troweling shall be in an upward motion, to compress the material and solidify the pipe wall.
15. Proper steps shall be taken to ensure the material is cured in a moist and moderate climate as directed by the manufacturer. General underground conditions are usually adequate to meet this curing requirement. However, when situations of dry and/or hot conditions are present, the use of a wind barrier and fogging spray may be required.

3.10 CURING OF THE GEOPOLYMER LINING MATERIAL

A. The Manufacturer's recommended cure schedule must be followed at all times unless advised otherwise by Manufacturer in writing. The Contractor must provide evidence of such adherence via the Data Log.

B. SPECIAL NOTE: The use of curing compounds is not recommended for Geopolymer liners and shall not be permitted unless approved in writing by the Geopolymer designer and supplier.

3.11 REINSTATEMENT OF LATERALS AND CONNECTING PIPES

A. Using the records from the pre-construction inspections, the Contractor shall insure that all laterals and other connecting pipes are properly reinstated and put back in service. Any excessive Geopolymer liner material at the connection shall be removed.

B. The Contractor shall insure that no infiltration is originating at the point of connection. If it is, the Contractor shall seal the leak with chemical grout.

C. The laterals and pipe connections shall then be completed by hand, applying the liner to the outer surface of the connection to the pipe and smoothly tapering it into the lateral or connecting pipe. No rough edges or abrupt transitions that could catch debris or hinder the flow shall remain.

3.12 TERMINATION AND SEALING AT MANHOLES, JUNCTIONS, BENDS, INLETS, OUTLETS, SHAFTS AND OTHER STRUCTURES

A. Termination of the Geopolymer liner at the end of a pipe or manhole shall be completed by hand applying the liner to the outer surface of the pipe or into the interior of the manhole.

B. Unless specifically directed otherwise in the project plans/specification, all starter/intermediate/terminal manholes/junctions/bends/other structures which are directly impacted by pipe rehabilitation activities will also be Geopolymer lined as directed in the project plans/specifications. If no direction is provided, or should information conflict, these manholes are to be lined with a minimum thickness of 1 inch. The junctions, bends, shafts, and other structures are to be lined with the design thickness as determined by the supplier's Structural Engineer, but not less than 1 inch. Refer to Paragraph 2.05/B/3, this Section, for design requirements.

3.13 END OF SHIFT EQUIPMENT CLEAN UP PROCEDURES

A. All equipment used during the days/shifts operations shall be properly cleaned and stored.

B. All hoses, fittings, pumps, mixers, spray head equipment, retraction equipment will be cleaned both inside and out.

C. All mixed Geopolymer materials shall be captured and disposed of properly.

3.14 FINAL INSPECTION

A. A final visual inspection should be made by the Inspector and Applicator, periodically throughout the progression of construction prior to the completion of a lining stage. Any deficiencies in the finished lining shall be marked and repaired by Applicator according to the procedures set forth herein.

B. At the completion of a lining stage of the infrastructure, and once all repairs have been made and accepted, a video inspection DVD (1 copy) of the completed line segments shall be submitted to the Owner/Engineer by the Contractor. This inspection shall be performed by a color video inspection system. The finished Geopolymer shall be continuous over the entire length of all runs and be free of dry spots. No infiltration of groundwater shall be observed. All service entrances shall be accounted for and shall be unobstructed.

PART 4 MEASUREMENT AND PAYMENT

4.01 MEASUREMENT

A. Infiltration Control
   1. Mild to Moderate – Fast Setting Materials shall be incidental to the Geopolymer Liner.
   2. Heavy - Chemical Grouting Materials shall be incidental to the Geopolymer Liner.

B. Invert Repair and Patching
   1. Invert Repair materials shall be measured on a per square foot basis. This shall be measured only in areas where loss of invert section has resulted in a substantial void and/or undercutting of the soil subbase below the existing invert.

C. Treatment of Exposed Rebar

1. Rust Inhibiting Coating shall be incidental to the Geopolymer Liner.

D. Geopolymer Rehabilitation
1. Measurement for installation of Geopolymer Liner on Horizontal Infrastructure shall be made from the center of the entry manhole/structure to the center of the exit manhole/structure as shown on the drawings. Measurement shall be per linear foot per size of pipe.

E. Lateral and Connecting Pipe Reinstatement
1. Lateral and Connecting Pipe reinstatements shall be incidental to the Geopolymer Liner.

F. Secondary Corrosion Protection
1. Antimicrobial Liquid, if recommended by the Geopolymer Supplier or their Engineer shall be incidental to the Geopolymer Liner.

4.02 PAYMENT

A. Infiltration Control
1. Mild to Moderate – Payment for Fast Setting Materials shall be incidental to the Geopolymer Liner.
2. Heavy - Payment for Chemical Grout Injection shall be incidental to the Geopolymer Liner.

B. Invert Repair and Patching
1. Payment for Invert Repair shall be paid on a per square foot basis in accordance with the Unit Prices contained in the Proposal.

C. Treatment of Exposed Rebar
1. Payment for Rust Inhibiting Coating shall be incidental to the Geopolymer Liner.

D. Geopolymer Rehabilitation
1. Payment for installation of Geopolymer Liner on Horizontal Infrastructure shall be paid on a linear foot basis per pipe size in accordance with the Unit Prices contained in the Proposal.
2. Payment shall include design of the approved Geopolymer liner (as applicable), pre-construction inspection and surface preparation of the host pipe prior to application of the Geopolymer liner, cleaning of the existing structure(s) including sediment removal from the structure invert, infiltration control, treatment of exposed rebar, spill prevention plan, fuel, potable water, safety, traffic control, dust/erosion control, debris disposal, field quality control, material testing, site restoration, installation of the Geopolymer liner, and all other associated work specified and/or required to provide a completed installation.
3. Any item not specified elsewhere shall be considered incidental to the work. Contractor shall include all incidental costs in the Unit Price.

E. Lateral and Connecting Pipe Reinstatement
1. Payment for reinstatement of laterals and connecting pipes shall be incidental to the Geopolymer Liner.
2. This shall include reinstatement of the laterals and connecting pipes to the pipe that received the Geopolymer liner, pre-construction inspection and surface preparation of the laterals and connecting pipes at the connection point, light cleaning, infiltration control, spill prevention plan, fuel, potable water, safety, traffic control, dust/erosion control, field quality control, material testing, site restoration, installation of any additional Geopolymer liner material for the

reinstatement, and all other associated work specified and/or required to provide a completed installation.

3. Any item not specified elsewhere shall be considered incidental to the work. Contractor shall include all incidental costs in the Unit Price.

END OF SECTION

O:\86150245\Design\Spec\Final_Spec\CVIL 86150245 Wash and Spring SPECS-050817.doc

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

SPECIAL PROVISION FOR INSURANCE

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

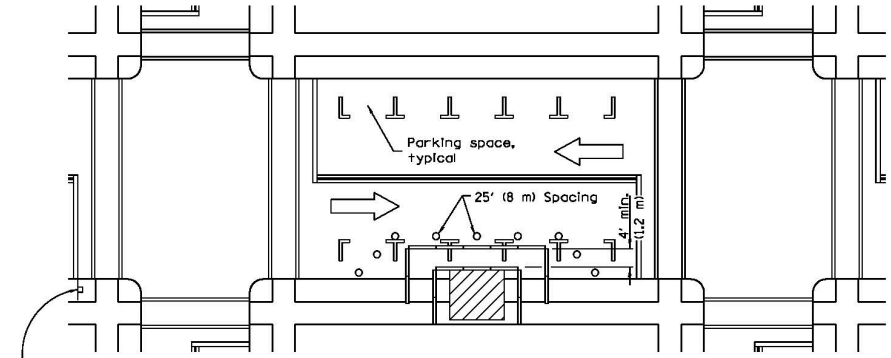
All references to Sections or Articles in this specification shall be construed to mean specific Section or Article of the Standard Specifications for Road and Bridge Construction, adopted by the Department of Transportation.

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 St. Charles

HR Green, Inc.

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



① ROAD CONSTRUCTION AHEAD — W20-1103(0)-48 for contract construction projects

Or

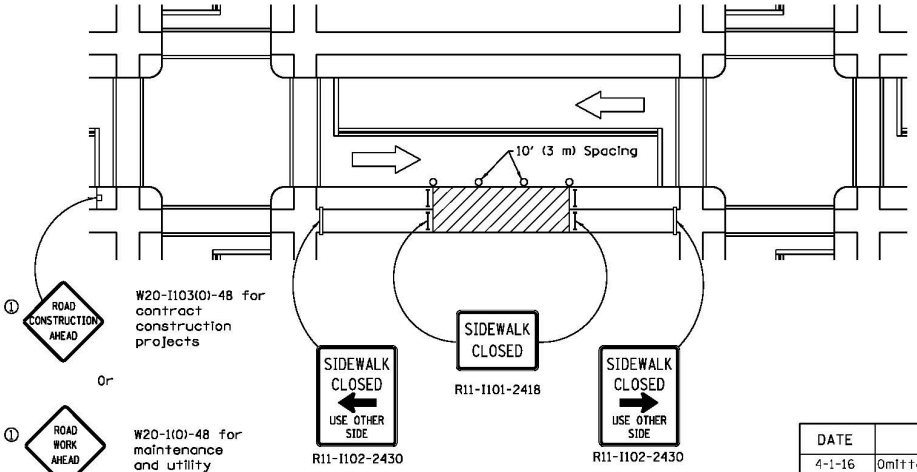
① ROAD WORK AHEAD — W20-1(0)-48 for maintenance and utility projects

SIDEWALK DIVERSION

① Omit whenever duplicated by road work traffic control.

SYMBOLS

- Work area
- Sign on portable or permanent support
- Barricade or drum
- Cone, drum or barricade
- Type III barricade
- Detectable pedestrian channelizing barricade



① ROAD CONSTRUCTION AHEAD — W20-1103(0)-48 for contract construction projects

Or

① ROAD WORK AHEAD — W20-1(0)-48 for maintenance and utility projects

SIDEWALK CLOSURE

GENERAL NOTES

This Standard is used where, at any time, pedestrian traffic must be rerouted due to work being performed.

This Standard must be used in conjunction with other Traffic Control & Protection Standards when roadway traffic is affected.

Temporary facilities shall be detectable and accessible.

The temporary pedestrian facilities shall be provided on the same side of the closed facilities whenever possible.

The SIDEWALK CLOSED / USE OTHER SIDE sign shall be placed at the nearest crosswalk or intersection to each end of the closure. Where the closure occurs at a corner, the signs shall be erected on the corners across the street from the closure. The SIDEWALK CLOSED signs shall be used at the ends of the actual closures.

Type III barricades and R11-2-4830 signs shall be positioned as shown in "ROAD CLOSED TO ALL TRAFFIC" detail on Standard 701901.

All dimensions are in inches (millimeters) unless otherwise shown.

Illinois Department of Transportation

APPROVED April 1, 2016
ENGINEER OF SAFETY ENGINEERING

APPROVED April 1, 2016
ENGINEER OF DESIGN AND ENVIRONMENT

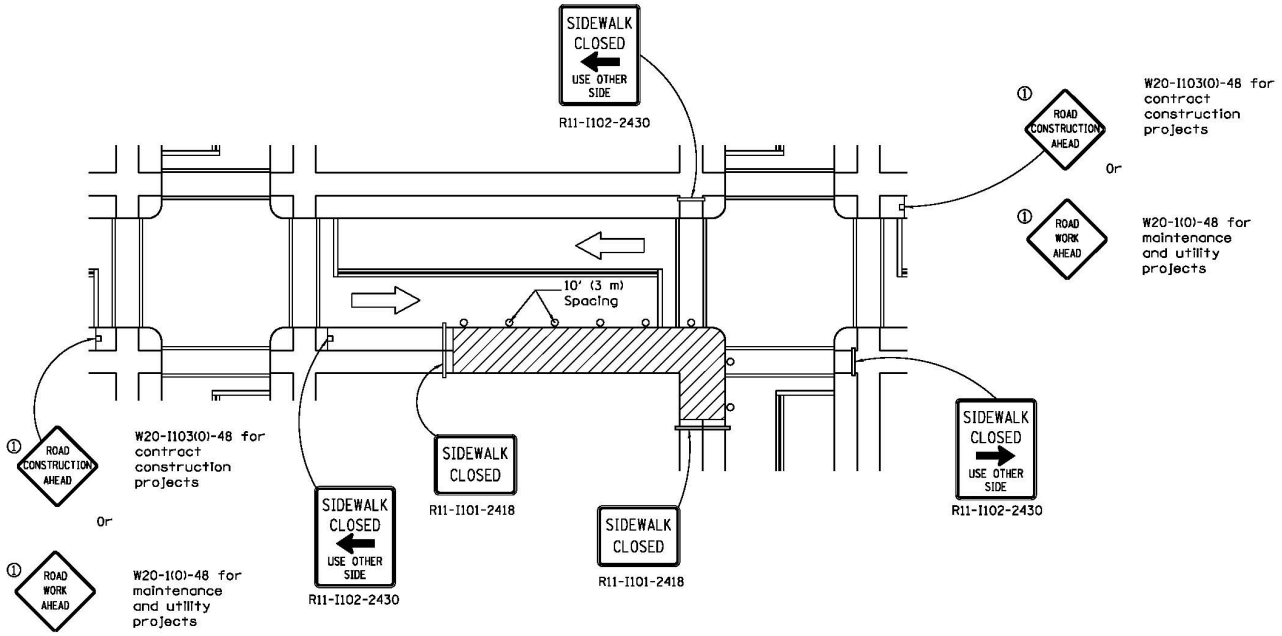
ISSUED 1-1-97

DATE	REVISIONS
4-1-16	Omitted orange safety fence
	from standard as this is
	covered in the std. spec.
1-1-12	Added SIDEWALK DIVERSION.
	Modified appearance of
	plan views. Renamed Std.

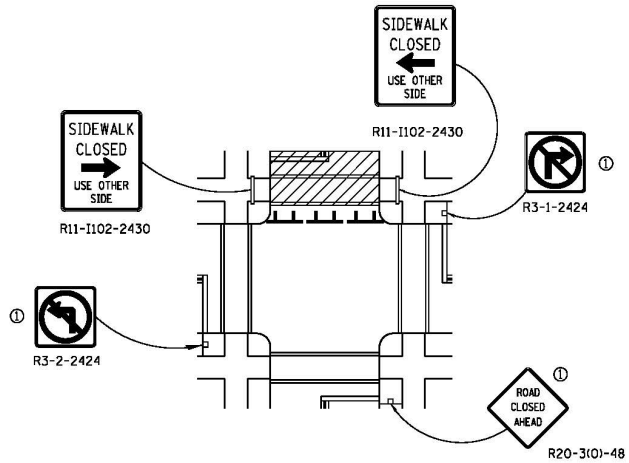
SIDEWALK, CORNER OR CROSSWALK CLOSURE

(Sheet 1 of 2)

STANDARD 701801-06



CORNER CLOSURE



CROSSWALK CLOSURE

Illinois Department of Transportation

APPROVED April 1, 2016
ENGINEER OF SAFETY ENGINEERING

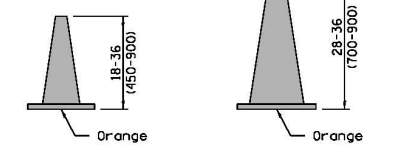
APPROVED April 1, 2016
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-16

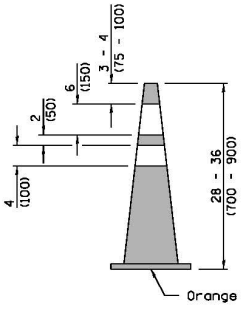
SIDEWALK, CORNER OR CROSSWALK CLOSURE

(Sheet 2 of 2)

