INSTRUCTIONS

ABOUT IDOT PROPOSALS: All proposals are potential bidding proposals. Each proposal contains all certifications and affidavits, a proposal signature sheet and a proposal bid bond.

PREQUALIFICATION

Any contractor who desires to become pre-qualified to bid on work advertised by IDOT must submit the properly completed pre-qualification forms to the Bureau of Construction no later than 4:30 p.m. prevailing time twenty-one days prior to the letting of interest. This pre-qualification requirement applies to first time contractors, contractors renewing expired ratings, contractors maintaining continuous pre-qualification or contractors requesting revised ratings. To be eligible to bid, existing pre-qualification ratings must be effective through the date of letting.

WHO CAN BID ?

Bids will be accepted from only those companies that request and receive written Authorization to Bid from IDOT's Central Bureau of Construction.

REQUESTS FOR AUTHORIZATION TO BID

Contractors wanting to bid on items included in a particular letting must submit the properly completed "Request for Authorization to Bid/or Not For Bid Status" (BDE 124) and the ORIGINAL "Affidavit of Availability" (BC 57) to the proper office no later than 4:30 p.m. prevailing time, three (3) days prior to the letting date.

WHAT CONSTITUTES WRITTEN AUTHORIZATION TO BID?: When a prospective prime bidder submits a "Request for Authorization to Bid/or Not For Bid Status"(BDE 124) he/she must indicate at that time which items are being requested For Bidding purposes. Only those items requested For Bidding will be analyzed. After the request has been analyzed, the bidder will be issued an **Authorization to Bid or Not for Bid Report**, approved by the Central Bureau of Construction and the Chief Procurement Officer that indicates which items have been approved For Bidding. If **Authorization to Bid** cannot be approved, the **Authorization to Bid or Not for Bid Report** will indicate the reason for denial.

ABOUT AUTHORIZATION TO BID: Firms that have not received an Authorization to Bid or Not For Bid Report within a reasonable time of complete and correct original document submittal should contact the department as to the status. Firms unsure as to authorization status should call the Prequalification Section of the Bureau of Construction at the number listed at the end of these instructions. These documents must be received three days before the letting date.

ADDENDA AND REVISIONS: It is the bidder's responsibility to determine which, if any, addenda or revisions pertain to any project they may be bidding. Failure to incorporate all relevant addenda or revisions may cause the bid to be declared unacceptable.

Each addendum or revision will be included with the Electronic Plans and Proposals. Addenda and revisions will also be placed on the Addendum/Revision Checklist and each subscription service subscriber will be notified by e-mail of each addendum and revision issued.

The Internet is the Department's primary way of doing business. The subscription service emails are an added courtesy the Department provides. It is suggested that bidders check IDOT's website at http://www.dot.il.gov/desenv/delett.html before submitting final bid information.

IDOT IS NOT RESPONSIBLE FOR ANY E-MAIL FAILURES.

Addenda questions may be directed to the Contracts Office at (217)782-7806 or D&Econtracts@dot.il.gov

Technical questions about downloading these files may be directed to Tim Garman at (217)524-1642 or Timothy.Garman@illinois.gov.

BID SUBMITTAL GUIDELINES AND CHECKLIST

In an effort to eliminate confusion and standardize the bid submission process the Contracts Office has created the following guidelines and checklist for submitting bids.

This information has been compiled from questions received from contractors and from inconsistencies noted on submitted bids. If you have additional questions please refer to the contact information listed below.

ABOUT SUBMITTING BIDS: It is recommended that bidders deliver bid proposals in person to ensure they arrive at the proper location prior to the time specified for the receipt of bids. Any proposals received at the place of letting after the time specified will not be read.

STANDARD GUIDELINES FOR SUBMITTING BIDS

- All pages should be single sided.
- Use the Cover Page that is provided in the Bid Proposal (posted on the IDOT Web Site) as the first page of your submitted bid. This page has the Item number in the upper left-hand corner and lines provided for your company name and address in the upper right-hand corner.
- Do not use report covers, presentation folders or special bindings and do not staple multiple times on left side like a book. Use only 1 staple in the upper left hand corner. Make sure all elements of your bid are stapled together including the bid bond or guaranty check (if required).
- Do not include any certificates of eligibility, your authorization to bid, Addendum Letters or affidavit of availability.
- Do not include the Subcontractor Documentation with your bid (pages i – iii and pages a – g). This documentation is required only after you are awarded the contract.
- Use the envelope cover sheet (provided with the proposal) as the cover for the proposal envelope.
- Do not rely on overnight services to deliver your proposal prior to 10 AM on letting day. It will not be read if it is delivered after 10 AM.
- Do not submit your Substance Abuse Prevention Program (SAPP) with your bid. If you are awarded the contract this form is to be submitted to the district engineer at the pre-construction conference.

Use the following checklist to ensure completeness and the correct order in assembling your bid

☐ **Illinois Office Affidavit** (Not applicable to federally funded projects) insert your affidavit after page 4 along with your Cost Adjustments for Steel, Bituminous and Fuel (if applicable).

☐ **Cover page** (the sheet that has the item number on it) **followed by your bid (the Pay Items).** If you are using special software or CBID to generate your schedule of prices, do not include the blank pages of the schedule of prices that came with the proposal package.

☐ **Page 4 (Item 9)** – Check "YES" if you will use a subcontractor(s). Include the subcontractor(s) name, address, general type of work to be performed and the dollar amount (if over $50,000). If you will use subcontractor(s) but are uncertain who or the dollar amount; check "YES" but leave the lines blank.

☐ **Page 10 (Paragraph J)** – Check "YES" or "NO" whether your company has any business in Iran.

☐ **Page 10 (Paragraph K)** – (Not applicable to federally funded projects) List the Union Local Name and number or certified training programs that you have in place. **Your bid will not be read if this is not completed.** Do not include certificates with your bid. Keep the certificates in your office in case they are requested by IDOT.

☐ **Page 11 (Paragraph L)** - A copy of your State Board of Elections certificate of registration is no longer required with your bid.

☐ **Page 11 (Paragraph M)** – Indicate if your company has hired a lobbyist in connection with the job for which you are submitting the bid proposal.

☐ **Page 12 (Paragraph C)** – This is a work sheet to determine if a completed Form A is required. It is not part of the form and you do not need to make copies for each Form A that is filled out.

☐ **Pages 14-17 (Form A)** – One Form A (4 pages) is required for each applicable person in your company. Copies of the Forms can be used and only need to be changed when the financial information changes. The certification signature and date must be original for each letting. Do not staple the forms together.