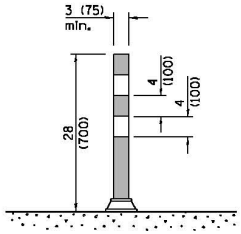
STANDARD 701801-06



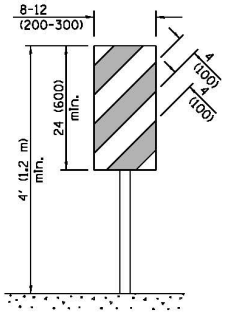
CONE FOR DAYTIME



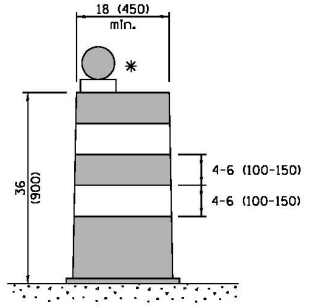
REFLECTORIZED CONE FOR NIGHTTIME



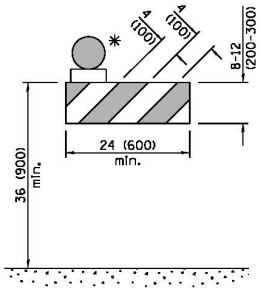
TUBULAR MARKER



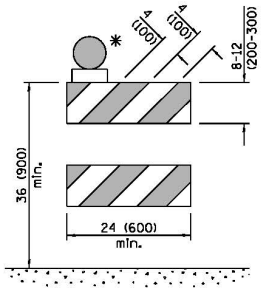
VERTICAL PANEL
POST MOUNTED



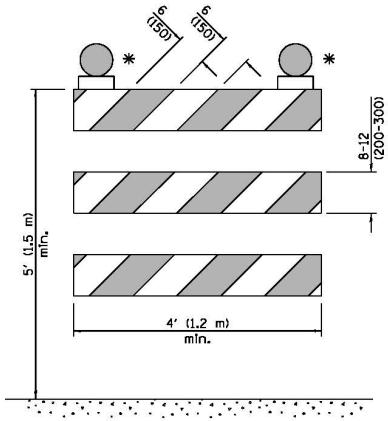
DRUM



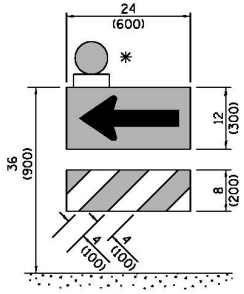
TYPE I BARRICADE



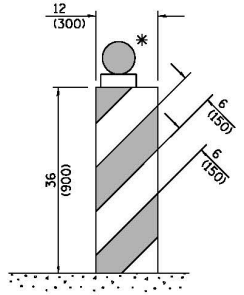
TYPE II BARRICADE



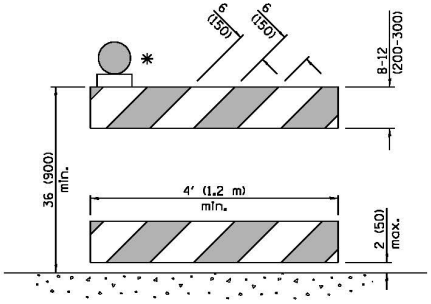
TYPE III BARRICADE



DIRECTION INDICATOR BARRICADE



VERTICAL BARRICADE



DETECTABLE PEDESTRIAN CHANNELIZING BARRICADE

✱ Warning lights (If required)

GENERAL NOTES

All heights shown shall be measured above the pavement surface.

All dimensions are in inches (millimeters) unless otherwise shown.

Illinois Department of Transportation

APPROVED January 1, 2017
ENGINEER OF OPERATIONS

APPROVED January 1, 2017
ENGINEER OF DESIGN AND ENVIRONMENT

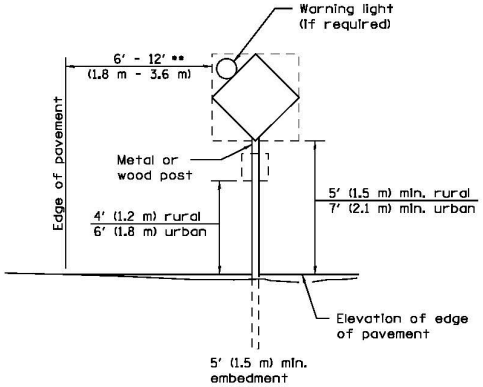
ISSUED 1-1-97

DATE	REVISIONS
1-1-17	Changed FLEXIBLE DELINEATOR
	to TUBULAR MARKER.
4-1-16	Add dim's to barricades. Rev.
	note for post mnt. signs.
	Rev. cone dtls. Add W12-1103.

TRAFFIC CONTROL DEVICES

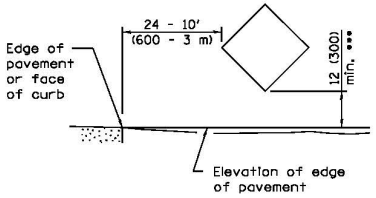
(Sheet 1 of 3)

STANDARD 701901-06



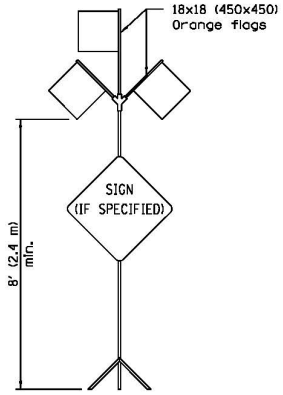
POST MOUNTED SIGNS

•• When curb or paved shoulder are present this dimension shall be 24 (600) to the face of curb or 6' (1.8 m) to the outside edge of the paved shoulder.

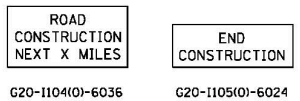


SIGNS ON TEMPORARY SUPPORTS

••• When work operations exceed four days, this dimension shall be 5' (1.5 m) min. If located behind other devices, the height shall be sufficient to be seen completely above the devices.



HIGH LEVEL WARNING DEVICE



G20-I104(0)-6036 G20-I105(0)-6024

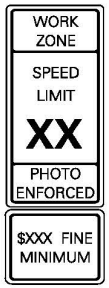
This signing is required for all projects 2 miles (3200 m) or more in length.

ROAD CONSTRUCTION NEXT X MILES sign shall be placed 500' (150 m) in advance of project limits.

END CONSTRUCTION sign shall be erected at the end of the job unless another job is within 2 miles (3200 m).

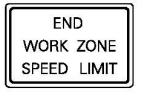
Dual sign displays shall be utilized on multilane highways.

WORK LIMIT SIGNING



W21-I115(0)-3618
R2-1-3648
R10-I108p-3618 ••••
R2-I106p-3618

Sign assembly as shown on Standards or as allowed by District Operations.



G20-I103(0)-6036

This sign shall be used when the above sign assembly is used.

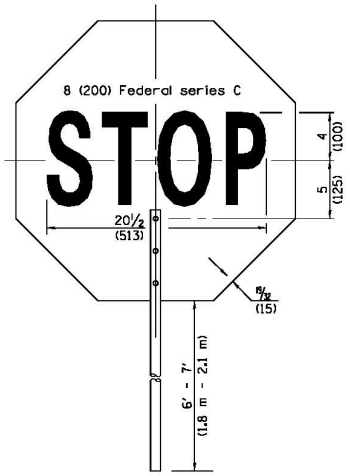
HIGHWAY CONSTRUCTION SPEED ZONE SIGNS

•••• R10-I108p shall only be used along roadways under the jurisdiction of the State.

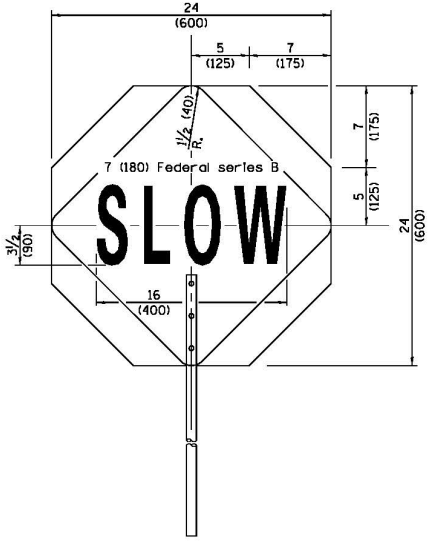
W12-I103-4848

WIDTH RESTRICTION SIGN

XX'-XX" width and X miles are variable.



FRONT SIDE



REVERSE SIDE

FLAGGER TRAFFIC CONTROL SIGN

Illinois Department of Transportation

APPROVED January 1, 2017
ENGINEER OF OPERATIONS

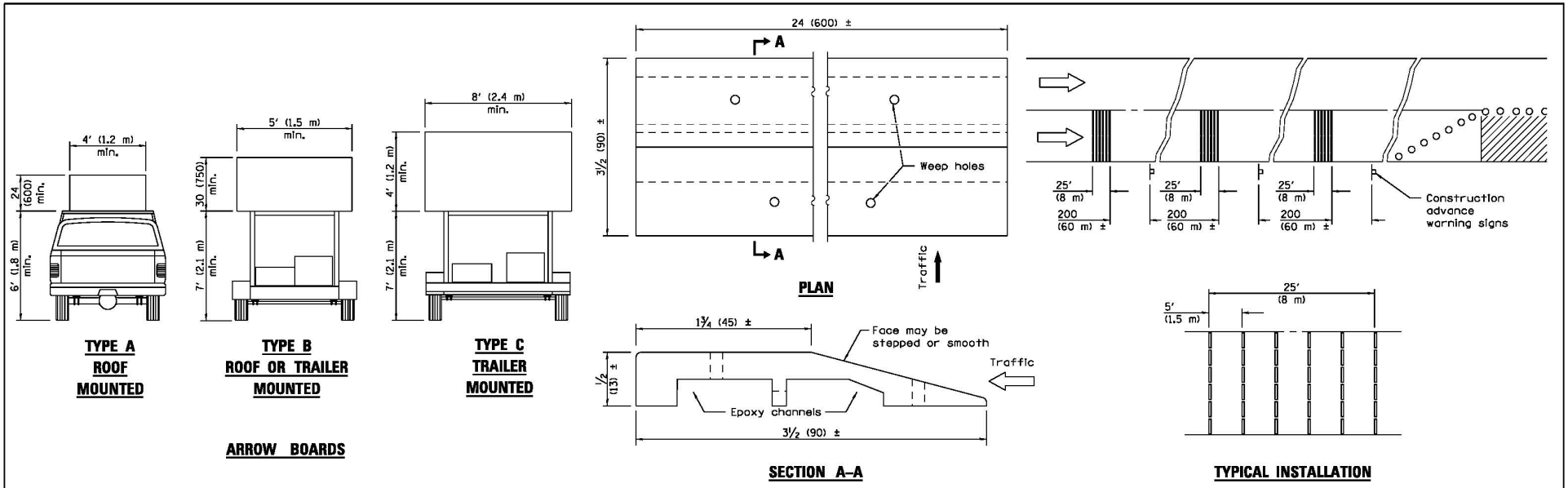
APPROVED January 1, 2017
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

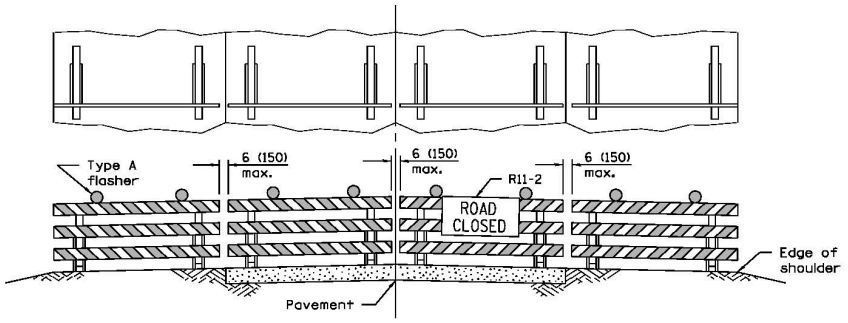
TRAFFIC CONTROL DEVICES

(Sheet 2 of 3)

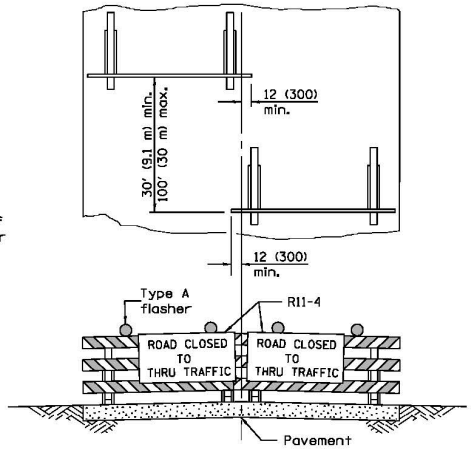
STANDARD 701901-06



TEMPORARY RUMBLE STRIPS



Reflectorized striping may be omitted on the back side of the barricades. If a Type III barricade with an attached sign panel which meets NCHRP 350 is not available, the sign may be mounted on an NCHRP 350 temporary sign support directly in front of the barricade.



Reflectorized striping shall appear on both sides of the barricades. If a Type III barricade with an attached sign panel which meets NCHRP 350 is not available, the signs may be mounted on NCHRP 350 temporary sign supports directly in front of the barricade.

TYPICAL APPLICATIONS OF TYPE III BARRICADES CLOSING A ROAD

Illinois Department of Transportation

APPROVED January 1, 2017
ENGINEER OF OPERATIONS

APPROVED January 1, 2017
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-17

TRAFFIC CONTROL DEVICES

(Sheet 3 of 3)

STANDARD 701901-06

Prevailing Wage rates for Kane County effective Sept. 1, 2017												
Trade Title	**Region**	**Type**	**Class**	**Base Wage**	**Fore-man Wage**	**M-F OT**	**OSA**	**OSH**	**H/W**	**Pension**	**Vacation**	**Training**
ASBESTOS ABT-GEN	ALL	ALL		41.20	42.20	1.5	1.5	2	13.77	13.20	0.00	0.50
ASBESTOS ABT-MEC	ALL	BLD		37.46	39.96	1.5	1.5	2	11.62	11.06	0.00	0.72
BOILERMAKER	ALL	BLD		48.49	52.86	2	2	2	6.97	19.61	0.00	0.90
BRICK MASON	ALL	BLD		45.38	49.92	1.5	1.5	2	10.45	16.68	0.00	0.90
CARPENTER	ALL	ALL		46.35	48.35	1.5	1.5	2	11.79	18.88	0.00	0.63
CEMENT MASON	ALL	ALL		44.84	46.84	2	1.5	2	10.00	21.01	0.00	0.50
CERAMIC TILE FNSHER	ALL	BLD		38.56	38.56	1.5	1.5	2	10.65	11.18	0.00	0.68
COMMUNICATION TECH	N	BLD		38.15	40.55	1.5	1.5	2	12.18	12.77	0.00	0.67
COMMUNICATION TECH	S	BLD		40.15	42.55	1.5	1.5	2	11.51	11.24	0.00	1.41
ELECTRIC PWR EQMT OP	ALL	ALL		37.89	51.48	1.5	1.5	2	5.00	11.75	0.00	0.38
ELECTRIC PWR EQMT OP	ALL	HWY		41.45	56.38	1.5	1.5	2	5.50	12.87	0.00	0.73
ELECTRIC PWR GRNDMAN	ALL	ALL		29.30	51.48	1.5	1.5	2	5.00	9.09	0.00	0.29
ELECTRIC PWR GRNDMAN	ALL	HWY		32.00	56.38	1.5	1.5	2	5.50	9.92	0.00	0.66
ELECTRIC PWR LINEMAN	ALL	ALL		45.36	51.48	1.5	1.5	2	5.00	14.06	0.00	0.45
ELECTRIC PWR LINEMAN	ALL	HWY		49.67	56.38	1.5	1.5	2	5.50	15.40	0.00	0.88
ELECTRIC PWR TRK DRV	ALL	ALL		30.34	51.48	1.5	1.5	2	5.00	9.40	0.00	0.30
ELECTRIC PWR TRK DRV	ALL	HWY		33.14	56.38	1.5	1.5	2	5.50	10.29	0.00	0.59
ELECTRICIAN	N	ALL		47.29	51.69	1.5	1.5	2	14.58	15.87	0.00	0.95
ELECTRICIAN	S	BLD		47.72	51.97	1.5	1.5	2	14.81	13.36	0.00	1.67
ELEVATOR CONSTRUCTOR	ALL	BLD		51.94	58.43	2	2	2	14.43	14.96	4.16	0.90
FENCE ERECTOR	ALL	ALL		45.56	49.20	2	2	2	11.02	21.51	0.00	0.70
GLAZIER	ALL	BLD		42.45	43.95	1.5	1.5	2	14.04	20.14	0.00	0.94
HT/FROST INSULATOR	ALL	BLD		50.50	53.00	1.5	1.5	2	12.12	12.96	0.00	0.72
IRON WORKER	ALL	ALL		45.61	49.25	2	2	2	11.52	22.65	0.00	0.81
LABORER	ALL	ALL		41.20	41.95	1.5	1.5	2	13.77	13.20	0.00	0.50