If you answered "NO" to all of the questions in Paragraph C (page 12), complete the first section (page 14) with your company information and then sign and date the Not Applicable statement on page 17.

☐ **Page 18 (Form B)** - If you check "YES" to having other current or pending contracts it is acceptable to use the phrase, "See Affidavit of Availability on file". **Ownership Certification** (at the bottom of the page) - Check N/A if the Form A you submitted accounts for 100 percent of the company ownership. Check YES if any percentage of ownership falls outside of the parameters that require reporting on the Form A. Checking NO indicates that the Form A you submitted is not correct and you will be required to submit a revised Form A.

☐ **Page 20 (Workforce Projection)** – Be sure to include the Duration of the Project. It is acceptable to use the phrase "Per Contract Specifications".

☐ **Bid Bond –** Submit your bid bond using the current Bid Bond Form provided in the proposal package. The Power of Attorney page should be stapled to the Bid Bond. If you are using an electronic bond, include your bid bond number on the form and attach the Proof of Insurance printed from the electronic bond Web Site.

☐ **Disadvantaged Business Utilization Plan and/or Good Faith Effort –** The last item in your bid should be the DBE Utilization Plan (SBE 2026), followed by the DBE Participation Statement (SBE 2025) and supporting paperwork. If you have documentation for a Good Faith Effort, it should follow the SBE Forms.

The Bid Letting is now available in streaming Audio/Video from the IDOT Web Site. A link to the stream will be placed on the main page of the current letting on the day of the Letting. The stream will not begin until 10 AM. The actual reading of the bids does not begin until approximately 10:20 AM.

Following the Letting, the As-Read Tabulation of Bids will be posted by the end of the day. You will find the link on the main page of the current letting.

QUESTIONS: pre-letting up to execution of the contract

Contractor/Subcontractor pre-qualification ---------- 217-782-3413
Small Business, Disadvantaged Business Enterprise (DBE) ---------- 217-785-4611
Contracts, Bids, Letting process or Internet downloads ---------- 217-782-7806
Estimates Unit ---------- 217-785-3483
Aeronautics ---------- 217-785-8515
IDNR (Land Reclamation, Water Resources, Natural Resources) ---------- 217-782-6302

QUESTIONS: following contract execution

Including Subcontractor documentation, payments ---------- 217-782-3413
Railroad Insurance ---------- 217-785-0275

RETURN WITH BID

175

Proposal Submitted By
Name
Address
City

Letting April 26, 2013

NOTICE TO PROSPECTIVE BIDDERS
This proposal can be used for bidding purposes by only those companies that request and receive written AUTHORIZATION TO BID from IDOT's Central Bureau of Construction.
BIDDERS NEED NOT RETURN THE ENTIRE PROPOSAL

Notice to Bidders, Specifications, Proposal, Contract and Contract Bond

Illinois Department of Transportation

Springfield, Illinois 62764

Contract No. 63745
KANE County
Section 95-00049-00-PV (Carpentersville)
Route FAU 4006 (Maple Avenue)
Project TE-M-8003(095)
District 1 Construction Funds

PLEASE MARK THE APPROPRIATE BOX BELOW:

☐ A Bid Bond is included.

☐ A Cashier's Check or a Certified Check is included

Prepared by

Checked by F

(Printed by authority of the State of Illinois)

Page intentionally left blank

RETURN WITH BID

Illinois Department of Transportation

PROPOSAL

TO THE DEPARTMENT OF TRANSPORTATION

1. Proposal of _____

   _____

Taxpayer Identification Number (Mandatory) _____

For the improvement identified and advertised for bids in the Invitation for Bids as:

Contract No. 63745
KANE County
Section 95-00049-00-PV (Carpentersville)
Project TE-M-8003(095)
Route FAU 4006 (Maple Avenue)
District 1 Construction Funds

Full depth pavement reconstruction, storm sewer, water main, sanitary sewer, three sided structure replacement, street lighting and a HMA pedestrian path, from Washington Street to L.W, Besinger Dr. in the Village of Carpentersville.

2. The undersigned bidder will furnish all labor, material and equipment to complete the above described project in a good and workmanlike manner as provided in the contract documents provided by the Department of Transportation. This proposal will become part of the contract and the terms and conditions contained in the contract documents shall govern performance and payments.

3. **ASSURANCE OF EXAMINATION AND INSPECTION/WAIVER.** The undersigned further declares that he/she has carefully examined the proposal, plans, specifications, addenda form of contract and contract bond, and special provisions, and that he/she has inspected in detail the site of the proposed work, and that he/she has familiarized themselves with all of the local conditions affecting the contract and the detailed requirements of construction, and understands that in making this proposal he/she waives all right to plead any misunderstanding regarding the same.

4. **EXECUTION OF CONTRACT AND CONTRACT BOND.** The undersigned further agrees to execute a contract for this work and present the same to the department within fifteen (15) days after the contract has been mailed to him/her. The undersigned further agrees that he/she and his/her surety will execute and present within fifteen (15) days after the contract has been mailed to him/her contract bond satisfactory to and in the form prescribed by the Department of Transportation, in the penal sum of the full amount of the contract, guaranteeing the faithful performance of the work in accordance with the terms of the contract.

5. **PROPOSAL GUARANTY.** Accompanying this proposal is either a bid bond on the department form, executed by a corporate surety company satisfactory to the department, or a proposal guaranty check consisting of a bank cashier's check or a properly certified check for not less than 5 per cent of the amount bid or for the amount specified in the following schedule:

Amount of Bid			Proposal Guaranty	Amount of Bid			Proposal Guaranty
Up to		$5,000	$150	$2,000,000	to	$3,000,000	$100,000
$5,000	to	$10,000	$300	$3,000,000	to	$5,000,000	$150,000
$10,000	to	$50,000	$1,000	$5,000,000	to	$7,500,000	$250,000
$50,000	to	$100,000	$3,000	$7,500,000	to	$10,000,000	$400,000
$100,000	to	$150,000	$5,000	$10,000,000	to	$15,000,000	$500,000
$150,000	to	$250,000	$7,500	$15,000,000	to	$20,000,000	$600,000
$250,000	to	$500,000	$12,500	$20,000,000	to	$25,000,000	$700,000
$500,000	to	$1,000,000	$25,000	$25,000,000	to	$30,000,000	$800,000
$1,000,000	to	$1,500,000	$50,000	$30,000,000	to	$35,000,000	$900,000
$1,500,000	to	$2,000,000	$75,000	over		$35,000,000	$1,000,000

Bank cashier's checks or properly certified checks accompanying proposals shall be made payable to the Treasurer, State of Illinois, when the state is awarding authority; the county treasurer, when a county is the awarding authority; or the city, village, or town treasurer, when a city, village, or town is the awarding authority.