LATHER	ALL	ALL		46.35	48.35	1.5	1.5	2	11.79	18.88	0.00	0.63
MACHINIST	ALL	BLD		45.35	47.85	1.5	1.5	2	7.26	8.95	1.85	0.00
MARBLE FINISHERS	ALL	ALL		33.95	33.95	1.5	1.5	2	10.45	15.52	0.00	0.47
MARBLE MASON	ALL	BLD		44.63	49.09	1.5	1.5	2	10.45	16.28	0.00	0.59
MATERIAL TESTER I	ALL	ALL		31.20	31.20	1.5	1.5	2	13.77	13.20	0.00	0.50
MATERIALS TESTER II	ALL	ALL		36.20	36.20	1.5	1.5	2	13.77	13.20	0.00	0.50
MILLWRIGHT	ALL	ALL		46.35	48.35	1.5	1.5	2	11.79	18.88	0.00	0.63
OPERATING ENGINEER	ALL	BLD	1	50.10	54.10	2	2	2	18.80	14.35	2.00	1.30
OPERATING ENGINEER	ALL	BLD	2	48.80	54.10	2	2	2	18.80	14.35	2.00	1.30
OPERATING ENGINEER	ALL	BLD	3	46.25	54.10	2	2	2	18.80	14.35	2.00	1.30
OPERATING ENGINEER	ALL	BLD	4	44.50	54.10	2	2	2	18.80	14.35	2.00	1.30
OPERATING ENGINEER	ALL	BLD	5	53.85	54.10	2	2	2	18.80	14.35	2.00	1.30
OPERATING ENGINEER	ALL	BLD	6	51.10	54.10	2	2	2	18.80	14.35	2.00	1.30
OPERATING ENGINEER	ALL	BLD	7	53.10	54.10	2	2	2	18.80	14.35	2.00	1.30
OPERATING ENGINEER	ALL	FLT		38.00	38.00	1.5	1.5	2	18.05	13.60	1.90	1.30
OPERATING ENGINEER	ALL	HWY	1	48.30	52.30	1.5	1.5	2	18.80	14.35	2.00	1.30
OPERATING ENGINEER	ALL	HWY	2	47.75	52.30	1.5	1.5	2	18.80	14.35	2.00	1.30
OPERATING ENGINEER	ALL	HWY	3	45.70	52.30	1.5	1.5	2	18.80	14.35	2.00	1.30
OPERATING ENGINEER	ALL	HWY	4	44.30	52.30	1.5	1.5	2	18.80	14.35	2.00	1.30
OPERATING ENGINEER	ALL	HWY	5	43.10	52.30	1.5	1.5	2	18.80	14.35	2.00	1.30
OPERATING ENGINEER	ALL	HWY	6	51.30	52.30	1.5	1.5	2	18.80	14.35	2.00	1.30
OPERATING ENGINEER	ALL	HWY	7	49.30	52.30	1.5	1.5	2	18.80	14.35	2.00	1.30
ORNAMNTL IRON WORKER	ALL	ALL		45.06	48.66	2	2	2	10.52	20.76	0.00	0.70
PAINTER	ALL	ALL		44.18	46.18	1.5	1.5	1.5	10.30	8.20	0.00	1.35
PAINTER SIGNS	ALL	BLD		37.45	42.05	1.5	1.5	2	2.60	3.18	0.00	0.00
PILEDRIVER	ALL	ALL		46.35	48.35	1.5	1.5	2	11.79	18.88	0.00	0.63
PIPEFITTER	ALL	BLD		47.50	50.50	1.5	1.5	2	10.05	17.85	0.00	2.12
PLASTERER	ALL	BLD		42.75	45.31	1.5	1.5	2	14.00	15.71	0.00	0.89
PLUMBER	ALL	BLD		49.25	52.20	1.5	1.5	2	14.34	13.35	0.00	1.28
ROOFER	ALL	BLD		42.30	45.30	1.5	1.5	2	9.08	12.14	0.00	0.58

SHEETMETAL WORKER	ALL	BLD		45.77	47.77	1.5	1.5	2	10.65	14.10	0.00	0.82
SIGN HANGER	ALL	BLD		26.07	27.57	1.5	1.5	2	3.80	3.55	0.00	0.00
SPRINKLER FITTER	ALL	BLD		47.20	49.20	1.5	1.5	2	12.25	11.55	0.00	0.55
STEEL ERECTOR	ALL	ALL		45.56	49.20	2	2	2	11.02	21.51	0.00	0.70
STONE MASON	ALL	BLD		45.38	49.92	1.5	1.5	2	10.45	16.68	0.00	0.90
TERRAZZO FINISHER	ALL	BLD		40.54	40.54	1.5	1.5	2	10.65	12.76	0.00	0.73
TERRAZZO MASON	ALL	BLD		44.38	47.88	1.5	1.5	2	10.65	14.15	0.00	0.82
TILE MASON	ALL	BLD		45.49	49.49	1.5	1.5	2	10.65	13.88	0.00	0.86
TRAFFIC SAFETY WRKR	ALL	HWY		33.50	35.10	1.5	1.5	2	8.10	7.62	0.00	0.25
TRUCK DRIVER	ALL	ALL	1	36.30	36.85	1.5	1.5	2	8.10	9.76	0.00	0.15
TRUCK DRIVER	ALL	ALL	2	36.45	36.85	1.5	1.5	2	8.10	9.76	0.00	0.15
TRUCK DRIVER	ALL	ALL	3	36.65	36.85	1.5	1.5	2	8.10	9.76	0.00	0.15
TRUCK DRIVER	ALL	ALL	4	36.85	36.85	1.5	1.5	2	8.10	9.76	0.00	0.15
TUCKPOINTER	ALL	BLD		45.42	46.42	1.5	1.5	2	8.32	15.42	0.00	0.80

Legend

M-F OT Unless otherwise noted, OT pay is required for any hour greater than 8 worked each day, Mon through Fri. The number listed is the multiple of the base wage.

OSA Overtime pay required for every hour worked on Saturdays

OSH Overtime pay required for every hour worked on Sundays and Holidays

H/W Health/Welfare benefit

Explanations KANE COUNTY

ELECTRICIANS AND COMMUNICATIONS TECHNICIAN (NORTH) - Townships of Burlington, Campton, Dundee, Elgin, Hampshire, Plato, Rutland, St. Charles (except the West half of Sec. 26, all of Secs. 27, 33, and 34, South half of Sec. 28, West half of Sec. 35), Virgil and Valley View CCC and Elgin Mental Health Center.

The following list is considered as those days for which holiday rates of wages for work performed apply: New Years Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day, Christmas Day and Veterans Day in some classifications/counties. Generally, any of these holidays which fall on a Sunday is celebrated on the following Monday. This then makes work performed on that Monday payable at the appropriate overtime rate for holiday pay. Common practice in a given local may alter certain days of celebration. If in doubt, please check with IDOL.

EXPLANATION OF CLASSES

ASBESTOS - GENERAL - removal of asbestos material/mold and hazardous materials from any place in a building, including mechanical systems where those mechanical systems are to be removed. This includes the removal of asbestos materials/mold and hazardous materials from ductwork or pipes in a building when the building is to be demolished at the time or at some close future date.

ASBESTOS - MECHANICAL - removal of asbestos material from mechanical systems, such as pipes, ducts, and boilers, where the mechanical systems are to remain.

CERAMIC TILE FINISHER

The grouting, cleaning, and polishing of all classes of tile, whether for interior or exterior purposes, all burned, glazed or unglazed products; all composition materials, granite tiles, warning detectable tiles, cement tiles, epoxy composite materials, pavers, glass, mosaics, fiberglass, and all substitute materials, for tile made in tile-like units; all mixtures in tile like form of cement, metals, and other materials that are for and intended for use as a finished floor surface, stair treads, promenade roofs, walks, walls, ceilings, swimming pools, and all other places where tile is to form a finished interior or exterior. The mixing of all setting mortars including but not limited to thin-set mortars, epoxies, wall mud, and any other sand and cement mixtures or adhesives when used in the preparation, installation, repair, or maintenance of tile and/or similar materials. The handling and unloading of all sand, cement, lime, tile, fixtures, equipment, adhesives, or any other materials to be used in the preparation, installation, repair, or maintenance of tile and/or similar materials. Ceramic Tile Finishers shall fill all joints and voids regardless of method on all tile work, particularly and especially after installation of said tile work. Application of any and all protective coverings to all types of tile installations including, but not be limited to, all soap compounds, paper products, tapes, and all polyethylene coverings, plywood, masonite, cardboard, and any new type of products that may be used to protect tile installations, Blastrac equipment, and all floor scarifying equipment used in preparing floors to receive tile. The clean up and removal of all waste and materials. All demolition of existing tile floors and walls to be re-tiled.

COMMUNICATIONS TECHNICIAN

Construction, installation, maintenance and removal of telecommunication facilities (voice, sound, data and video), telephone, security systems, fire alarm systems that are a component of a multiplex system and share a common cable, and data inside wire, interconnect, terminal equipment, central offices, PABX and equipment, micro waves, V-SAT, bypass, CATV, WAN (wide area network), LAN (local area networks), and ISDN (integrated system digital network), pulling of wire in raceways, but not the installation of raceways.

MARBLE FINISHER

Loading and unloading trucks, distribution of all materials (all stone, sand, etc.), stocking of floors with material, performing all rigging for heavy work, the handling of all material that may be needed for the installation of such materials, building of scaffolding, polishing if needed, patching, waxing of material if damaged, pointing up, caulking, grouting and cleaning of marble, holding water on diamond or Carborundum blade or saw for setters cutting, use of tub saw or any other saw needed for preparation of material, drilling of holes for wires that anchor material set by setters, mixing up of molding plaster for installation of material, mixing up thin set for the installation of material, mixing up of sand to cement for the installation of material and such other work as may be required in helping a Marble Setter in the handling of all material in the erection or installation of interior marble, slate, travertine, art marble, serpentine, alberene stone, blue stone, granite and other stones (meaning as to stone any foreign or domestic materials as are specified and used in building interiors and exteriors and customarily known as stone in the trade), carrara, sanionyx, vitrolite and similar opaque glass and the laying of all marble tile, terrazzo tile, slate tile and precast tile, steps, risers treads, base, or any other materials that may be used as substitutes for any of the aforementioned materials and which are used on interior and exterior which are installed in a similar manner.

MATERIAL TESTER I: Hand coring and drilling for testing of materials; field inspection of uncured concrete and asphalt.

MATERIAL TESTER II: Field inspection of welds, structural steel, fireproofing, masonry, soil, facade, reinforcing steel, formwork, cured concrete, and concrete and asphalt batch plants; adjusting proportions of bituminous mixtures.

OPERATING ENGINEER - BUILDING

Class 1. Asphalt Plant; Asphalt Spreader; Autograde; Backhoes with Caisson Attachment; Batch Plant; Benoto (requires Two Engineers); Boiler and Throttle Valve; Caisson Rigs; Central Redi-Mix Plant; Combination Back Hoe Front End-loader Machine; Compressor and Throttle Valve; Concrete Breaker (Truck Mounted); Concrete Conveyor; Concrete Conveyor (Truck Mounted); Concrete Paver Over 27E cu. ft; Concrete Paver 27E cu. ft. and Under: Concrete Placer; Concrete Placing Boom; Concrete Pump (Truck Mounted); Concrete Tower; Cranes, All; Cranes, Hammerhead; Cranes, (GCI and similar Type); Creter Crane; Spider Crane; Crusher, Stone, etc.; Derricks, All; Derricks, Traveling; Formless Curb and Gutter Machine; Grader, Elevating; Grouting Machines; Heavy Duty Self-Propelled Transporter or Prime Mover; Highlift Shovels or Front Endloader 2-1/4 yd. and over; Hoists, Elevators, outside type rack and pinion and similar machines; Hoists, One, Two and Three Drum; Hoists, Two Tugger One Floor; Hydraulic Backhoes; Hydraulic Boom Trucks; Hydro Vac (and similar equipment); Locomotives, All; Motor Patrol; Lubrication Technician; Manipulators; Pile Drivers and Skid Rig; Post Hole Digger; Pre-Stress Machine; Pump Cretes Dual Ram; Pump Cretes: Squeeze Cretes-Screw Type Pumps; Gypsum Bulker and Pump; Raised and Blind Hole Drill; Roto Mill Grinder; Scoops - Tractor Drawn; Slip-Form Paver; Straddle Buggies; Operation of Tie Back Machine; Tournapull; Tractor with Boom and Side Boom; Trenching Machines.

Class 2. Boilers; Broom, All Power Propelled; Bulldozers; Concrete Mixer (Two Bag and Over); Conveyor, Portable; Forklift Trucks; Highlift Shovels or Front Endloaders under 2-1/4 yd.; Hoists, Automatic; Hoists, Inside Elevators; Hoists, Sewer Dragging Machine; Hoists, Tugger Single Drum;

Laser Screed; Rock Drill (Self-Propelled); Rock Drill (Truck Mounted); Rollers, All; Steam Generators; Tractors, All; Tractor Drawn Vibratory Roller; Winch Trucks with "A" Frame.

Class 3. Air Compressor; Combination Small Equipment Operator; Generators; Heaters, Mechanical; Hoists, Inside Elevators (remodeling or renovation work); Hydraulic Power Units (Pile Driving, Extracting, and Drilling); Pumps, over 3" (1 to 3 not to exceed a total of 300 ft.); Low Boys; Pumps, Well Points; Welding Machines (2 through 5); Winches, 4 Small Electric Drill Winches.

Class 4. Bobcats and/or other Skid Steer Loaders; Oilers; and Brick Forklift.

Class 5. Assistant Craft Foreman.

Class 6. Gradall.

Class 7. Mechanics; Welders.

OPERATING ENGINEERS - HIGHWAY CONSTRUCTION

Class 1. Asphalt Plant; Asphalt Heater and Planer Combination; Asphalt Heater Scarfire; Asphalt Spreader; Autograder/GOMACO or other similar type machines: ABG Paver; Backhoes with Caisson Attachment; Ballast Regulator; Belt Loader; Caisson Rigs; Car Dumper; Central Redi-Mix Plant; Combination Backhoe Front Endloader Machine, (1 cu. yd. Backhoe Bucket or over or with attachments); Concrete Breaker (Truck Mounted); Concrete Conveyor; Concrete Paver over 27E cu. ft.; Concrete Placer; Concrete Tube Float; Cranes, all attachments; Cranes, Tower Cranes of all types: Creter Crane: Spider Crane; Crusher, Stone, etc.; Derricks, All; Derrick Boats; Derricks, Traveling; Dredges; Elevators, Outside type Rack & Pinion and Similar Machines; Formless Curb and Gutter Machine; Grader, Elevating; Grader, Motor Grader, Motor Patrol, Auto Patrol, Form Grader, Pull Grader, Subgrader; Guard Rail Post Driver Truck Mounted; Hoists, One, Two and Three Drum; Heavy Duty Self-Propelled Transporter or Prime Mover; Hydraulic Backhoes; Backhoes with shear attachments up to 40' of boom reach; Lubrication Technician; Manipulators; Mucking Machine; Pile Drivers and Skid Rig; Pre-Stress Machine; Pump Cretes Dual Ram; Rock Drill - Crawler or Skid Rig; Rock Drill - Truck Mounted; Rock/Track Tamper; Roto Mill Grinder; Slip-Form Paver; Snow Melters; Soil Test Drill Rig (Truck Mounted); Straddle Buggies; Hydraulic Telescoping Form (Tunnel); Operation of Tieback Machine; Tractor Drawn Belt Loader; Tractor Drawn Belt Loader (with attached pusher - two engineers); Tractor with Boom; Tractaire with Attachments; Traffic Barrier Transfer Machine; Trenching; Truck Mounted Concrete Pump with Boom; Raised or Blind Hole Drills (Tunnel Shaft); Underground Boring and/or Mining Machines 5 ft. in diameter and over tunnel, etc; Underground Boring and/or Mining Machines under 5 ft. in diameter; Wheel Excavator; Widener (APSCO).

Class 2. Batch Plant; Bituminous Mixer; Boiler and Throttle Valve; Bulldozers; Car Loader Trailing Conveyors; Combination Backhoe Front Endloader Machine (Less than 1 cu. yd. Backhoe Bucket or over or with attachments); Compressor and Throttle Valve; Compressor, Common Receiver (3); Concrete Breaker or Hydro Hammer; Concrete Grinding Machine; Concrete Mixer or Paver 7S Series to and including 27 cu. ft.;

Concrete Spreader; Concrete Curing Machine, Burlap Machine, Belting Machine and Sealing Machine; Concrete Wheel Saw; Conveyor Muck Cars (Haglund or Similar Type); Drills, All; Finishing Machine - Concrete; Highlift Shovels or Front Endloader; Hoist - Sewer Dragging Machine; Hydraulic Boom Trucks (All Attachments); Hydro-Blaster; Hydro Excavating (excluding hose work); Laser Screed; All Locomotives, Dinky; Off-Road Hauling Units (including articulating) Non Self-Loading Ejection Dump; Pump Cretes: Squeeze Cretes - Screw Type Pumps, Gypsum Bulker and Pump; Roller, Asphalt; Rotary Snow Plows; Rototiller, Seaman, etc., self-propelled; Self-Propelled Compactor; Spreader - Chip - Stone, etc.; Scraper - Single/Twin Engine/Push and Pull; Scraper - Prime Mover in Tandem (Regardless of Size); Tractors pulling attachments, Sheeps Foot, Disc, Compactor, etc.; Tug Boats.