If a combination bid is submitted, the proposal guaranties which accompany the individual proposals making up the combination will be considered as also covering the combination bid.

The amount of the proposal guaranty check is _____ $( ). If this proposal is accepted and the undersigned shall fail to execute a contract bond as required herein, it is hereby agreed that the amount of the proposal guaranty shall become the property of the State of Illinois, and shall be considered as payment of damages due to delay and other causes suffered by the State because of the failure to execute said contract and contract bond; otherwise, the bid bond shall become void or the proposal guaranty check shall be returned to the undersigned.

Attach Cashier's Check or Certified Check Here

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 guaranty check is placed in another proposal, state below where it may be found.

The proposal guaranty check will be found in the proposal for: Item _____

Section No. _____

County _____

Mark the proposal cover sheet as to the type of proposal guaranty submitted.

6. **COMBINATION BIDS.** The undersigned further agrees that if awarded the contract for the sections contained in the following combination, he/she will perform the work in accordance with the requirements of each individual proposal comprising the combination bid specified in the schedule below, and that the combination bid shall be prorated against each section in proportion to the bid submitted for the same. If an error is found to exist in the gross sum bid for one or more of the individual sections included in a combination, the combination bid shall be corrected as provided in the specifications.

When a combination bid is submitted, the schedule below must be completed in each proposal comprising the combination.

If alternate bids are submitted for one or more of the sections comprising the combination, a combination bid must be submitted for each alternate.

Schedule of Combination Bids

Combination No.	Sections Included in Combination	Combination Bid Dollars	Cents

7. **SCHEDULE OF PRICES.** The undersigned bidder submits herewith, in accordance with the rules and instructions, a schedule of prices for the items of work for which bids are sought. The unit prices bid are in U.S. dollars and cents, and all extensions and summations have been made. The bidder understands that the quantities appearing in the bid schedule are approximate and are provided for the purpose of obtaining a gross sum for the comparison of bids. If there is an error in the extension of the unit prices, the unit prices shall govern. Payment to the contractor awarded the contract will be made only for 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 provided elsewhere in the contract.

8. **AUTHORITY TO DO BUSINESS IN ILLINOIS.** Section 20-43 of the Illinois Procurement Code (the Code) (30 ILCS 500/20-43) provides that a person (other than an individual acting as a sole proprietor) must be a legal entity authorized to do business in the State of Illinois prior to submitting the bid.

9. **The services of a subcontractor will be used.**

Check box Yes ☐
Check box No ☐

For known subcontractors with subcontracts with an annual value of more than $50,000, the contract shall include their name, address, general type of work to be performed, and the dollar allocation for each subcontractor. (30 ILCS 500/20-120)

_____

_____

10. **EXECUTION OF CONTRACT**: The Department of Transportation will, in accordance with the rules governing Department procurements, execute the contract and shall be the sole entity having the authority to accept performance and make payments under the contract. Execution of the contract by the Chief Procurement Officer (CPO) or the State Purchasing Officer (SPO) is for approval of the procurement process and execution of the contract by the Department. Neither the CPO nor the SPO shall be responsible for administration of the contract or determinations respecting performance or payment there under except as otherwise permitted in the Code.

STATE JOB #- C-91-399-01
PPS NBR -

COUNTY NAME	CODE	DIST	SECTION NUMBER	PROJECT NUMBER	ROUTE
KANE	089	01	95-00049-00-PV CARPENTERSVILLE	TE-M-8003/095/000	FAU 4006

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
A2000116	T-ACERX FREM AB 2	EACH	1.000			X =		
A2001016	T-ACER RUBRM 2	EACH	1.000			X =		
A2001612	T-ACER SACC MRTN 2	EACH	2.000			X =		
A2002516	T-CARP CAROL 2	EACH	2.000			X =		
A2004568	T-GINKGO BIL MA 3	EACH	1.000			X =		
A2004616	T-GLEDIT TRI IN 2	EACH	1.000			X =		
A2004816	T-GLED TRI-I SK 2	EACH	1.000			X =		
A2005016	T-GYMNOCLA DIO 2	EACH	1.000			X =		
A2005816	T-PLATANUS OCC 2	EACH	1.000			X =		
A2005916	T-PLAT X ACR BG 2	EACH	1.000			X =		
A2006516	T-QUERCUS BICOL 2	EACH	1.000			X =		
A2006916	T-QUERCUS PALUS 2	EACH	1.000			X =		
A2007016	T-QUERC ROB FAS 2	EACH	3.000			X =		
A2007116	T-QUERCUS RUBRA 2	EACH	1.000			X =		
A2007816	T-TILIA AMER 2	EACH	1.000			X =		

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY		UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
A2007916	T-TILIA AMER RD 2	EACH	1.000	X			=		
A2008016	T-TILIA CORDATA 2	EACH	1.000	X			=		
A2008116	T-TILIA CORD GS 2	EACH	1.000	X			=		
A2008722	T-ULMUS PTRT ELM 2	EACH	1.000	X			=		
A2008820	T-ULMUS CARP HS 2-1/2	EACH	1.000	X			=		
B2001616	T-CRAT CRU-I TF 2	EACH	2.000	X			=		
B2002916	T-MALUS BEVR TF 2	EACH	2.000	X			=		
B2004516	T-MALUS R J TF 2	EACH	2.000	X			=		
B2005138	T-MALUS SS 3	EACH	1.000	X			=		
B2006316	T-SYRG RT IS TF 2	EACH	3.000	X			=		
B2010016	T-AMELAN CAN TF 2	EACH	2.000	X			=		
C2011448	S-SYRINGA VULG 4'	EACH	50.000	X			=		
K0029634	WEED CONTR PRE-EM GRN	POUND	2.000	X			=		
XX001490	GATE VALVES 8	EACH	15.000	X			=		
XX002982	GATE VALVES 6	EACH	8.000	X			=		