Class 3. Boilers; Brooms, All Power Propelled; Cement Supply Tender; Compressor, Common Receiver (2); Concrete Mixer (Two Bag and Over); Conveyor, Portable; Farm-Type Tractors Used for Mowing, Seeding, etc.; Forklift Trucks; Grouting Machine; Hoists, Automatic; Hoists, All Elevators; Hoists, Tugger Single Drum; Jeep Diggers; Low Boys; Pipe Jacking Machines; Post-Hole Digger; Power Saw, Concrete Power Driven; Pug Mills; Rollers, other than Asphalt; Seed and Straw Blower; Steam Generators; Stump Machine; Winch Trucks with "A" Frame; Work Boats; Tamper-Form-Motor Driven.

Class 4. Air Compressor; Combination - Small Equipment Operator; Directional Boring Machine; Generators; Heaters, Mechanical; Hydraulic Power Unit (Pile Driving, Extracting, or Drilling); Light Plants, All (1 through 5); Pumps, over 3" (1 to 3 not to exceed a total of 300 ft.); Pumps, Well Points; Vacuum Trucks (excluding hose work); Welding Machines (2 through 5); Winches, 4 Small Electric Drill Winches.

Class 5. SkidSteer Loader (all); Brick Forklifts; Oilers.

Class 6. Field Mechanics and Field Welders

Class 7. Dowell Machine with Air Compressor; Gradall and machines of like nature.

OPERATING ENGINEERS - FLOATING

Diver. Diver Wet Tender, Diver Tender, ROV Pilot, ROV Tender

TRAFFIC SAFETY - work associated with barricades, horses and drums used to reduce lane usage on highway work, the installation and removal of temporary lane markings, and the installation and removal of temporary road signs.

TRUCK DRIVER - BUILDING, HEAVY AND HIGHWAY CONSTRUCTION Class 1. Two or three Axle Trucks. A-frame Truck when used for transportation purposes; Air Compressors and Welding Machines, including those pulled by cars, pick-up trucks and tractors; Ambulances; Batch Gate Lockers; Batch Hopperman; Car and Truck Washers; Carry-alls; Fork Lifts and Hoisters; Helpers; Mechanics Helpers and Greasers; Oil Distributors 2-man operation; Pavement Breakers; Pole Trailer, up to 40 feet; Power Mower Tractors; Self-propelled Chip Spreader; Skipman;

Slurry Trucks, 2-man operation; Slurry Truck Conveyor Operation, 2 or 3 man; Teamsters; Unskilled Dumpman; and Truck Drivers hauling warning lights, barricades, and portable toilets on the job site.

Class 2. Four axle trucks; Dump Crets and Adgetors under 7 yards; Dumpsters, Track Trucks, Euclids, Hug Bottom Dump Turnapulls or Turnatrailers when pulling other than self-loading equipment or similar equipment under 16 cubic yards; Mixer Trucks under 7 yards; Ready-mix Plant Hopper Operator, and Winch Trucks, 2 Axles.

Class 3. Five axle trucks; Dump Crets and Adgetors 7 yards and over; Dumpsters, Track Trucks, Euclids, Hug Bottom Dump Turnatrailers or turnapulls when pulling other than self-loading equipment or similar equipment over 16 cubic yards; Explosives and/or Fission Material Trucks; Mixer Trucks 7 yards or over; Mobile Cranes while in transit; Oil Distributors, 1-man operation; Pole Trailer, over 40 feet; Pole and Expandable Trailers hauling material over 50 feet long; Slurry trucks, 1-man operation; Winch trucks, 3 axles or more; Mechanic--Truck Welder and Truck Painter.

Class 4. Six axle trucks; Dual-purpose vehicles, such as mounted crane trucks with hoist and accessories; Foreman; Master Mechanic; Self-loading equipment like P.B. and trucks with scoops on the front.

TERRAZZO FINISHER

The handling of sand, cement, marble chips, and all other materials that may be used by the Mosaic Terrazzo Mechanic, and the mixing, grinding, grouting, cleaning and sealing of all Marble, Mosaic, and Terrazzo work, floors, base, stairs, and wainscoting by hand or machine, and in addition, assisting and aiding Marble, Masonic, and Terrazzo Mechanics.

Other Classifications of Work:

For definitions of classifications not otherwise set out, the Department generally has on file such definitions which are available. If a task to be performed is not subject to one of the classifications of pay set out, the Department will upon being contacted state which neighboring county has such a classification and provide such rate, such rate being deemed to exist by reference in this document. If no neighboring county rate applies to the task, the Department shall undertake a special determination, such special determination being then deemed to have existed under this determination. If a project requires these, or any classification not listed, please contact IDOL at 217-782-1710 for wage rates or clarifications.

LANDSCAPING

Landscaping work falls under the existing classifications for laborer, operating engineer and truck driver. The work performed by landscape plantsman and landscape laborer is covered by the existing classification of laborer. The work performed by landscape operators (regardless of equipment used or its size) is covered by the classifications of operating engineer. The work performed by landscape truck drivers (regardless of size of truck driven) is covered by the classifications of truck driver.

MATERIAL TESTER & MATERIAL TESTER/INSPECTOR I AND II

Notwithstanding the difference in the classification title, the classification entitled "Material Tester I" involves the same job duties as the classification entitled "Material Tester/Inspector I". Likewise, the classification entitled "Material Tester II" involves the same job duties as the classification entitled "Material Tester/Inspector II".

Illinois Environmental Protection Agency

Bureau of Land • 1021 North Grand Avenue East • P.O. Box 19276 • Springfield • Illinois • 62794-9276

Uncontaminated Soil Certification by Licensed Professional Engineer or Licensed Professional Geologist for Use of Uncontaminated Soil as Fill in a CCDD or Uncontaminated Soil Fill Operation LPC-663 Revised in accordance with 35 Ill. Adm. Code 1100, as amended by PCB R2012-009 (eff. Aug. 27, 2012)

This certification form is to be used by professional engineers and professional geologists to certify, pursuant to 35 Ill. Adm. Code 1100.205(a)(1)(B), that soil (i) is uncontaminated soil and (ii) is within a pH range of 6.26 to 9.0. If you have questions about this form, please telephone the Bureau of Land Permit Section at 217/524-3300.

This form may be completed online, saved locally, printed and signed, and submitted to prospective clean construction or demolition debris (CCDD) fill operations or uncontaminated soil fill operations.

I. Source Location Information

(Describe the location of the source of the uncontaminated soil)

Project Name: John Deutsch Drive Office Phone Number, if available: N/A

Physical Site Location (address, inclduding number and street):

John Deutsch Drive (Entrance to St. Charles Public Works Building) off S. 7th Avenue

City: St. Charles State: IL Zip Code: 60174

County: Kane Township: St. Charles

Lat/Long of approximate center of site in decimal degrees (DD.ddddd) to five decimal places (e.g., 40.67890, -90.12345):

Latitude: 41.90559 (Decimal Degrees) Longitude: -88.29985 (-Decimal Degrees)

Identify how the lat/long data were determined:

☐ GPS ☒ Map Interpolation ☐ Photo Interpolation ☐ Survey ☐ Other

IEPA Site Number(s), if assigned: BOL: BOW: BOA:

II. Owner/Operator Information for Source Site

Site Owner		Site Operator	
Name:	City of St. Charles	Name:	
Street Address:	2 East Main Street	Street Address:	
PO Box:		PO Box:	
City:	St. Charles State: IL	City:	State:
Zip Code:	60174 Phone: 630-377-4486	Zip Code:	Phone:
Contact:	Ken Jay	Contact:	
Email, if available:	kjay@stcharlesil.gov	Email, if available:	

Project Name: John Deutsch Drive

Latitude: 41.90559 Longitude: -88.29985

Uncontaminated Site Certification

III. Basis for Certification and Attachments

For each item listed below, reference the attachments to this form that provide the required information.

a. A Description of the soil sample points and how they were determined to be sufficient in number and appropriately located 35 Ill. Adm. Code 1100.610(a)]:

A geoprobe boring was performed along the alignment at the southeast corner of existing culvert, reference attached Google Earth Location Map. Samples were screened in the field and a discrete sample was selected for analytical testing.

b. Analytical soil testing results to show that soil chemical constituents comply with the maximum allowable concentrations established pursuant to 35 Ill. Adm. Code Part 1100, Subpart F and that the soil pH is within the range of 6.25 to 9.0, including the documentation of chain of custody control, a copy of the lab analysis; the accreditation status of the laboratory performing the analysis; and certification by an authorized agent of the laboratory that the analysis has been performed in accordance with the Agency's rules for the accreditation of environmental and the scope of the accreditation [35 Ill. Adm. Code 1100.201(g), 1100.205(a), 1100.610]:

See First Environmental Laboratories Report dated 2/19/18.

IV. Certification Statement, Signature and Seal of Licensed Professional Engineer or Licensed Professional Geologist

I, Michael H. Prigge (name of licensed professional engineer or geologist) certify under penalty of law that the information submitted, including but not limited to, all attachments and other information, is to the best of my knowledge and belief, true, accurate and complete. In accordance with the Environmental Protection Act [415 ILCS 5/22.51 or 22.51a] and 35 Ill. Adm. Code 1100.205(a), I certify that the soil from this site is uncontaminated soil. I also certify that the soil pH is within the range of 6.25 to 9.0. In addition, I certify that the soil has not been removed from the site as part of a cleanup or removal of contaminants. All necessary documentation is attached.

Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS 5/44(h))

Company Name: Midland Standard Engineering & Testing, Inc.

Street Address: 558 Plate Drive, Unit 6

City: East Dundee State: IL Zip Code: 60118

Phone: 847-844-1895

Michael H. Prigge
Printed Name:

Licensed Professional Engineer or
Licensed Professional Geologist Signature:

2/19/2018
Date:

MICHAEL H. PRIGGE
062-066611
LICENSED
PROFESSIONAL
ENGINEER
STATE OF ILLINOIS

P.E. or L.P.G. Seal:

MSET

WWW.MSETINC.COM

MIDLAND STANDARD ENGINEERING & TESTING, INC.

558 Plate Drive, Unit 6 East Dundee, Illinois 60118

(847) 844-1895 f(847) 844-3875

September 11, 2017

Mr. Jason Whyte, P.E.
HR Green, Inc.
420 N. Front Street
McHenry, Illinois 60050

Re: PRELIMINARY - Soil Exploration and Analysis
7th Avenue Creek Project
St. Charles, Illinois
MSET File No. 17412

Dear Mr. Whyte:

Midland Standard Engineering & Testing, Inc. (MSET) has conducted a subsurface exploration and laboratory analysis for the above referenced project.

Scope and Purpose

The purpose of this exploration and analysis was to determine the various soil profile components, the engineering characteristics of the materials, and to provide criteria for use by the design engineers in preparing project plans for the replacement of twelve (12) existing culverts. This report does not address environmental issues at the site. The scope of this exploration included a geological reconnaissance of the site, subsurface exploration, soil testing, and an engineering analysis and evaluation of the material encountered.

General

The exploration and analysis of the foundation and subgrade conditions reported herein are considered in sufficient detail and scope to form a reasonable basis for preliminary design. This report has been prepared for the exclusive use and specific application to the proposed project.

The recommendations submitted are based on the available soil information and the preliminary site plans furnished to us. Any revision in the plans for the proposed structures from those enumerated in this report should be brought to the attention of the Soils Engineer so that he may determine if changes in the recommendations are required. If deviations from the noted subsurface conditions are encountered during construction, they should also be brought to the attention of the Soils Engineer.

The Soils Engineer warrants that the findings, recommendations, specifications or professional advice contained herein have been promulgated after being prepared in accordance with generally accepted professional engineering practice in the fields of foundation engineering, soil mechanics and engineering geology. No other warranties are implied or expressed.

After the plans are more complete, it is recommended the Soils Engineer be provided the opportunity to review the final design and specifications, in order that the soil recommendations may be properly interpreted and implemented. At that time, it may be necessary to submit supplementary recommendations.

FIELD EXPLORATION

General

Our exploration program consisted of making a structure boring, labeled SB-12, at the site to a depth of twenty (20) to twenty-five (25) feet below the existing ground surface. A MSET field crew staked the boring locations at the site. The ground surface elevations at the boring locations were determined relative to various benchmarks provided by the design engineer. Reference the attached Boring Location Maps for details of the boring locations relative to the existing structures.

Drilling Equipment

The soil brings were drilled using a drill rig equipped with a rotary head. The holes were advanced using hollow stem augers. The drill rig was equipped with an automatic drop hammer for standard penetration testing.

Sampling and Standard Penetration Test Procedures

Representative samples were obtained by the use of split-spoon sampling procedures in accordance with A.S.T.M. Procedure D-1586.

During the split-spoon sampling procedures, a standard penetration test was performed in accordance with current A.S.T.M. D-1586 Procedures. At sampling intervals, advancement of the boring was stopped and all loose material removed from the borehole. The sampler was than lowered into the hole and seated in undisturbed soil by pushing or tapping, taking suitable precautions that the rods were reasonably tight. The sampling spoon was then advanced by driving with an automatic drop hammer. During the sampling procedure, the standard penetration value (N) of the soil was determined. The standard penetration value (N) is defined as the number of blows of a one hundred-forty pound (140 lb) hammer required to advance the spoon sampler one foot (12") into the soil.

The results of the standard penetration tests indicate the relative density and comparative consistency of the soils and thereby provide a basis for estimating the relative strength and compressibility of the soil profile components. The results of standard penetration tests can be found on the boring logs, which are attached.

Strength Tests

During the field borings operations, samples of the predominately cohesive soil from the split-spoon sampling device were tested using a calibrated soil penetrometer to aid in determining the strength of the soil. Consideration must be given to the manner in which the values of the unconfined compressive strengths were obtained. Split-spoon sampling techniques provided a representative, but somewhat disturbed, soil sample.

Water Level Measurements

Water level observations were made during and after the boring operations and are noted on the boring logs presented herewith. In relatively previous soils, such as sandy soils, the indicated elevations are considered reliable groundwater levels. In relatively impervious soils, the accurate determination of the groundwater elevation may not be possible, even after several days of observation. Seasonal variations, temperatures, and recent rainfall conditions may influence the levels of the groundwater table, and volumes of water depend on the permeability of the soils.

LABORATORY TESTING

Scope

A supplemental laboratory-testing program was conducted to ascertain the pertinent engineering characteristics for the subsurface materials necessary in analyzing the behavior of the proposed construction. The soils laboratory work was preformed in accordance with applicable A.S.T.M. standards.

The laboratory-testing program included visual classification and moisture content determinations on all split-spoon samples. All cohesive soil samples obtained from the split-spoon were also tested for unconfined compressive strength (Qu). The results of this laboratory testing are presented on the attached boring logs.

JOHN DUETSCH CULVERT

Project and Site Description

The proposed culvert replacement is located along John Duetsch Drive, which provides access to the St. Charles Public Works building. The existing crossing is comprised of corrugated metal pipe culverts with concrete wing walls. Plans include removing the existing culvert and replacing with a dual box culvert. The invert elevation for the culvert has not been determined at the time of our analysis. The invert will either be located to match the flow line at 699.2 or at 698.2 for a 1-foot sump option.

Subsurface Conditions

The soil profile at boring SB-12, located at the southeast corner of the existing culvert, encountered FILL materials to a depth of 8-1/2 feet below the existing ground surface elevation. The fill materials were comprised of Brown and Black Clayey SAND to Sandy CLAY (SC). The fill soils were slightly dense to medium dense with standard penetration values (N) of 6 to 17 blows per foot and moisture contents of 11 to 22 percent.

Below the upper fill soils, black CLAY (CL to CH), likely buried topsoil was encountered to a depth of 11 feet. The buried topsoil was firm in consistency with strengths (Qp) of 0.75 tons per square foot and moisture content of 27 percent.