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
XX005476	D I WM 12 RJ	FOOT	120.000			X =		
XX005478	D I WM 6 RJ	FOOT	350.000			X =		
XX005479	D I WM 8 RJ	FOOT	650.000			X =		
XX005480	D I WM 16 RJ	FOOT	2,210.000			X =		
XX005884	GROUT ABANDON SEWERS	FOOT	134.000			X =		
XX006586	PVC CASING PIPE 30	FOOT	80.000			X =		
XX007021	PED ACT CRSS WARN SYS	EACH	1.000			X =		
XX007500	SAN SEW OC 8 PVC 0-8	FOOT	320.000			X =		
XX007501	SAN SEW OC 8 PVC 8-12	FOOT	130.000			X =		
XX007502	SAN SEW OC 8 PV 12-16	FOOT	20.000			X =		
XX007503	SAN SEW SER OC 6 PVC	FOOT	690.000			X =		
XX007504	SAN SEW SER RIS 6 PVC	FOOT	14.000			X =		
XX007505	SAN SERVICE FITTING	EACH	4.000			X =		
XX007512	TR BF SAN SEW 8 0-8	FOOT	980.000			X =		
XX007513	TR BF SAN SEW 8 8-12	FOOT	110.000			X =		

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY		UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
XX007514	TR BF SAN SEW 8 12-16	FOOT	30.000	X			=		
XX007682	GATE VALVES 16	EACH	15.000	X			=		
XX008196	TRENCH BACK WTRMN SPL	FOOT	3,580.000	X			=		
XX008839	WATER MAIN ABANDONED	L SUM	1.000	X			=		
XX008840	DECORATIVE CROSSWALK	SQ FT	318.000	X			=		
XX008841	WATER MAIN 8 D BORE	FOOT	60.000	X			=		
XX008842	SS RG CL A 1 EQRS 18	FOOT	105.000	X			=		
XX008843	SS RG CL A 1 EQRS 30	FOOT	504.000	X			=		
XX008844	SS RG CL A 2 EQRS 30	FOOT	15.000	X			=		
X0322463	CONN TO EXIST SEWER	EACH	24.000	X			=		
X0323577	SAN SEW TV INSP VT RC	FOOT	4,150.000	X			=		
X0324585	SAN SEW SERV REM/REPL	EACH	8.000	X			=		
X0324878	ADJ SAN SEW SERV LINE	EACH	15.000	X			=		
X0325323	MAN TA SAN 4 D T1F CL	EACH	1.000	X			=		
X0325340	FIRE HYD W/6 V & VB	EACH	23.000	X			=		

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY		UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
X0326671	CONC SURF COLOR TRMNT	SQ FT	1,204.000	X			=		
X0327084	AUX VLV BOX EXTENSION	FOOT	28.000	X			=		
X0327123	CUR-IN-PL PIPE LNR 8	FOOT	4,820.000	X			=		
X0327131	DRAIN STRUCTURES N1	EACH	2.000	X			=		
X0327132	DRAIN STRUCTURES N2	EACH	1.000	X			=		
X0327203	CASING PIPE OC 24 STL	FOOT	30.000	X			=		
X2130010	EXPLOR TRENCH SPL	FOOT	500.000	X			=		
X4021000	TEMP ACCESS- PRIV ENT	EACH	28.000	X			=		
X4022000	TEMP ACCESS- COM ENT	EACH	12.000	X			=		
X4023000	TEMP ACCESS- ROAD	EACH	19.000	X			=		
X5610004	D I WTR MN FITTINGS	POUND	44,900.000	X			=		
X5610009	PIPE INSULATION SYST	FOOT	100.000	X			=		
X5610016	WATER MAIN 16 D BORE	FOOT	3,220.000	X			=		
X5610640	PLUG EX WATER MAIN	EACH	1.000	X			=		
X5610744	WM LINE STOP 4	EACH	9.000	X			=		

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
X5610746	WM LINE STOP 6	EACH	6.000			X =		
X5610748	WM LINE STOP 8	EACH	16.000			X =		
X5610752	WM LINE STOP 12	EACH	1.000			X =		
X5620030	WAT SER CONN 1	EACH	24.000			X =		
X5620035	WAT SER CONN 1 1/2	EACH	2.000			X =		
X5620040	WAT SER CONN 2	EACH	5.000			X =		
X5630704	CONN TO EX W MAIN 4	EACH	4.000			X =		
X5630706	CONN TO EX W MAIN 6	EACH	9.000			X =		
X5630708	CONN TO EX W MAIN 8	EACH	10.000			X =		
X5630712	CONN TO EX W MAIN 12	EACH	1.000			X =		
X6011705	PIPE DRAINS 6 SPL	FOOT	100.000			X =		
X6024242	INLETS SPL N1	EACH	1.000			X =		
X6024244	INLETS SPL N2	EACH	18.000			X =		
X6026051	SAN MAN RECONST	EACH	1.000			X =		
X6026623	VALVE BOX	EACH	4.000			X =		

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY		UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
X7010216	TRAF CONT & PROT SPL	L SUM	1.000	X			=		
X8300001	LIGHT POLE SPECIAL	EACH	4.000	X			=		
X8360215	LIGHT POLE FDN 24D OS	FOOT	70.000	X			=		
Z0004522	HMA DRIVEWAY PAVT 6	SQ YD	117.000	X			=		
Z0004530	HMA DRIVEWAY PAVT 8	SQ YD	60.000	X			=		
Z0013798	CONSTRUCTION LAYOUT	L SUM	1.000	X			=		
Z0017400	DRAIN UTIL STR ADJ	EACH	48.000	X			=		
Z0030850	TEMP INFO SIGNING	SQ FT	291.000	X			=		
Z0038127	3-SIDED PCC STR 18X8	FOOT	100.000	X			=		
Z0045800	PRESS VALVE INSERT 8	EACH	1.000	X			=		
Z0055905	TEMP CONSTR FENCE	FOOT	400.000	X			=		
Z0056608	STORM SEW WM REQ 12	FOOT	881.000	X			=		
Z0056610	STORM SEW WM REQ 15	FOOT	591.000	X			=		
Z0056612	STORM SEW WM REQ 18	FOOT	88.000	X			=		
Z0056635	SS WM REQ EQRS 30	FOOT	250.000	X			=		