Below the buried topsoil, brown and grey SAND (SP) was encountered to a depth of 18 feet. The granular soils were medium dense with standard penetration values (N) of 11 to 14 blows per foot and moisture contents of 7 to 10 percent.

Below the granular soils, a thin layer of grey Silty CLAY (CL) was encountered to a depth of 19-1/2 feet. The clay soils were very stiff with unconfined compressive strengths (Qu) of 3.26 tons per square foot and moisture contents of 15 percent.

Below the natural clay layer, dark grey Silty CLAY to Clayey SILT (CL-ML) was encountered for the remainder of the boring depth. The silty soils were medium dense to very dense with standard penetration values (N) of 16 to 57 blows per foot. Refusal was encountered on possible bedrock at a depth of 23-1/2 feet. Details of the soil conditions encountered at the boring locations are presented on the attached boring logs.

Groundwater Conditions

Groundwater measurements were made during and immediately after the drilling operations were complete. Groundwater was encountered during the drilling operations at a depth of 13.5 feet at elevation 700±. The groundwater elevation was encountered in the granular soil layers and is likely tied to the water level in the creek.

Site Elevations

Ground surface elevations were determined relative to the invert elevation of the existing culvert, using a known elevation of 699.70. The following elevations were used for this analysis:

Centerline of Road	716.0
SB-12 (Ground Surface Elevation)	713.8
Invert of Culvert	698.2 to 699.2
Bottom of Culvert Slab	697.2 to 698.2
Bottom of Toe Wall	696.2

Culvert Pipe Subgrade and Footing Recommendations

The new culvert is planned to consist of a dual box culvert. The bottom of slab will be 1 foot thick and sit at an elevation of 697.2 to 698.2. The bottom of the culvert is anticipated in the natural medium dense SAND (SP) encountered at that level at the boring location.

Culvert support should be developed by providing a minimum of eight (8) inches of IDOT CA-07, PGE, or CA-01 bedding layer to stabilize and support the culvert pipe or precast sections. A toe-wall should be placed at the ends of the culvert a minimum of two (2) feet below the bottom of the culvert, and below the future scour level to prevent soil or granular material from being washed out from below the culvert.

If cast-in-place concrete headwalls or wing walls are utilized that require footings, they should be located at frost depth below the creek channel and below future scour depth. Footing should be founded in the natural granular or clay soils encountered at the boring location. A net allowable soil bearing pressure of **3,000 pounds per square foot (ASD Design)** or **4,500 pounds per square foot (LRFD Design)** may be used to dimension footings.

Lateral Earth Pressures

The proposed structure consists of a dual box culvert with the top of the walls restricted from deflection. Because of this design an at-rest earth pressure analysis for the sidewall is appropriate. A sidewall equivalent fluid pressure of 65 pounds per square foot per foot depth for the long-term analysis without hydrostatic pressure (designed with a drainage system) should be used. These parameters are based on the soil properties for granular structural backfill with a moist unit weight of 120 pcf and a minimum effective shear strength of $\emptyset = 30°$.

For the wing walls, an active earth pressure of 47 pounds per square foot per foot depth/equivalent fluid pressure can be used for design analysis in all cases where drained conditions are provided behind the walls to prevent the accumulation of hydrostatic pressures. It is emphasized that these active pressures assume that the wall is allowed to yield, enough to allow an active pressure state to develop. Additionally the effects of traffic loading, surcharge loads, and the effect of sloping ground behind the wall, should be added to both of the earth pressure loadings given above.

Considering the subgrade treatment, a friction factor (Tan d) = 0.4 between the soil and the base of wall should be used, and a minimum sliding stability factor of safety of 1.5 should be provided.

GENERAL DESIGN & CONSTRUCTION CONSIDERATIONS

Scour and Erosion Control

The structure should be designed in accordance with IDOT Design Memorandum ABD 14.2, Revised Scour Design Policy. A toe slab or cut–off wall is typically utilized in the design. In general, a box culvert shall be fitted with integral concrete headwalls to retain rip-rap slopes and prevent riprap from dropping or eroding into the water way and with inlet and outlet cutoff walls that extend below the maximum scour. The slopes should be armored with a layer of riprap as provided in the plans and in accordance with Section 281 of the Standard Specifications. The riprap should be underlain by an erosion control fabric and a one-foot layer of bedding material. The toe of the riprap slopes should extend one-foot below the streambed elevation. The riprap slopes should be constructed in accordance with Section 281 and be no steeper than 1.75H:1V.

Structure Backfill

All structure elements should be backfilled in accordance with Article 502.10 'Backfilling', in Excavation for Structures Section 502 of the Standard Specifications for Road and Bridge Construction.

Wing Wall Backfill and Drainage

To reduce the amount of additional pressure applied to the wall by high groundwater, swelling of backfill soils, and in cold climates, the formation of ice lenses behind the wall, proper drainage of the backfill is essential. Free draining granular soil with a silt and clay content of less than 6 percent, such as IDOT Porous Granular Backfill, Section 209 of the "Standard Specification for Road and Bridge Construction" or IDOT CA-7 gradation is recommended for the drainage layer behind the wall. The drainage layer should extend a minimum of two (2) feet out from the back of the wall, and an outlet for water should be provided at the base of the back fill in the form of properly spaced weep holes through the wall or a perforated, continuous drain pipe. The remainder of the backfill can be well-graded aggregate, such as IDOT CA-6, compactable sand, or suitable embankment fill. All materials and installation procedure should be in accordance with Section 502 of the Standard Specification for Road and bridge construction.

The drainage layer and the backfill should be placed in uniform 10" lifts and compacted to the satisfaction of the geotechnical engineer. The backfill should be compacted with appropriate sized equipment so that the wall is not damaged or moved.

Excavations and Water Control During Construction

The excavations for the proposed construction are expected to extend below the water level and into saturated soil. The conditions are such that water will flow quickly into the excavations. Measures to control and channel water flow during construction will be required, such as temporarily re-routing the flow using sheet piles, and working on one side at a time, utilizing pumps, or a combination of these procedures. Therefore, the contractor should be prepared to control/reroute the creek water during construction.

The integrity of exposed bearing soil should be protected from loosening and disturbance from ground water and creek water flow. This can be accomplished by placing a mud mat, 3 inches thick, of lean concrete or by installing an 8-inch thick layer of open graded aggregate, such as crushed IDOT CA-07 or PGE. The subgrade soil protection layer should be placed soon after excavation and approval of bearing soil.

Excavation and Trench Support

Soil and ground water conditions are such that open cut excavations cannot be counted on to stand vertical throughout the construction phase and may require sloping back or bracing of the sidewalls. Please note that OSHA and local codes require the use of shoring and bracing in the excavations during foundation and utility installation, the contractor should be well versed in these requirements.

Protection of Adjacent Utilities and Roadways

Excavations extending below any existing utility components and the adjacent roadway may cause future settlement problems if not protected. Procedures for the protection of any existing utilities and roadway should be reviewed and presented to the supervising engineer, prior to the start of work.

Closure

The recommendations presented herein are based on the information available at the time of this writing. Planned grades for the remaining eleven (11) culverts have not been provided at this time. When information becomes available a final report can be provided.

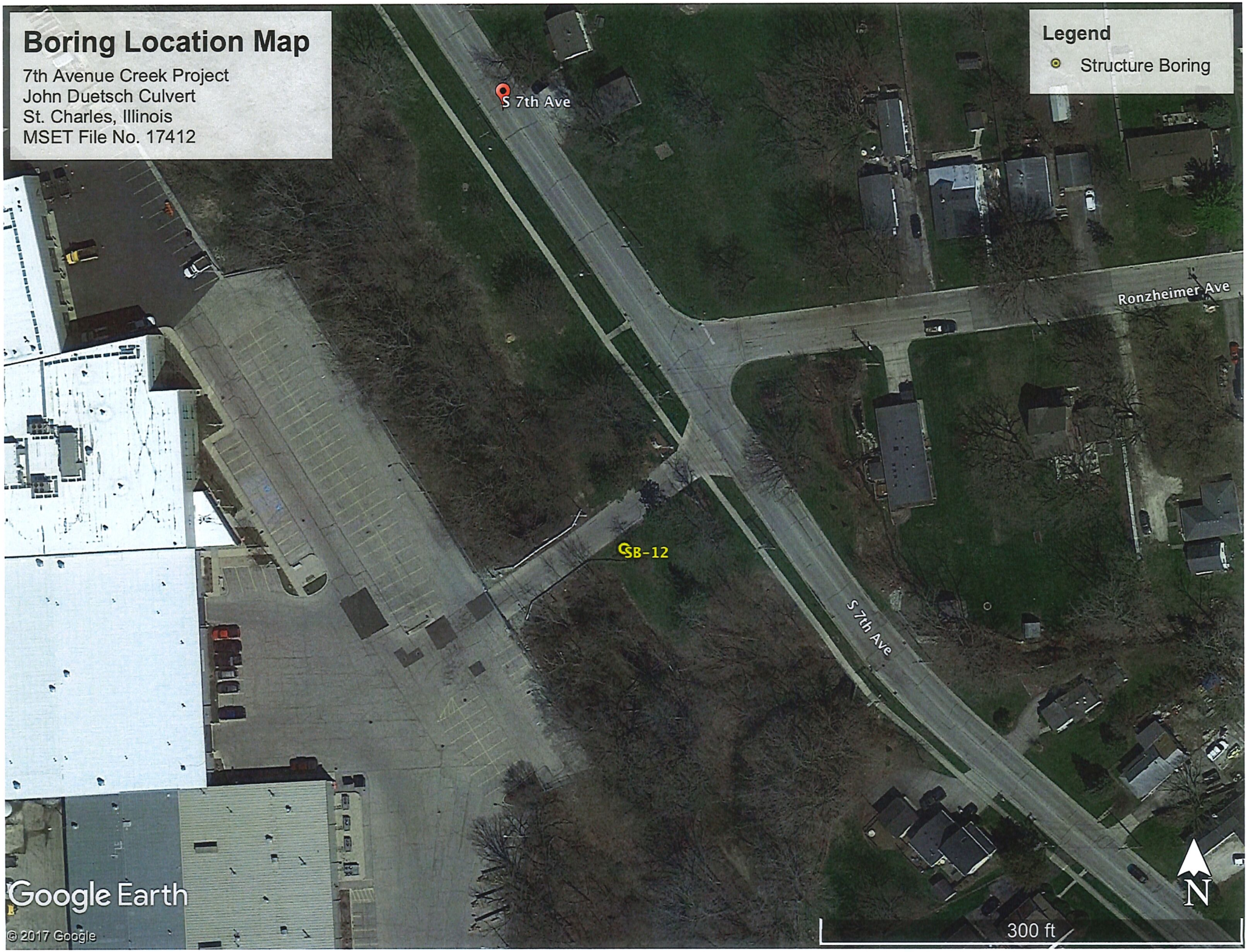
Thank you for the opportunity to provide our services to you on this project. If you have any questions or require further analysis, do not hesitate to contact us.

Sincerely,
MIDLAND STANDARD ENGINEERING & TESTING, INC.

MHP

Michael H. Prigge, P. E.
Project Engineer

Attachments: Boring Location Diagram
Boring Logs (SB-12)
General Notes


Boring Location Map
7th Avenue Creek Project
John Duetsch Culvert
St. Charles, Illinois
MSET File No. 17412
Legend
Structure Boring
S 7th Ave
Ronzheimer Ave
SB-12
S 7th Ave
Google Earth
© 2017 Google
N
300 ft

MSET PROJECT NO.: 17412	LOG OF BORING NO. SB-12	Page 1 of 1

PROJECT: 7th Avenue Creek Additional

SITE LOCATION: St. Charles, Illinois

BORING LOCATION: SEC of Existing Culvert

CLIENT: HR Green

DEPTH (feet)	SOIL TYPE	Material Description	Elevation	SAMPLE TYPE/ INTERVAL	SAMPLE NO.	SAMPLE N-VALUE Blows per ft.	TESTS Wc%	TESTS Dry Unit Weight, pcf	TESTS Unconfined Compressive Strength, tsf	REMARKS
0		TOPSOIL - Black CLAY (5")	713.8							
		FILL - Brown to Black Clayey SAND to Sandy CLAY, some Gravel, trace RAP, SC	713.4	SS	1	17	14		--	
4				SS	2	8	11		2.25 Qp	
				SS	3	6	22		--	
8		Black and Dark Grey CLAY, CL-CH	705.3	SS	4	3	27			
		Brown and Grey SAND (f-c), some Gravel, SP, medium dense	702.8	SS	5	14	7		--	
12		wet at 13.5'		SS	6	11	10		--	
16				SS	7	13	10		--	
		Grey Silty CLAY, little Sand, trace Gravel, CL, very stiff	695.8	SS	8A	10	15		3.26	
				SS	8B	16	34			
20		Dark Grey, trace Black Silty CLAY to Clayey SILT, CL-ML	694.3							
		Dark Grey, trace Black Silty CLAY, little Sand, trace Gravel, CL, very stiff	693.3	SS	9	57/ 10"	26	88	2.95	
		Auger / Spoon Refusal at 23.5'	690.3	SS	10	50/ 0"				

WATER LEVEL OBSERVATIONS, ft.
DURING DRILLING: 13.5'
IMMEDIATELY AFTER DRILLING: 13.6'
DELAYED READING AFTER

MSET

BORING STARTED: 7/12/17
BORING COMPLETED: 7/12/17
LOGGED BY: GPF
BORING METHOD: H.S.A.

GENERAL NOTES

PARTICLE SIZE DESCRIPTION & TERMINOLOGY

Coarse Grained or Granular 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 or clayey silts if they are cohesive and silts if they are non-cohesive. In addition to gradation, granular soils are defined on the basis of their relative in-place density and the fine grained soils on the basis of their strength or consistency and their plasticity.

Major Component of Sample	Size Range
Boulders	Over 8 in. (200 mm)
Cobbles	8 inches to 3 inches (200 mm to 75mm)
Gravel	3 inches to #4 sieve (75mm to 4.75mm)
Sand	#4 to #200 sieve (4.75mm to 0.075mm)
Silt	Passing #200 sieve (0.075mm to 0.002mm)
Clay	Smaller than 0.002mm

Descriptive Term of Components Also Present in Sample	Approximate Quantity (Percent)
Trace	1 - 9
Little	10 - 19
Some	20 - 34
And	35 - 50

RELATIVE DENSITY AND CONSISTENCY CLASSIFICATION

GRANULAR SOILS

DENSITY CLASSIFICATION	APPROXIMATE RANGE OF N *
Very Loose	0 - 3
Slightly Dense	4 - 9
Medium Dense	10 - 29
Dense	30 - 49
Very Dense	50 - 80
Extremely Dense	80 +

COHESIVE SOILS

CONSISTENCY	UNCONFINED COMPRESSIVE STRENGTH, Qu - TSF	APPROXIMATE RANGE OF N *
Very Soft	0.25	0 - 2
Soft	0.25 - 0.49	3 - 4
Firm	0.50 - 0.99	5 - 8
Stiff	1.00 - 1.99	9 - 15
Very Stiff	2.00 - 3.99	16 - 30
Hard	4.00 - 8.00	31 - 50
Very Hard	8.00 +	Over 50

* STANDARD PENETRATION TEST (ASTM D1586) - A 2.0" outside-diameter, split barrel sampler is driven into undisturbed soil by means of a 140 pound weight falling freely through a vertical distance of 30 inches. The sampler is normally driven 3 successive 6 inch increments. The total number of blows required for the final 12 inches of penetration is the Standard Penetration Resistance (N).

DEPARTMENT OF THE ARMY
CHICAGO DISTRICT, CORPS OF ENGINEERS
231 SOUTH LASALLE STREET
CHICAGO, ILLINOIS 60604-1437

REPLY TO
ATTENTION OF:

March 6, 2018

Technical Services Division
Regulatory Branch
LRC-2018-104

SUBJECT: Permit Verification for the Proposed 7th Avenue Creek Culvert Replacements at 7th Avenue and at John Deutsch, Located along 7th Avenue, St. Charles, Kane County, Illinois (Latitude 41.9056, Longitude -88.29984) (W ½ of Section 35, T40N R8E)

Karen Young
City of St. Charles
2 E. Main Street
St. Charles, Illinois 60174

Dear Ms. Young:

This office has verified that your proposed activity complies with the terms and conditions of Regional Permits 3(Transportation Projects), 7 (Temporary Construction Activities), and 9 (Maintenance) and the General Conditions for all activities authorized under the Regional Permit Program.