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY		UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
Z0062456	TEMP PAVEMENT	SQ YD	3,627.000	X			=		
Z0064560	SEGMENT BLK RET WALL	SQ FT	3,888.000	X			=		
Z0076600	TRAINEES	HOUR	500.000	X		0.80	=	400.00	
Z0076604	TRAINEES TPG	HOUR	500.000	X		10.00	=	5,000.00	
20100110	TREE REMOV 6-15	UNIT	262.000	X			=		
20100210	TREE REMOV OVER 15	UNIT	267.000	X			=		
20101100	TREE TRUNK PROTECTION	EACH	70.000	X			=		
20101200	TREE ROOT PRUNING	EACH	70.000	X			=		
20101400	NITROGEN FERT NUTR	POUND	396.000	X			=		
20101500	PHOSPHORUS FERT NUTR	POUND	396.000	X			=		
20101600	POTASSIUM FERT NUTR	POUND	396.000	X			=		
20200100	EARTH EXCAVATION	CU YD	16,223.000	X			=		
20201200	REM & DISP UNS MATL	CU YD	8,923.000	X			=		
20300100	CHANNEL EXCAVATION	CU YD	780.000	X			=		
20800150	TRENCH BACKFILL	CU YD	4,423.000	X			=		

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
21001000	GEOTECH FAB F/GR STAB	SQ YD	30,085.000			X =		
21101625	TOPSOIL F & P 6	SQ YD	22,689.000			X =		
25000110	SEEDING CL 1A	ACRE	4.400			X =		
25000312	SEEDING CL 4A	ACRE	0.400			X =		
25000314	SEEDING CL 4B	ACRE	0.400			X =		
25000324	SEEDING CL 5B	ACRE	0.400			X =		
25100115	MULCH METHOD 2	ACRE	4.800			X =		
25100630	EROSION CONTR BLANKET	SQ YD	22,689.000			X =		
25200200	SUPPLE WATERING	UNIT	70.000			X =		
28000250	TEMP EROS CONTR SEED	POUND	480.000			X =		
28000305	TEMP DITCH CHECKS	FOOT	510.000			X =		
28000400	PERIMETER EROS BAR	FOOT	7,126.000			X =		
28000510	INLET FILTERS	EACH	122.000			X =		
28100107	STONE RIPRAP CL A4	SQ YD	448.000			X =		
28200200	FILTER FABRIC	SQ YD	448.000			X =		

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
30300001	AGG SUBGRADE IMPROVE	CU YD	6,604.000			X =		
30300112	AGG SUBGRADE IMPR 12	SQ YD	30,085.000			X =		
35101600	AGG BASE CSE B 4	SQ YD	3,882.000			X =		
35101800	AGG BASE CSE B 6	SQ YD	5,571.000			X =		
40600200	BIT MATLS PR CT	TON	83.000			X =		
40600300	AGG PR CT	TON	160.000			X =		
40600895	CONSTRUC TEST STRIP	EACH	1.000			X =		
40603080	HMA BC IL-19.0 N50	TON	722.000			X =		
40603335	HMA SC "D" N50	TON	482.000			X =		
40701871	HMA PAVT FD 9 1/2	SQ YD	22,456.000			X =		
42000211	PCC PVT 7 1/2 JOINTD	SQ YD	2,385.000			X =		
42001300	PROTECTIVE COAT	SQ YD	11,336.000			X =		
42300200	PCC DRIVEWAY PAVT 6	SQ YD	668.000			X =		
42300400	PCC DRIVEWAY PAVT 8	SQ YD	1,495.000			X =		
42400200	PC CONC SIDEWALK 5	SQ FT	14,413.000			X =		

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY		UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
42400800	DETECTABLE WARNINGS	SQ FT	620.000	X			=		
44000100	PAVEMENT REM	SQ YD	29,586.000	X			=		
44000200	DRIVE PAVEMENT REM	SQ YD	2,426.000	X			=		
44000300	CURB REM	FOOT	77.000	X			=		
44000500	COMB CURB GUTTER REM	FOOT	4,748.000	X			=		
44000600	SIDEWALK REM	SQ FT	15,628.000	X			=		
44201747	CL D PATCH T4 8	SQ YD	42.000	X			=		
50100300	REM EXIST STRUCT N1	EACH	1.000	X			=		
50105220	PIPE CULVERT REMOV	FOOT	597.000	X			=		
50300225	CONC STRUCT	CU YD	179.200	X			=		
50300285	FORM LINER TEX SURF	SQ FT	1,204.000	X			=		
50800105	REINFORCEMENT BARS	POUND	12,350.000	X			=		
50800205	REINF BARS, EPOXY CTD	POUND	900.000	X			=		
54213657	PRC FLAR END SEC 12	EACH	3.000	X			=		
54213660	PRC FLAR END SEC 15	EACH	1.000	X			=		

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
550A2320	SS RG CL A 1 12	FOOT	2,475.000			X =		
550A2330	SS RG CL A 1 15	FOOT	1,058.000			X =		
550A2340	SS RG CL A 1 18	FOOT	592.000			X =		
550A2360	SS RG CL A 1 24	FOOT	1,052.000			X =		
550A2520	SS RG CL A 2 12	FOOT	52.000			X =		
550A2530	SS RG CL A 2 15	FOOT	127.000			X =		
550A2560	SS RG CL A 2 24	FOOT	407.000			X =		
55100300	STORM SEWER REM 8	FOOT	469.000			X =		
55100400	STORM SEWER REM 10	FOOT	422.000			X =		
55100500	STORM SEWER REM 12	FOOT	675.000			X =		
55101100	STORM SEWER REM 21	FOOT	30.000			X =		
55101200	STORM SEWER REM 24	FOOT	85.000			X =		
56106200	ADJ WATER MAIN 4	FOOT	20.000			X =		
56106300	ADJ WATER MAIN 6	FOOT	40.000			X =		
56106400	ADJ WATER MAIN 8	FOOT	60.000			X =		

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
56200300	WATER SERV LINE 1	FOOT	660.000			X =		
56200500	WATER SERV LINE 1 1/2	FOOT	92.000			X =		
56200700	WATER SERV LINE 2	FOOT	321.000			X =		
56400810	FIRE HYDRANT EXTEN	FOOT	29.000			X =		
60107600	PIPE UNDERDRAINS 4	FOOT	600.000			X =		
60200805	CB TA 4 DIA T8G	EACH	4.000			X =		
60201105	CB TA 4 DIA T11F&G	EACH	1.000			X =		
60201340	CB TA 4 DIA T24F&G	EACH	18.000			X =		
60204505	CB TA 5 DIA T8G	EACH	1.000			X =		
60205040	CB TA 5 DIA T24F&G	EACH	4.000			X =		
60207605	CB TC T8G	EACH	7.000			X =		
60208240	CB TC T24F&G	EACH	35.000			X =		
60218400	MAN TA 4 DIA T1F CL	EACH	20.000			X =		
60221100	MAN TA 5 DIA T1F CL	EACH	17.000			X =		
60223800	MAN TA 6 DIA T1F CL	EACH	6.000			X =		

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
60236200	INLETS TA T8G	EACH	6.000			X =		
60236800	INLETS TA T11F&G	EACH	1.000			X =		
60237470	INLETS TA T24F&G	EACH	10.000			X =		
60240301	INLETS TB T8G	EACH	2.000			X =		
60240328	INLETS TB T24F&G	EACH	2.000			X =		
60248900	VV TA 5 DIA T1F CL	EACH	20.000			X =		
60249010	VV TA 6 DIA T1F CL	EACH	15.000			X =		
60402210	GRATES T8	EACH	1.000			X =		
60406100	FR & LIDS T1 CL	EACH	1.000			X =		
60500040	REMOV MANHOLES	EACH	1.000			X =		
60500050	REMOV CATCH BAS	EACH	8.000			X =		
60500060	REMOV INLETS	EACH	7.000			X =		
60603800	COMB CC&G TB6.12	FOOT	1,046.000			X =		
60605000	COMB CC&G TB6.24	FOOT	14,442.000			X =		
60900515	CONC THRUST BLOCKS	EACH	86.000			X =		

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
66300105	CALCIUM CHLORIDE APLD	TON	17.000			X =		
67100100	MOBILIZATION	L SUM	1.000			X =		
70300100	SHORT TERM PAVT MKING	FOOT	5,501.000			X =		
70300220	TEMP PVT MK LINE 4	FOOT	42,762.000			X =		
70300240	TEMP PVT MK LINE 6	FOOT	1,657.000			X =		
70300260	TEMP PVT MK LINE 12	FOOT	866.000			X =		
70300280	TEMP PVT MK LINE 24	FOOT	635.000			X =		
70301000	WORK ZONE PAVT MK REM	SQ FT	2,640.000			X =		
72000100	SIGN PANEL T1	SQ FT	499.000			X =		
72400100	REMOV SIN PAN ASSY TA	EACH	60.000			X =		
72400500	RELOC SIN PAN ASSY TA	EACH	7.000			X =		
72800100	TELES STL SIN SUPPORT	FOOT	1,258.000			X =		
78000200	THPL PVT MK LINE 4	FOOT	9,038.000			X =		
78000400	THPL PVT MK LINE 6	FOOT	1,657.000			X =		
78000600	THPL PVT MK LINE 12	FOOT	866.000			X =		

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY		UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
78000650	THPL PVT MK LINE 24	FOOT	360.000	X			=		
78005110	EPOXY PVT MK LINE 4	FOOT	1,550.000	X			=		
78300100	PAVT MARKING REMOVAL	SQ FT	2,090.000	X			=		
80400100	ELECT SERV INSTALL	EACH	2.000	X			=		
80400200	ELECT UTIL SERV CONN	L SUM	2.000	X	2,000	00	=	2,000	00
81028220	UNDRGRD C GALVS 3	FOOT	841.000	X			=		
81603100	UD 4#6#6GXLPUSE 1 1/4	FOOT	5,623.000	X			=		
82102150	LUM SV HOR MT 150W	EACH	49.000	X			=		
82500350	LT CONT BASEM 240V100	EACH	2.000	X			=		
83006300	LT P A 30MH 8MA	EACH	41.000	X			=		
83600200	LIGHT POLE FDN 24D	FOOT	338.000	X			=		

TOTAL $

NOTE:
*** PLEASE TURN PAGE FOR IMPORTANT NOTES ***

NOTE:

1. EACH PAY ITEM SHOULD HAVE A UNIT PRICE AND A TOTAL PRICE.

2. THE UNIT PRICE SHALL GOVERN IF NO TOTAL PRICE IS SHOWN OR IF THERE IS A DISCREPANCY BETWEEN THE PRODUCT OF THE UNIT PRICE MULTIPLIED BY THE QUANTITY.

3. IF A UNIT PRICE IS OMITTED, THE TOTAL PRICE WILL BE DIVIDED BY THE QUANTITY IN ORDER TO ESTABLISH A UNIT PRICE.

4. A BID MAY BE DECLARED UNACCEPTABLE IF NEITHER A UNIT PRICE NOR A TOTAL PRICE IS SHOWN.

RETURN WITH BID

STATE REQUIRED ETHICAL STANDARDS GOVERNING CONTRACT PROCUREMENT: ASSURANCES, CERTIFICATIONS AND DISCLOSURES

I. GENERAL

A. Article 50 of the Code establishes the duty of all State CPOs, SPOs, and their designees to maximize the value of the expenditure of public moneys in procuring goods, services, and contracts for the State of Illinois and to act in a manner that maintains the integrity and public trust of State government. In discharging this duty, they are charged by law to use all available information, reasonable efforts, and reasonable actions to protect, safeguard, and maintain the procurement process of the State of Illinois.

B. In order to comply with the provisions of Article 50 and to carry out the duty established therein, all bidders are to adhere to ethical standards established for the procurement process, and to make such assurances, disclosures and certifications required by law. Except as otherwise required in subsection III, paragraphs J-M, by execution of the Proposal Signature Sheet, the bidder indicates that each of the mandated assurances have been read and understood, that each certification is made and understood, and that each disclosure requirement has been understood and completed.

C. In addition to all other remedies provided by law, failure to comply with any assurance, failure to make any disclosure or the making of a false certification shall be grounds for the CPO to void the contract, and may result in the suspension or debarment of the bidder or subcontractor. If a false certification is made by a subcontractor the contractor's submitted bid and the executed contract may not be declared void unless the contractor refuses to terminate the subcontract upon the State's request after a finding that the subcontractor's certification was false.

II. ASSURANCES

The assurances 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.

A. Conflicts of Interest

1. The Code provides in pertinent part:

Section 50-13. Conflicts of Interest.

(a) Prohibition. It is unlawful for any person holding an elective office in this State, holding a seat in the General Assembly, or appointed to or employed in any of the offices or agencies of state government and who receives compensation for such employment in excess of 60% of the salary of the Governor of the State of Illinois, or who is an officer or employee of the Capital Development Board or the Illinois Toll Highway Authority, or who is the spouse or minor child of any such person to have or acquire any contract, or any direct pecuniary interest in any contract therein, whether for stationery, printing, paper, or any services, materials, or supplies, that will be wholly or partially satisfied by the payment of funds appropriated by the General Assembly of the State of Illinois or in any contract of the Capital Development Board or the Illinois Toll Highway authority.