This verification expires three (3) years from the date of this letter and covers only your activity as described in your notification and as shown on the plans titled, "Final Engineering Plans For: 7th Avenue Creek, Drainage Improvements, At John Deutsch Culvert, City of St. Charles, Illinois, Kane County, Illinois" dated January 18, 2018, prepared by HRGreen. Caution must be taken to prevent construction materials and activities from impacting waters of the United States beyond the scope of this authorization. If you anticipate changing the design or location of the activity, you should contact this office to determine the need for further authorization.

The activity may be completed without further authorization from this office provided the activity is conducted in compliance with the terms and conditions of the RPP, including conditions of water quality certification issued under Section 401 of the Clean Water Act by the Illinois Environmental Protection Agency (IEPA). If the design, location, or purpose of the project is changed, you should contact this office to determine the need for further authorization.

The following special conditions are a requirement of your authorization:

1. You shall undertake and complete the project as described in the plans titled, "Final Engineering Plans For: 7th Avenue Creek, Drainage Improvements, At John Deutsch Culvert, City of St. Charles, Illinois, Kane County, Illinois" dated January 18, 2018,

prepared by HRGreen, including all relevant documentation to the project plans as proposed.

2. To avoid potential impacts to the northern long-eared bat (Myotis septentrionalis), tree clearing (trees 3" DBH or greater) shall only occur between August 1 and May 31 of any construction year.

3. This authorization is contingent upon implementing and maintaining soil erosion and sediment controls in a serviceable condition throughout the duration of the project. You shall comply with the Kane/DuPage Soil and Water Conservation District's (SWCD) written and verbal recommendations regarding the soil erosion and sediment control (SESC) plan and the installation and maintenance requirements of the SESC practices on-site.

    a. You shall schedule a preconstruction meeting with the SWCD to discuss the SESC plan and the installation and maintenance requirements of the SESC practices on the site. You shall contact the SWCD at least 10 calendar days prior to the preconstruction meeting so that a representative may attend.
    b. You shall notify the SWCD of any changes or modifications to the approved plan set. Field conditions during project construction may require the implementation of additional SESC measures. If you fail to implement corrective measures, this office may require more frequent site inspections to ensure the installed SESC measures are acceptable.
    c. Prior to commencement of any in-stream work, you shall submit constructions plans and a detailed narrative to the SWCD that disclose the contractor's preferred method of cofferdam and dewatering method. Work in the waterway shall NOT commence until the SWCD notifies you, in writing, that the plans have been approved.

4. Under no circumstances shall the Contractor prolong final grading and shaping so that the entire project can be permanently seeded at one time. Permanent stabilization within the wetland and stream buffers identified in the plans shall be initiated immediately following the completion of work. Final stabilization of these areas should not be delayed due to utility work to be performed by others.

5. You shall provide written notification to this office and to the SWCD at least ten (10) days prior to the commencement of work indicating the start date and estimated end date of construction.

6. This site is within the aboriginal homelands of several American Indian Tribes. If any human remains, Native American cultural items or archaeological evidence are discovered during any phase of this project, interested Tribes request immediate consultation with the entity of jurisdiction for the location of discovery. In such case, please contact Ms. Kimberly Kubiak by telephone at (312) 846-5541, or email at kimberly.j.kubiak@usace.army.mil.

7. You are responsible for all work authorized herein and for ensuring that all contractors are aware of the terms and conditions of this authorization.

8. A copy of this authorization must be present at the project site during all phases of construction.

9. You shall notify this office of any proposed modifications to the project, including revisions to any of the plans or documents cited in this authorization. You must receive approval from this office before work affected by the proposed modification is performed.

10. You shall notify this office prior to the transfer of this authorization and liabilities associated with compliance with its terms and conditions.

11. Work in the waterway should be timed to take place during low or no-flow conditions. Low flow conditions are flow at or below the normal water elevation.

12. The plan will be designed to allow for the conveyance of the 2-year peak flow past the work area without overtopping the cofferdam. The Corps has the discretion to reduce this requirement if documented by the applicant to be infeasible or unnecessary.

13. Water shall be isolated from the in-stream work area using a cofferdam constructed of non-erodible materials (steel sheets, aqua barriers, rip rap and geotextile liner, etc.). Earthen cofferdams are not permissible.

14. The cofferdam must be constructed from the upland area and no equipment may enter flowing water at any time. If the installation of the cofferdam cannot be completed from shore and access is needed to reach the area to be coffered, other measures, such as the construction of a causeway, will be necessary to ensure that equipment does not enter the water. Once the cofferdam is in place and the isolated area is dewatered, equipment may enter the coffered area to perform the required work.

15. If bypass pumping is necessary, the intake hose shall be placed on a stable surface or floated to prevent sediment from entering the hose. The bypass discharge shall be placed on a non-erodible, energy dissipating surface prior to rejoining the stream flow and shall not cause erosion. Filtering of bypass water is not necessary unless the bypass water has become sediment-laden as a result of the current construction activities.

16. During dewatering of the coffered work area, all sediment-laden water must be filtered to remove sediment. Possible options for sediment removal include baffle systems, anionic polymers systems, dewatering bags, or other appropriate methods. Water shall have sediment removed prior to being re-introduced to the downstream waterway. A stabilized conveyance from the dewatering device to the waterway must be identified in the plan. Discharge water is considered clean if it does not result in a visually identifiable degradation of water clarity.

17. The portion of the side slope that is above the observed water elevation shall be stabilized as specified in the plans prior to accepting flows. The substrate and toe of slope that has been disturbed due to construction activities shall be restored to proposed or pre-construction conditions and fully stabilized prior to accepting flows.

This verification does not obviate the need to obtain all other required Federal, state, or local approvals before starting work. Please note that Section 401 Water Quality Certification has been issued by IEPA for this RP. If you have any questions regarding Section 401 certification, please contact Mr. Darin LeCrone at IEPA Division of Water Pollution Control, Permit Section #15, by telephone at (217) 782-0610.

Once you have completed the authorized activity, please sign and return the enclosed compliance certification. If you have any questions, please contact Ms. Kimberly Kubiak of my staff by telephone at (312) 846-5541, or email at kimberly.j.kubiak@usace.army.mil.

Sincerely,

MCLAURIN.DIEDRA.L.1230340362

Digitally signed by MCLAURIN.DIEDRA.L.1230340362
DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=USA, cn=MCLAURIN.DIEDRA.L.1230340362
Date: 2018.03.06 06:58:02 -06'00'

Diedra L. McLaurin
Team Leader, West Section
Regulatory Branch

Enclosures

Copy Furnished:

Illinois Department of Natural Resources/OWR (Gary Jereb)
Kane/DuPage SWCD (Ashley Curran, Patrick McPartlan)
HRGreen (Logan Gilbertsen, Sylwia Kokoszka)

PERMIT COMPLIANCE

CERTIFICATION

Permit Number: LRC-2018-104

Permittee: Karen Young
City of St. Charles

Date: March 6, 2018

I hereby certify that the work authorized by the above-referenced permit has been completed in accordance with the terms and conditions of said permit and if applicable, compensatory wetland mitigation was completed in accordance with the approved mitigation plan.[1]

_____ _____

PERMITTEE DATE

Upon completion of the activity authorized by this permit and any mitigation required by the permit, this certification must be signed and returned to the following address:

U.S. Army Corps of Engineers
Chicago District, Regulatory Branch
231 South LaSalle Street, Suite 1500
Chicago, Illinois 60604-1437

Please note that your permitted activity is subject to compliance inspections by Corps of Engineers representatives. If you fail to comply with this permit, you may be subject to permit suspension, modification, or revocation.

[1] If compensatory mitigation was required as part of your authorization, you are certifying that the mitigation area has been graded and planted in accordance with the approved plan. You are acknowledging that the maintenance and monitoring period will begin after a site inspection by a Corps of Engineers representative or after thirty days of the Corps' receipt of this certification. You agree to comply with all permit terms and conditions, including additional reporting requirements, for the duration of the maintenance and monitoring period.

US Army Corps of Engineers®
Chicago District

CHICAGO DISTRICT
2017 REGIONAL PERMIT PROGRAM

3. TRANSPORTATION PROJECTS

RP3 authorizes the construction or replacement of transportation projects, including roads, bridges, runways and taxiways, and railroads. Authorization under RP3 is subject to the General Conditions of the Regional Permit Program beginning on page 6 of this document. In addition, the following requirements must be addressed in writing and submitted with the notification:

a. The impact to waters of the US must not exceed 1.0 acre for a single and complete project. For projects that impact greater than 0.10 acres of waters of the U.S., the permittee is required to provide compensatory mitigation.

b. Projects that impact no more than 0.5 acres of waters of the U.S. and do not impact high-quality aquatic resources will be processed under Category I.

c. Projects that impact over 0.5 acres up to 1.0 acre of waters of the U.S., impact a high quality aquatic resource, or cross a Section 10 Waterway, will be processed under Category II (www.lrc.usace.army.mil/Missions/Regulatory/NavigableWaters.aspx).

d. The discharge must be limited to the minimum width necessary to complete the authorized work.

e. Crossings of waterways and/or wetlands must be culverted, bridged or otherwise designed to prevent the restriction of expected high water flows. The crossing must be designed as to not impede low water flows or the safe passage of fish and aquatic organisms. Additional conditions may be required for streams determined to be a high quality fisheries resource such as designing the bottom of the culvert to include "roughness" to reduce flow velocities. "Roughness" can include cemented-in stone, baffles, or the placement of rock along the bottom of the culvert and/or along the culvert wall. Embedding the culvert to a depth greater than 12 inches may also be required.

    1) An alternatives analysis must be prepared for perennial stream crossings where a culvert is proposed for a new crossing or to replace a bridge. The analysis must document why a bridged crossing would not be a practicable alternative. If use of a multiple-barrel pipe or multi-cell box culvert is proposed, document why a single pipe or box -culvert system cannot be utilized. For crossings over HQARs, arch span and bottomless culverts must be considered.

    2) For culverts, the upstream and downstream invert must be embedded 6 to 12 inches below the streambed elevation. This will allow the natural substrate to colonize the structure's bottom, encourage fish movement, and maintain the existing channel slope. Culvert slope should match adjacent elevations. The width of the base flow culvert must be approximately equal to the average channel width to promote the safe passage of fish and other aquatic organisms.

Culvert(s) must not permanently widen /constrict the channel or reduce/increase stream depth. Multiple pipe culverts may not be used to receive base flows.

3) For all crossings, provide cross-sections of the stream in three locations: at the crossing, and upstream and downstream of the crossing. The crossing must be designed to maintain the width of the base flow channel through the project area.

f. The permittee must clearly label the construction drawings to include limits of Waters of the U.S., existing and proposed grading contours, all structures associated with the installation of the crossing such as wing walls, rock and concrete protection measures, existing and proposed utilities lines, outfalls and associated structures. A detailed narrative must accompany the construction plans and describe all work to be performed as indicated on the plans.

g. All temporary construction activities must adhere to the requirements of items c through g of Regional Permit 7 (Temporary Construction Activities) and must be addressed in writing and submitted with the notification.

h. This permit may not be used to authorize structural bank stabilization methods such as retaining walls, gabion baskets, riprap, etc., other than those structures necessary to assure the integrity of the stream and stream bank immediately adjacent to the crossing.

i. To the greatest extent possible, the permittee must establish and maintain a protective upland buffer composed of native plants (or other appropriate vegetation approved by the District) within the right-of-way adjacent to all waters of the U.S.

j. The project must consider permanent, post-construction Best Management Practices (BMPs) to protect water quality, preserve natural hydrology and minimize the overall impacts of the project on aquatic resources. BMPs must be evaluated at the earliest planning stages of the project and prior to the purchase of new right-of-way (ROW). Please note that temporary SESC measures are not permanent BMPs.

To the greatest extent practicable, the activity must be designed such that surface water does not directly discharge into waters of the U.S. For each location where stormwater discharges towards a jurisdictional wetland or stream, provide a written narrative discussing opportunities to implement permanent BMPs. The type of BMPs proposed should be based on the scope of work, the change in impervious surface runoff discharging to the waters of the U.S., and the overall direct impacts to waters of the U.S. resulting from the proposed work.

Possible BMPs include, but are not limited to: preserving (i.e. not developing) existing permeable areas on site, native vegetated swales, permanent ditch checks, bioswales, infiltration trenches, naturalized detention basins, and mechanical stormwater treatment units. For bridge replacements, stormwater from the bridge deck should be directed to the roadside ditches and as far from the stream as practicable so that water does not directly enter the stream through drains in the bridge deck.

For discharges associated with maintenance projects, partial intersection improvements, and bridge/culvert replacements, native vegetated roadside ditches could be utilized as an appropriate BMP. For capacity improvement projects (intersection reconstructions, road widening) or for projects that impacts HQARs, the use of permanent ditch checks, bioswales or naturalized basins

should be utilized. Compensatory storage basins may also be modified to provide water quality benefit. Appropriate BMPs will be determined during permit review.

Naturalized detention basin design should include:

1) Emergent vegetation in the bottoms of the wetland basins and along the periphery of wet bottom basins and side slopes vegetated in native prairie (traditional dry bottom basins are not approved BMPs).

2) Stilling basins at inlets

3) Design the basin to maximize the distance between inlet(s) and outlet(s)

A management and monitoring plan will be required on a case-by-case basis and will include performance standards such as the BMPs ability to function as designed, percent coverage of vegetation, stabilization of soils, and corrective measures to bring areas into compliance. For additional information, please refer to our BMP Maintenance & Monitoring (M&M) Guidelines: www.lrc.usace.army.mil/Portals/36/docs/regulatory/pdf/BMPMMG.pdf

k. This permit does not authorize discharges into jurisdictional areas for temporary use of construction material or equipment storage.

l. For a project site adjacent to a conservation area, the permittee must request a letter from the organization responsible for management of the area. The response letter must identify recommended measures to protect the area from impacts that may occur as a result of the development. A copy of the request and any response received from the organization must be submitted to the District with the notification.

m. This permit cannot be used to authorize the installation of road crossings associated with residential, commercial or institutional developments.

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2017 REGIONAL PERMIT PROGRAM

7. TEMPORARY CONSTRUCTION ACTIVITIES

RP7 authorizes temporary structures and discharges necessary for construction activities, access fills and dewatering of construction sites. Authorization under RP7 is subject to the General Conditions of the Regional Permit Program beginning on page 6 of this document. In addition, the following requirements must be addressed in writing and submitted with the notification:

a. All projects will be processed under Category I.

b. The temporary fill to waters of the U.S. must be limited to the minimum necessary to complete the activity. The acreage and purpose of each temporary fill must be specified.

c. Fill must be composed of non-erodible materials and be constructed to withstand expected high flows.

d. Low ground-pressure equipment is required for work in wetlands. However, after careful consideration, if the District accepts a proposal to use heavy equipment to accomplish the work, the placement of timber mats or other protective measures must be utilized to minimize soil disturbance. Lumber to be used for temporary construction activities must be free of all chemical treatment.

e. All materials used for temporary construction activities must be moved to an upland area immediately following completion of the construction activity.

f. The permittee is required to restore the construction area to pre-construction conditions, including grading to original contours and revegetating disturbed areas with appropriate native vegetation immediately upon completion of the project. A restoration plan must be submitted with the notification. A 1-foot contour topographic map of the project area may be required on a case-by-case basis.

g. For projects that require installation and operation of a cofferdam, the cofferdam method and a detailed construction sequence must be specified in the project narrative and clearly labeled on the construction plans. The following requirements will be adhered to for any project requiring in-stream work and must be incorporated into the soil erosion and sediment control plans for the project:

    1) Work in the waterway should be timed to take place during low or no-flow conditions. Low flow conditions are at or below the normal water elevation.

    2) The plan must be designed to allow for the conveyance of the 2-year peak flow past the work area without overtopping the cofferdam. The Corps has the discretion to reduce this requirement if documented by the applicant to be infeasible or unnecessary.

3) Water must be isolated from the in-stream work area using a cofferdam constructed of non-erodible materials (steel sheets, aqua barriers, rip rap and geotextile liner, etc.). Earthen cofferdams are not permissible.

4) The cofferdam must be constructed from the upland area and no equipment may enter the water at any time. If the installation of the cofferdam cannot be completed from shore and access is needed to reach the area to be coffered, other measures, such as the construction of a causeway, will be necessary to ensure that equipment does not enter the water. Once the cofferdam is in place and the isolated area is dewatered, equipment may enter the coffered area to perform the required work.

5) If bypass pumping is necessary, the intake hose must be placed on a stable surface or floated to prevent sediment from entering the hose. The bypass discharge must be released onto a non-erodible, energy dissipating surface prior to rejoining the stream flow and must not cause erosion. Filtering of bypass water is not necessary unless the bypass water has become sediment-laden as a result of the current construction activities.

6) During dewatering of the coffered work area, all sediment-laden water must be filtered to remove sediment. Possible options for sediment removal include baffle systems, anionic polymers systems, dewatering bags, or other appropriate methods. Water must have sediment removed prior to being re-introduced to the downstream waterway. A stabilized conveyance from the dewatering device to the waterway must be identified in the plan. Discharge water may not result in a visually identifiable degradation of water clarity.

7) The area from the toe to the top of the side slope must be temporarily stabilized during construction to reduce the potential for erosion. All areas disturbed due to construction activities must be restored to proposed conditions and fully stabilized prior to accepting flows.

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2017 REGIONAL PERMIT PROGRAM

9. MAINTENANCE

RP9 authorizes the following activities:

1. The repair, rehabilitation, or replacement of any previously authorized, currently serviceable structure or fill, provided that the structure or fill is not to be put to uses differing from those uses specified or contemplated for it in the original permit or the most recently authorized modification. Minor deviations in the structure's configuration or footprint may be permitted, provided the environmental impacts resulting from such repair, rehabilitation, or replacement are minimal. This includes changes in materials, construction techniques, or current construction codes or safety standards which are necessary to implement the repair, rehabilitation, or replacement.

2. The repair, rehabilitation, or replacement of those structures destroyed by storms, floods, fire or other discrete events, provided the repair or rehabilitation is commenced or under contract to commence within three years of the date of their destruction or damage.

3. The maintenance of existing flood control facilities, retention/detention basins, and channels that were constructed by the Corps and transferred to a local sponsor for operation and maintenance. Maintenance is limited to that approved in a maintenance baseline determination made by the District. This determination will be based on the approved plans, the facility actually constructed, maintenance history, present versus original flood control needs, and presence of sensitive/unique functions and values of aquatic resources that may be adversely affected. Applicants are encouraged to meet with the District to establish the maintenance baseline prior to notification.

Authorization under RP9 is subject to the General Conditions of the Regional Permit Program beginning on page 6 of this document. In addition, the following requirements must be addressed in writing and submitted with the notification:

a. All projects meeting RP9 requirements will be processed under Category I.

b. All temporary construction activities must adhere to the requirements of items c through g of Regional Permit 7 (Temporary Construction Activities) and must be addressed in writing and submitted with the notification.

c. In the event of repair, rehabilitation, or replacement of any previously authorized, currently serviceable structure or fill, provide plan drawings disclosing that the work will not be put to uses differing than those specified in the original permit or most recently authorized modification.

d. In the event of repair, rehabilitation or replacement of those structures destroyed by storms, floods, fire or other discrete events, provide written and photographic evidence that the structure(s) has been affected by such events.

e. Projects along the Lake Michigan shoreline are not authorized under this regional permit.

f. Maintenance dredging and beach restoration are not authorized by this regional permit.

g. Replacement of culverts is not authorized under this regional permit if it will impede low water flows or the safe passage of fish and aquatic organisms.

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GENERAL CONDITIONS APPLICABLE TO THE 2017 REGIONAL PERMIT PROGRAM

The permittee must comply with the terms and conditions of the Regional Permits and the following general conditions for all activities authorized under the RPP:

1. State 401 Water Quality Certification - Water quality certification under Section 401 of the Clean Water Act may be required from the Illinois Environmental Protection Agency (IEPA). The District may consider water quality, among other factors, in determining whether to exercise discretionary authority and require an Individual Permit. Please note that Section 401 Water Quality Certification is a requirement for projects carried out in accordance with Section 404 of the Clean Water Act. Projects carried out in accordance with Section 10 of the Rivers and Harbors Act of 1899 do not require Section 401 Water Quality Certification.

On February 16, 2017, the IEPA granted Section 401 certification, with conditions, for all Regional Permits, except for activities in certain waterways noted under RPs 4 and 8. The following conditions of the certification are hereby made conditions of the RPP:

1. The applicant must not cause:
   a) a violation of applicable water quality standards of the Illinois Pollution Control Board Title 35, Subtitle C: Water Pollution Rules and Regulations;
   b) water pollution defined and prohibited by the Illinois Environmental Protection Act;
   c) interference with water use practices near public recreation areas or water supply intakes;
   d) a violation of applicable provisions of the Illinois Environmental Protection Act.
2. The applicant must provide adequate planning and supervision during the project construction period for implementing construction methods, processes and cleanup procedures necessary to prevent water pollution and control erosion.
3. Except as allowed under condition 7, 9 and 10, any spoil material excavated, dredged or otherwise produced must not be returned to the waterway but must be deposited in a self-contained area in compliance with all state statutes, regulations and permit requirements with no discharge to waters of the State unless a permit has been issued by the Illinois EPA. Any backfilling must be done with clean material and placed in a manner to prevent violation of applicable water quality standards.
4. All areas affected by construction must be mulched and seeded as soon after construction as possible. The applicant shall undertake necessary measures and procedures to reduce erosion during construction. Interim measures to prevent erosion during construction shall be taken and may include the installation of staked straw bales, sedimentation basins and temporary mulching. All construction within the waterway shall be constructed during zero or low flow conditions. The applicant shall be responsible for obtaining a NPDES Storm Water Permit prior to initiating construction if the construction activity associated with the project will result in the disturbance of (1) one or more acres, total land area. An NPDES Storm Water Permit may be obtained by submitting a properly completed Notice of Intent (NOI) form by certified mail to the Illinois EPA's Division of Water Pollution Control, Permit Section.
5. The applicant shall implement erosion control measures consistent with the "Illinois Urban Manual" (IEPA/USDA, NRCS; 2016).
6. The applicant is advised that the following permits(s) must be obtained from the Illinois EPA: The applicant must obtain permits to construct sanitary sewers, water mains and related facilities prior to construction.
7. Backfill used in stream crossing trenches shall be predominantly sand or larger size material, with less than 20% passing a #230 U.S. sieve.
8. Any channel relocation shall be constructed under dry conditions and stabilized to prevent erosion prior to the diversion of flow.
9. Backfill used within trenches passing through surface waters of the State, except wetland areas, shall be clean course aggregate, gravel or other material which will not cause siltation, pipe damage during placement, or chemical corrosion in place. Excavated material may be used only if:
   a) particle size analysis is conducted and demonstrates the material to be at least 80% sand or larger size material, using #230 U.S. sieve; or

b) excavation and backfilling are done under dry conditions.

10. Backfill used within trenches passing through wetland areas shall consist of clean material which will not cause siltation, pipe damage during placement, or chemical corrosion in place. Excavated material shall be used to the extent practicable, with the upper six (6) to twelve (12) inches backfilled with the topsoil obtained during trench excavation.

11. Any applicant proposing activities in a mined area or previously mined area shall provide to the IEPA a written determination regarding the sediment and materials used which are considered "acid-producing material" as defined in 35 Il. Adm. Code, Subtitle D. If considered "acid-producing material," the applicant shall obtain a permit to construct pursuant to 35 Il. Adm. Code 404.101.

12. Asphalt, bituminous material and concrete with protruding material such as reinforcing bar or mesh shall not be 1) used for backfill, 2) placed on shorelines/stream banks, or 3) placed in waters of the State.

13. Applicants that use site dewatering techniques in order to perform work in waterways for construction activities approved under Regional Permits 1 (Residential, Commercial and Institutional Developments), 2 (Recreation Projects), 3 (Transportation Projects), 7 (Temporary Construction Activities), 9 (Maintenance), or 12 (Bridge Scour Protection) shall maintain flow in the stream during such construction activity by utilizing dam and pumping, fluming, culverts or other such techniques.

14. In addition to any action required of the Regional Permit 13 (Cleanup of Toxic and Hazardous Materials Projects) with respect to the "Notification" General Condition 23, the applicant shall notify the Illinois EPA Bureau of Water, of the specific activity. This notification must include information concerning the orders and approvals that have been or will be obtained from the Illinois EPA Bureau of Land (BOL) for all cleanup activities under BOL jurisdiction, or for which authorization or approval is sought from BOL for no further remediation. This Regional Permit is not valid for activities that do not require or will not receive authorization or approval from the BOL.

15. The applicant shall implement Best Management Practices (BMPs) to protect water quality, preserve natural hydrology and minimize the overall impacts to aquatic resources during and after construction. If the project involves a water with an approved Total Maximum Daily Load (TMDL) allocation for any parameter, measures which ensure consistency with the assumption and requirements of the TMDL shall be included. TMDL program information and water listings are available at http://www.epa.illinois.gov/topics/water-quality/watershed-management/tmdls/index. If the project involves and impaired water listed on the Illinois Environmental Protection Agency's Section 303(d) list for suspended solids, turbidity, or siltation, measures designed for at least a 25-year, 24-hour rainfall event shall be incorporated. Impaired waters are identified at http://www.epa.illinois.gov/topics/water-quality/watershed-management/tmdls/303d-list/index.

16. Earthen granular fill used for construction of temporary structures in waters of the State shall have less than 20% passing a #230 U.S. sieve.

17. The use of directional drilling to install utility pipelines below surface waters of the State is hereby certified provided that:

    a) All pits and other construction necessary for the directional drilling process are located outside of surface waters of the State;
    b) All drilling fluids shall be adequately contained such that they cannot cause a discharge to surface waters of the State. Such fluids shall be managed such that they are not discharged to waters of the State and disposed of appropriately in accordance with the regulations at 35 Il. Adm. Code Subtitle G.
    c) Erosion and sediment control is provided with Conditions 2, 4, and 5.

2. Illinois Coastal Management Program - Any non-federal entity applying to the Corps for an Individual Permit or a Letter of Permission for a project located within the boundary of the Illinois Coastal Management Program (ICMP), including waters of Lake Michigan, is required to submit a Federal Consistency Determination confirmation from the Illinois Coastal Management Program as part of the permit review process.

On February 18, 2017, the Illinois Department of Natural Resources, Coastal Management Program granted the Federal Consistent Determination for the Regional Permit Program. This determination is confirmation that the activities covered under the Regional Permit Program are consistent with the policies of the ICMP.

PDF maps of the Illinois Coastal Management Program's Zone Boundaries can be found at the bottom of the page at www.dnr.illinois.gov/cmp/Pages/boundaries.aspx and instructions on requesting an ICMP Federal Consistency Determination can be found at www.dnr.illinois.gov/cmp/Documents/ICMPFederalConsistencyReviewProcedures.pdf.

3. Threatened and Endangered Species –

a) For applications where a Federal agency other than the District is designated as the lead agency, the designated lead agency shall follow agency specific procedures for complying with the requirements of Section 7 of the Endangered Species Act of 1973 (Act). Federal permittees must provide the District with the following documentation to demonstrate compliance with those requirements: the species list, your effects determination for each species, and the rationale for your effects determination for each species.

b) For non-Federal permittees, if the District determines that the activity may affect Federally listed species or critical habitat, the District must initiate section 7 consultation with the U.S. Fish and Wildlife Service (USFWS) in accordance with the Endangered Species Act of 1973, as amended (Act). Applicants must provide additional information that would enable the District to conclude that the proposed action will have no effect on Federally listed species.

The application packet must indicate whether resources (species, their suitable habitats, or critical habitat) listed or designated under the Act, may be present within areas affected (directly or indirectly) by the proposed project. Applicants must provide a section 7 species list for the action area using the on-line process at the USFWS website. You can access "U.S. Fish and Wildlife Service Endangered Species Program of the Upper Midwest" website at www.fws.gov/midwest/Endangered. Click on the section 7 Technical Assistance green shaded box in the lower right portion of the screen and follow the instructions to completion. Review all documentation pertaining to the species list and provide your effects determination for each species along with the rationale for your effects determination for each species to this office for review.

If no species, their suitable habitats, or critical habitats are listed, then a "no effect" determination can be made, and section 7 consultation is not warranted. If species or critical habitat appear on the list or suitable habitat is present within the action area, then a biological assessment or biological evaluation will need to be completed to determine if the proposed action will have "no effect" or "may affect" the species or suitable habitat. The District must request initiation of section 7 consultation with the USFWS upon agreement with the applicant on the effect determinations in the biological assessment or biological evaluation.

If the issues are not resolved, the analysis of the situation is complicated, or impacts to listed species or critical habitat are found to be greater than minimal, the District will consider reviewing the project under the Individual Permit process.

Projects in Will, DuPage, or Cook Counties that are located in the recharge zones for Hine's emerald dragonfly critical habitat units may be reviewed under the RPP, with careful consideration due to the potential impacts to the species. All projects reviewed that are located within 3.25 miles of a critical habitat unit will be reviewed under Category II of the RPP. Please visit the following website for the locations of the Hine's emerald dragonfly critical habitat units in Illinois. www.fws.gov/midwest/endangered/insects/hed/FRHinesFinalRevisedCH.html

4. Historic Properties - In cases where the District determines that the activity may affect properties listed, or eligible for listing, in the National Register of Historic Places, the activity may require an Individual Permit. A determination of whether the activity may be authorized under the RPP instead of an Individual Permit will not be made until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

Federal permittees designated as the lead agency shall follow agency specific procedures for complying with the requirements of Section 106 of the National Historic Preservation Act. Federal permittees must provide the District with the appropriate documentation to demonstrate compliance with those requirements.

Non-Federal permittees must include notification to the District if the authorized activity may have the potential to cause effects to any historic properties listed, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the permit application must state which historic properties may be affected by the proposed work or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of or potential for the presence of historic resources can be sought from the State Historic Preservation Officer or Tribal Historic Preservation Officer, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)).

When reviewing permit submittals, the District will comply with the current procedures for addressing the requirements of Section 106 of the National Historic Preservation Act. Based on the information submitted and these efforts, the District will determine whether the proposed activity has the potential to cause an effect on the historic properties. Where the non-Federal applicant has identified historic properties which the activity may have the potential to cause effects and so notified the District,

the non-Federal applicant must not begin the activity until notified by the District either that the activity has no potential to cause effects or that consultation under Section 106 of the NHPA has been completed.

The District must take into account the effects on such properties in accordance with 33 CFR Part 325, Appendix C, and 36 CFR 800. If all issues pertaining to historic properties have been resolved through the consultation process to the satisfaction of the District, Illinois State Historic Preservation Officer (SHPO) and Advisory Council on Historic Preservation, the District may, at its discretion, authorize the activity under the RPP.

Applicants are encouraged to obtain information on historic properties from the SHPO and the National Register of Historic Places at the earliest stages of project planning. For information, contact:

Illinois State Historic Preservation Office
Illinois Department of Natural Resources
Attn: Review & Compliance
Old State Capital
1 Natural Resources Way
Springfield, IL 62702
(217) 782-4836
https://www2.illinois.gov/dnrhistoric/Pages/default.aspx

If you discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity, you must immediately notify this office of what you have found, and to the maximum extent practicable, stop activities that would adversely affect those remains and artifacts until the required coordination has been completed. The District will initiate the Federal, Tribal and State coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

5. Soil Erosion and Sediment Control - Measures must be taken to control soil erosion and sedimentation at the project site to ensure that sediment is not transported to waters of the U.S. during construction. Soil erosion and sediment control measures must be implemented before initiating any clearing, grading, excavating or filling activities. All temporary and permanent soil erosion and sediment control measures must be maintained throughout the construction period and until the site is stabilized. All exposed soil and other fills, and any work below the ordinary high water mark must be permanently stabilized at the earliest practicable date.

Applicants are required to prepare a soil erosion and sediment control (SESC) plan including temporary best management practices (BMPs) to be implemented during construction. It is recommended that the plan be designed in accordance with the Illinois Urban Manual, current edition (www.aiswcd.org/illinois-urban-manual). Practice standards and specifications for measures outlined in the soil erosion and sediment control plans should follow the latest edition of the "Illinois Urban Manual: A Technical Manual Designed for Urban Ecosystem Protection and Enhancement." Additional SESC measures not identified in the Illinois Urban Manual may also be utilized upon District approval.