(b) Interests. It is unlawful for any firm, partnership, association or corporation, in which any person listed in subsection (a) is entitled to receive (i) more than 7 1/2% of the total distributable income or (ii) an amount in excess of the salary of the Governor, to have or acquire any such contract or direct pecuniary interest therein.

(c) Combined interests. It is unlawful for any firm, partnership, association, or corporation, in which any person listed in subsection (a) together with his or her spouse or minor children is entitled to receive (i) more than 15%, in the aggregate, of the total distributable income or (ii) an amount in excess of 2 times the salary of the Governor, to have or acquire any such contract or direct pecuniary interest therein.

(d) Securities. Nothing in this Section invalidates the provisions of any bond or other security previously offered or to be offered for sale or sold by or for the State of Illinois.

(e) Prior interests. This Section does not affect the validity of any contract made between the State and an officer or employee of the State or member of the General Assembly, his or her spouse, minor child or any combination of those persons if that contract was in existence before his or her election or employment as an officer, member, or employee. The contract is voidable, however, if it cannot be completed within 365 days after the officer, member, or employee takes office or is employed.

The current salary of the Governor is $177,412.00. Sixty percent of the salary is $106,447.20.

2. The bidder assures the Department that the award and execution of the contract would not cause a violation of Section 50-13, or that an effective exemption has been issued by the Board of Ethics to any individual subject to the Section 50-13 prohibitions pursuant to the provisions of Section 50-20 of the Code and Executive Order Number 3 (1998). Information concerning the exemption process is available from the Department upon request.

B. Negotiations

1. The Code provides in pertinent part:

Section 50-15. Negotiations.

(a) It is unlawful for any person employed in or on a continual contractual relationship with any of the offices or agencies of State government to participate in contract negotiations on behalf of that office or agency with any firm, partnership, association, or corporation with whom that person has a contract for future employment or is negotiating concerning possible future employment.

2. The bidder assures the Department that the award and execution of the contract would not cause a violation of Section 50-15, and that the bidder has no knowledge of any facts relevant to the kinds of acts prohibited therein.

C. Inducements

1. The Code provides:

Section 50-25. Inducement. Any person who offers or pays any money or other valuable thing to any person to induce him or her not to bid for a State contract or as recompense for not having bid on a State contract is guilty of a Class 4 felony. Any person who accepts any money or other valuable thing for not bidding for a State contract or who withholds a bid in consideration of the promise for the payment of money or other valuable thing is guilty of a Class 4 felony.

2. The bidder assures the Department that the award and execution of the contract would not cause a violation of Section 50-25, and that the bidder has no knowledge of any facts relevant to the kinds of acts prohibited therein.

D. Revolving Door Prohibition

1. The Code provides:

Section 50-30. Revolving door prohibition. CPOs, SPOs, procurement compliance monitors, their designees whose principal duties are directly related to State procurement, and executive officers confirmed by the Senate are expressly prohibited for a period of 2 years after terminating an affected position from engaging in any procurement activity relating to the State agency most recently employing them in an affected position for a period of at least 6 months. The prohibition includes, but is not limited to: lobbying the procurement process; specifying; bidding; proposing bid, proposal, or contract documents; on their own behalf or on behalf of any firm, partnership, association, or corporation. This Section applies only to persons who terminate an affected position on or after January 15, 1999.

2. The bidder assures the Department that the award and execution of the contract would not cause a violation of Section 50-30, and that the bidder has no knowledge of any facts relevant to the kinds of acts prohibited therein.

E. Reporting Anticompetitive Practices

1. The Code provides:

Section 50-40. Reporting anticompetitive practices. When, for any reason, any vendor, bidder, contractor, CPO, SPO, designee, elected official, or State employee suspects collusion or other anticompetitive practice among any bidders, offerors, contractors, proposers, or employees of the State, a notice of the relevant facts shall be transmitted to the Attorney General and the CPO.

2. The bidder assures the Department that it has not failed to report any relevant facts concerning the practices addressed in Section 50-40 which may involve the contract for which the bid is submitted.

F. Confidentiality

1. The Code provides:

Section 50-45. Confidentiality. Any CPO, SPO, designee, or executive officer who willfully uses or allows the use of specifications, competitive bid documents, proprietary competitive information, proposals, contracts, or selection information to compromise the fairness or integrity of the procurement, bidding, or contract process shall be subject to immediate dismissal, regardless of the Personnel code, any contract, or any collective bargaining agreement, and may in addition be subject to criminal prosecution.

2. The bidder assures the Department that it has no knowledge of any fact relevant to the practices addressed in Section 50-45 which may involve the contract for which the bid is submitted.

G. Insider Information

1. The Code provides:

Section 50-50. Insider information. It is unlawful for any current or former elected or appointed State official or State employee to knowingly use confidential information available only by virtue of that office or employment for actual or anticipated gain for themselves or another person.

2. The bidder assures the Department that it has no knowledge of any facts relevant to the practices addressed in Section 50-50 which may involve the contract for which the bid is submitted.

III. CERTIFICATIONS

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. Section 50-2 of the Code provides that every person that has entered into a multi-year contract and every subcontractor with a multi-year subcontract shall certify, by July 1 of each fiscal year covered by the contract after the initial fiscal year, to the responsible CPO whether it continues to satisfy the requirements of Article 50 pertaining to the eligibility for a contract award. If a contractor or subcontractor is not able to truthfully certify that it continues to meet all requirements, it shall provide with its certification a detailed explanation of the circumstances leading to the change in certification status. A contractor or subcontractor that makes a false statement material to any given certification required under Article 50 is, in addition to any other penalties or consequences prescribed by law, subject to liability under the Whistleblower Reward and Protection Act for submission of a false claim.

A. Bribery

1. The Code provides:

Section 50-5. Bribery.

(a) Prohibition. No person or business shall be awarded a contract or subcontract under this Code who:

(1) has been convicted under the laws of Illinois or any other state of bribery or attempting to bribe an officer or employee of the State of Illinois or any other state in that officer's or employee's official capacity; or

(2) has made an admission of guilt of that conduct that is a matter of record but has not been prosecuted for that conduct.

(b) Businesses. No business shall be barred from contracting with any unit of State or local government, or subcontracting under such a contract, as a result of a conviction under this Section of any employee or agent of the business if the employee or agent is no longer employed by the business and:

(1) the business has been finally adjudicated not guilty; or

(2) the business demonstrates to the governmental entity with which it seeks to contract, or which is signatory to the contract which the subcontract relates, and that entity finds that the commission of the offense was not authorized, requested, commanded, or performed by a director, officer, or high managerial agent on behalf of the business as provided in paragraph (2) of subsection (a) of Section 5-4 of the Criminal Code of 1961.