At the District's discretion, an applicant may be required to submit the SESC plan to the local Soil and Water Conservation District (SWCD) or the Lake County Stormwater Management Commission (SMC) for review. When the District requires submission of an SESC plan, the following applies: An activity may not commence until the SESC plan for the project site has been approved; The SWCD/SMC will review the plan and provide a written evaluation of its adequacy; A SESC plan is considered acceptable when the SWCD/SMC has determined that it meets technical standards. Once a determination has been made, the authorized work may commence unless the SWCD/SMC has requested that they be notified prior to commencement of the approved plans. The SWCD/SMC may elect to attend pre-construction meetings with the permittee and conduct inspections during construction to determine compliance with the plans. Applicants are encouraged to begin coordinating with the appropriate SWCD/SMC office at the earliest stages of project planning. For information, contact:

Kane-DuPage SWCD
2315 Dean Street, Suite 100
St. Charles, IL 60174
(630) 584-7960 ext.3
www.kanedupageswcd.org

Lake County SMC
500 W. Winchester Rd, Suite 201
Libertyville, IL 60048
(847) 377-7700
www.lakecountyil.gov/stormwater

McHenry-Lake County SWCD
1648 South Eastwood Dr.
Woodstock, IL 60098
(815) 338-0099 ext.3
www.mchenryswcd.org

North Cook SWCD
640 Cosman Rd
Elk Grove Village, IL 60007

Will/South Cook SWCD
1201 S. Gougar Rd
New Lenox, IL 60451

(847) 885-8830
www.northcookswcd.org

(815) 462-3106
www.will-scookswcd.org

6. Total Maximum Daily Load - For projects that include a discharge of pollutant(s) to waters for which there is an approved Total Maximum Daily Load (TMDL) allocation for any parameter, the applicant must develop plans and BMPs that are consistent with the assumptions and requirements in the approved TMDL. The applicant must incorporate into their plans and BMPs any conditions applicable to their discharges necessary for consistency with the assumptions and requirements of the TMDL within any timeframes established in the TMDL. The applicant must carefully document the justifications for all BMPs and plans, and install, implement and maintain practices and BMPs that are consistent with all relevant TMDL allocations and with all relevant conditions in an implementation plan. Information regarding the TMDL program, including approved TMDL allocations, can be found at the following website: www.epa.state.il.us/water/tmdl/

7. Floodplain - Discharges of dredged or fill material into waters of the United States within the 100-year floodplain (as defined by the Federal Emergency Management Agency) resulting in permanent above-grade fills must be avoided and minimized to the maximum extent practicable. When such an above-grade fill would occur, the applicant may need to obtain approval from the Illinois Department of Natural Resources, Office of Water Resources, (IDNR-OWR) which regulates activities affecting the floodway and the local governing agency (e.g., Village or County) with jurisdiction over activities in the floodplain. Compensatory storage may be required for fill within the floodplain. Applicants are encouraged to obtain information from the IDNR-OWR and the local governing agency with jurisdiction at the earliest stages of project planning. For information on floodway construction, contact:

IDNR/OWR
2050 Stearns Road
Bartlett, IL 60103
(847) 608-3100
www.dnr.illinois.gov/WaterResources/

For information on floodplain construction, please contact the local government and/or the Federal Emergency Management Agency. Pursuant to 33 CFR 320.4(j), the District will consider the likelihood of the applicant obtaining approval for above-ground permanent fills in floodplains in determining whether to issue authorization under the RPP.

8. Navigation - Regulated activities may not cause more than a minimal adverse effect on navigation. Safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities within navigable waters of the United States. The permittee understands and agrees that if future operations by the United States require the removal, relocation, or other alteration of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work will cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim will be made against the United States on account of any such removal or alteration.

9. Proper Maintenance - Authorized structures or fill must be properly maintained, including that necessary to ensure public safety.

10. Aquatic Life Movements - Regulated activities may not substantially disrupt the movement of those species of aquatic life indigenous to the waterbody, including species that normally migrate through the area, unless the activity's primary purpose is to impound water.

11. Equipment - Soil disturbance and compaction in regulated areas must be minimized through the use of low ground pressure equipment, matting for heavy equipment, or other measures as approved by the District.

12. Wild and Scenic Rivers - Regulated activities may not occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system, while the river is in an official study status. Information on Wild and Scenic Rivers may be obtained from the appropriate land management agency in the area, such as the National Park Service and the U.S. Forest Service.

13. Tribal Rights - Regulated activities or their operation may not impair reserved Tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

14. Water Supply Intakes - Discharges of dredged or fill material may not occur in the proximity of a public water supply intake except where the discharge is for repair of the public water supply intake structures or adjacent bank stabilization.

15. Shellfish Production - Discharges of dredged or fill material may not occur in areas of concentrated shellfish production.

16. Suitable Material - Discharges of dredged or fill material may not consist of unsuitable material. Material discharged must be free from toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act). Unsuitable material includes trash, debris, vehicle parts, asphalt, and creosote treated wood.

17. Spawning Areas - Discharges in spawning areas during spawning seasons must be avoided to the maximum extent practicable.

18. Obstruction of High Flows - Discharges must not permanently restrict or impede the passage of normal or expected high flows. All crossings must be culverted, bridged or otherwise designed to prevent the restriction of expected high water flows and designed so as not to impede low water flows or the movement of aquatic organisms.

19. Impacts From Impoundments - If the discharge creates an impoundment of water, adverse impacts on aquatic resources caused by the accelerated passage of water and/or the restriction of its flow must be avoided to the maximum extent practicable.

20. Waterfowl Breeding Areas - Discharges into breeding areas utilized by migratory waterfowl must be avoided to the maximum extent practicable.

21. Removal of Temporary Fills - Temporary fill material must be removed in its entirety and the affected area returned to pre-existing condition.

22. Mitigation - All appropriate and practicable steps must first be taken to avoid and minimize impacts to aquatic resources. For unavoidable impacts, compensatory mitigation is required to replace the loss of wetland, stream, and/or other aquatic resource functions (33 CFR 332). The proposed compensatory mitigation must utilize a watershed approach and fully consider the ecological needs of the watershed. Where an appropriate watershed plan is available, mitigation site selection should consider recommendations in the plan. The applicant must describe in detail how the mitigation site was chosen and will be developed, and be based on the specific resource need of the impacted watershed. Permit applicants are responsible for proposing an appropriate compensatory mitigation option to offset unavoidable impacts. However, the District is responsible for determining the appropriate form and amount of compensatory mitigation required when evaluating compensatory mitigation options and determining the type of mitigation that would be environmentally preferable. In making this determination, the District will assess the likelihood for ecological success and sustainability, the location of the compensation site relative to the impact site, and their significance within the watershed. Methods of providing compensatory mitigation include aquatic resource restoration, establishment, enhancement, and in certain circumstances, preservation. Compensatory mitigation will be accomplished by establishing a minimum ratio of 1.5 acres of mitigation for every 1.0 acre of impact to waters of the U.S. Furthermore, the District has the discretion to require additional mitigation to ensure that the impacts are no more than minimal. Further information is available at www.lrc.usace.army.mil/Missions/Regulatory/Illinois/Mitigation.aspx.

23. Notification - The applicant must provide written notification (i.e., a complete application) for a proposed activity to be verified under the RPP prior to commencing a proposed activity. The District's receipt of the complete application is the date when the District receives all required notification information from the applicant (see below). If the District informs the applicant within 60 calendar days that the notification is incomplete (i.e., not a complete application), the applicant must submit to the District, in writing, the requested information to be considered for review under the Regional Permit Program. A new 60 day review period will commence when the District receives the requested information. Applications that involve unauthorized activities that are completed or partially completed by the applicant are not subject to the 60-day review period. Applications may be either sent to ChicagoRequests@usace.army.mil or mailed to our office: USACE Regulatory Branch, 231 South LaSalle Street, Suite 1500, Chicago, Illinois 60604.

For all activities, notification must include:

a. A detailed narrative of the proposed activity describing all work to be performed, a clear project purpose and need statement, the Regional Permit(s) to be used for the activity, the area (in acres) of permanent and temporary fills proposed in each water of the U.S., and a statement that the terms and conditions of the RPP will be followed. For projects with impacts to multiple aquatic resources, provide a table identifying impact types and amounts.

b. A completed joint application form for Illinois signed by the applicant or agent. The application form is available at www.lrc.usace.army.mil/Portals/36/docs/regulatory/forms/appform.pdf. If the applicant does not sign the joint application form, notification must include a signed, written statement from the applicant designating the agent as their representative.

c. A delineation of waters of the U.S., including wetlands, for the project area, and for areas adjacent to the project site (off-site wetlands must be identified through the use of reference materials including review of local wetland inventories, soil surveys, and the most recent available aerial photography), must be prepared in accordance with the current U.S. Army Corps of Engineers methodology (www.usace.army.mil/Missions/CivilWorks/RegulatoryProgramandPermits/reg_supp.aspx) and generally conducted during the growing season.* The District's wetland delineation standards are available at www.lrc.usace.army.mil/Portals/36/docs/regulatory/pdf/Delineations.pdf. For sites supporting wetlands, the delineation must include a Floristic Quality Assessment (Swink and Wilhelm. 1994, latest edition, Plants of the Chicago Region). The delineation must also include information on the occurrence of any high-quality aquatic resources (see Appendix A), and a listing of waterfowl, reptile and amphibian species observed while at the project area. The District reserves the right to exercise judgment when reviewing submitted wetland delineations. Flexibility of these requirements may be allowed by the District on a case-by-case basis only.

d. A street map showing the location of the project area.

e. Latitude and longitude for the project in decimal degrees format (for example 41.878639N, -87.631212W).

f. Preliminary engineering drawings sized 11" by 17" (full-sized may be requested by the project manager) showing all aspects of the proposed activity and the location of waters of the U.S. to be impacted and not impacted. The plans must include grading contours, proposed and existing structures such as buildings footprints, roadways, road crossings, stormwater management facilities, utilities, construction access areas and details of water conveyance structures. The plans must also depict buffer areas, outlots or open space designations, best management practices, deed restricted areas and restoration areas, if required under the specific RP.

g. Submittal of soil erosion and sediment control (SESC) plans that identify all SESC measures to be utilized during construction of the project.

h. A determination whether resources (species, their suitable habitats, or critical habitat) listed or designated under the Endangered Species Act of 1973, as amended, may be present within areas affected (directly or indirectly) by the proposed project. Applicants must provide a section 7 species list for the action area using the on-line process at the USFWS website. You can access "U.S. Fish and Wildlife Service Endangered Species Program of the Upper Midwest" website at www.fws.gov/midwest/Endangered. Click on the section 7 Technical Assistance green shaded box in the lower right portion of the screen and follow the instructions to completion. Review all documentation pertaining to the species list and provide your effects determination for each species along with the rationale for your effects determination for each species to this office for review.

   In the event there are no species, their suitable habitats, or critical habitats within areas affected (directly or indirectly) by the proposed project, then a "no effect" determination can be made and section 7 consultation is not warranted. If species or critical habitat appear on the list, or suitable habitat is present within the action area, then a biological assessment or biological evaluation will need to be completed to determine if the proposed action will have a "no effect" or a "may affect" determination on the species or suitable habitat. The District will request initiation of section 7 consultation with the USFWS upon agreement with the applicant on the effects determinations in the biological assessment or biological evaluation. If the issues are not resolved, the analysis of the situation is complicated, or impacts to listed species or critical habitat are found to be greater than minimal, the District will consider reviewing the project under the Individual Permit process.

i. A determination of the presence or absence of any State threatened or endangered species. Please contact the Illinois Department of Natural Resources (IDNR) to determine if any State threatened and endangered species could be in the project area. You can access the IDNR's Ecological Compliance Assessment Tool (EcoCAT) at the following website: dnr.illinois.gov/EcoPublic/. For the first general information question, select "To obtain information on Illinois T&E species or INAI sites for federal agency actions" and select "U.S. Army Corps of Engineers" from the drop down

* If a wetland delineation is conducted outside of the growing season, the District will determine on a case-by-case basis whether sufficient evidence is available to make an accurate determination. If the District finds that the delineation lacks sufficient evidence, the application will not be considered complete until the information is provided. This may involve re-delineating the project site during the growing season.

menu. Once the EcoCAT and consultation process is complete, forward all resulting information to this office for consideration. The report must also include recommended methods as required by the IDNR for minimizing potential adverse effects of the project.

j. A statement about the knowledge of the presence or absence of historic properties, which includes properties listed, or properties eligible to be listed in the National Register of Historic Places. The permittee must provide all pertinent correspondence documenting compliance. Initial documentation required for the Illinois State Historic Preservation Officer (ILSHPO) is located here: https://www2.illinois.gov/dnrhistoric/preserve/pages/resource-protection.aspx. The Historic and Architectural Resources Geographic Information System (HARGIS) at http://gis.hpa.state.il.us/hargis/ is the public portal to Illinois' historic buildings, structures, sites, objects, and districts. This database contains properties that have been listed in the National Register of Historic Places, determined eligible for listing, or surveyed without a determination.

k. Where an appropriate watershed plan is available, the applicant must address in writing how the proposed activity is aligned with the relevant water quality, hydrologic, and aquatic resource protection recommendations in the watershed plan. A list of watershed plans is available at www.lrc.usace.army.mil/Missions/Regulatory/Illinois/WatershedPlans.aspx.

l. A discussion of measures taken to avoid and/or minimize impacts to aquatic resources on the project site.

m. A compensatory mitigation plan for all impacts to waters of the U.S. (if compensatory mitigation is required under the specific RP) in compliance with 33 CFR 332.

n. A written narrative individually addressing each of the items listed under the specific RP(s) being requested.

For Category II activities, the District will provide an Agency Request for Comments (ARC) which describes the proposed activity. The ARC will be sent to interested Federal, state and local agencies, and appropriate Indian Tribes for review and comment. Additional entities may also be notified as needed. Agencies have ten (10) calendar days from the date of the ARC to contact the District and either provide comments or request an extension, not to exceed fifteen (15) calendar days. The Illinois Historic Preservation Agency and Indian Tribes have thirty (30) calendar days from the date of the ARC to provide comments. The District will fully consider agency comments received within the specified time frame. If the District determines that the activity complies with the terms and conditions of the RPP and impacts on aquatic resources are minimal, the District will notify the applicant in writing and include special conditions if deemed necessary. If the District determines the impacts of the proposed activity are more than minimal, the District will notify the applicant that the project does not qualify for authorization under the RPP and instruct the applicant on the procedures to seek authorization under an Individual Permit.

24. Compliance Certification - Any permittee who has received authorization under the RPP from the District must submit a signed certification stating that the authorized work has been completed. The certification will be forwarded by the District with the authorization letter and will include: a) a statement that the authorized work was done in accordance with the District's authorization, including any general or specific conditions; b) a statement that any required mitigation was completed in accordance with the permit conditions, and; c) the signature of the permittee certifying the completion of the work and mitigation.

25. Multiple use of Regional Permits - In any case where a Regional Permit is combined with any other Regional Permit to cover a single and complete project (except where prohibited under specific Regional Permits), the applicant must notify the District in accordance with General Condition 23. If multiple Regional Permits are used, the total impact may not exceed the maximum allowed by the Regional Permit with the greatest impact threshold.

26. Other Restrictions - Authorization under the RPP does not obviate the need to obtain other Federal, State or local permits, approvals, or authorizations required by law nor does it grant any property rights or exclusive privileges, authorize any injury to the property or rights of others or authorize interference with any existing or proposed Federal project.

Approved by:

//ORIGINAL SIGNED/ March 23, 2017

Christopher T. Drew
Colonel, U.S. Army
District Commander

Date

Kane – DuPage Soil & Water Conservation District

February 13, 2018

Logan Gilbertsen, P.E.
HR Green, Inc.
420 N. Front Street, Suite 100
McHenry, IL 60050

KDSWCD File: 18e003
USACE Permit Number: LRC-2018-00104
KDSWCD Approved: 2/13/18

Dear Mr. Gilbertsen:

I received your soil erosion and sedimentation control plan submittal for the 7th Avenue Creek Drainage Improvements at John Deutsch Culvert project located in St. Charles, Illinois. **KDSWCD approval is contingent upon:**

1. If the plans require revision based on the concurrent review by USACE and these revisions result in significant changes to the plans, revised plans must be submitted to KDSWCD for re-review.

2. The exact means, methods, and locations for dewatering and/or in-stream work materials should be coordinated with and approved by KDSWCD prior to the commencement of construction.

This letter and a set of plans located at the construction site, will serve to certify that the erosion and sediment control plans meet Technical Standards. Thank you for incorporating our comments into the plan, it will improve the quality of protection for the natural resources, both on and off site. I will visit the site during the course of construction to assess compliance with the specifications and will be glad to address specific issues that may arise during the course of construction. Please note that a preconstruction notification deposit has been withheld for this project. The deposit will be refunded once KDSWCD has been notified of construction commencement (in writing) approximately one week prior to the start of construction.

Sincerely,

Patrick J. McPartlan
Resource Analyst

ECC: Kimberly Kubiak, USACE
Keith Wozniak, USACE