(c) Conduct on behalf of business. For purposes of this Section, when an official, agent, or employee of a business committed the bribery or attempted bribery on behalf of the business and in accordance with the direction or authorization of a responsible official of the business, the business shall be chargeable with the conduct.

(d) Certification. Every bid submitted to and contract executed by the State, and every subcontract subject to Section 20-120 of the Code shall contain a certification by the contractor or the subcontractor, respectively, that the contractor or subcontractor is not barred from being awarded a contract or subcontract under this Section and acknowledges that the CPO may declare the related contract void if any certifications required by this Section are false. A contractor who makes a false statement, material to the certification, commits a Class 3 felony.

2. The contractor or subcontractor certifies that it is not barred from being awarded a contract under Section 50.5.

B. Felons

1. The Code provides:

Section 50-10. Felons. Unless otherwise provided, no person or business convicted of a felony shall do business with the State of Illinois or any State agency, or enter into a subcontract, from the date of conviction until 5 years after the date of completion of the sentence for that felony, unless no person held responsible by a prosecutorial office for the facts upon which the conviction was based continues to have any involvement with the business.

1. Certification. Every bid submitted to and contract executed by the State and every subcontract subject to Section 20-120 of the Code shall contain a certification by the bidder or contractor or subcontractor, respectively, that the bidder, contractor, or subcontractor is not barred from being awarded a contract or subcontract under this Section and acknowledges that the CPO may declare the related contract void if any of the certifications required by this Section are false.

C. Debt Delinquency

1. The Code provides:

Section 50-11 and 50-12. Debt Delinquency.

The contractor or bidder or subcontractor, respectively, certifies that it, or any affiliate, is not barred from being awarded a contract or subcontract under the Code. Section 50-11 prohibits a person from entering into a contract with a State agency, or entering into a subcontract, if it knows or should know that it, or any affiliate, is delinquent in the payment of any debt to the State as defined by the Debt Collection Board. Section 50-12 prohibits a person from entering into a contract with a State agency, or entering into a subcontract, if it, or any affiliate, has failed to collect and remit Illinois Use Tax on all sales of tangible personal property into the State of Illinois in accordance with the provisions of the Illinois Use Tax Act. The bidder or contractor or subcontractor, respectively, further acknowledges that the CPO may declare the related contract void if this certification is false or if the bidder, contractor, or subcontractor, or any affiliate, is determined to be delinquent in the payment of any debt to the State during the term of the contract.

D. Prohibited Bidders, Contractors and Subcontractors

1. The Code provides:

Section 50-10.5 and 50-60(c). Prohibited bidders, contractors and subcontractors.
The bidder or contractor or subcontractor, respectively, certifies in accordance with 30 ILCS 500/50-10.5 that no officer, director, partner or other managerial agent of the contracting business has been convicted of a felony under the Sarbanes-Oxley Act of 2002 or a Class 3 or Class 2 felony under the Illinois Securities Law of 1953 or if in violation of Subsection (c) for a period of five years from the date of conviction. Every bid submitted to and contract executed by the State and every subcontract subject to Section 20-120 of the Code shall contain a certification by the bidder, contractor, or subcontractor, respectively, that the bidder, contractor, or subcontractor is not barred from being awarded a contract or subcontract under this Section and acknowledges that the CPO shall declare the related contract void if any of the certifications completed pursuant to this Section are false.

E. Section 42 of the Environmental Protection Act

The bidder or contractor or subcontractor, respectively, certifies in accordance with 30 ILCS 500/50-14 that the bidder, contractor, or subcontractor, is not barred from being awarded a contract or entering into a subcontract under this Section which prohibits the bidding on or entering into contracts with the State of Illinois or a State agency, or entering into any subcontract, that is subject to the Code by a person or business found by a court or the Pollution Control Board to have committed a willful or knowing violation of Section 42 of the Environmental Protection Act for a period of five years from the date of the order. The bidder or contractor or subcontractor, respectively, acknowledges that the CPO may declare the contract void if this certification is false.

F. Educational Loan

1. Section 3 of the Educational Loan Default Act provides:

§ 3. No State agency shall contract with an individual for goods or services if that individual is in default, as defined in Section 2 of this Act, on an educational loan. Any contract used by any State agency shall include a statement certifying that the individual is not in default on an educational loan as provided in this Section.

2. The bidder, if an individual as opposed to a corporation, partnership or other form of business organization, certifies that the bidder is not in default on an educational loan as provided in Section 3 of the Act.

G. Bid-Rigging/Bid Rotating

1. Section 33E-11 of the Criminal Code of 1961 provides:

§ 33E-11. (a) Every bid submitted to and public contract executed pursuant to such bid by the State or a unit of local government shall contain a certification by the prime contractor that the prime contractor is not barred from contracting with any unit of State or local government as a result of a violation of either Section 33E-3 or 33E-4 of this Article. The State and units of local government shall provide the appropriate forms for such certification.

(b) A contractor who makes a false statement, material to the certification, commits a Class 3 felony.

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.

2. The bidder certifies that it is not barred from contracting with the Department by reason of a violation of either Section 33E-3 or Section 33E-4.

H. International Anti-Boycott

1. Section 5 of the International Anti-Boycott Certification Act provides:

§ 5. State contracts. Every contract entered into by the State of Illinois for the manufacture, furnishing, or purchasing of supplies, material, or equipment or for the furnishing of work, labor, or services, in an amount exceeding the threshold for small purchases according to the purchasing laws of this State or $10,000.00, whichever is less, shall contain certification, as a material condition of the contract, by which the contractor agrees that neither the contractor nor any substantially-owned affiliated company is participating or shall participate in an international boycott in violation of the provisions of the U.S. Export Administration Act of 1979 or the regulations of the U.S. Department of Commerce promulgated under that Act.

2. The bidder makes the certification set forth in Section 5 of the Act.

I. Drug Free Workplace

1. The Illinois “Drug Free Workplace Act” applies to this contract and it is necessary to comply with the provisions of the “Act” if the contractor is a corporation, partnership, or other entity (including a sole proprietorship) which has 25 or more employees.

2. The bidder certifies that if awarded a contract in excess of $5,000 it will provide a drug free workplace by:

(a) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensation, possession or use of a controlled substance, including cannabis, is prohibited in the contractor’s workplace; specifying the actions that will be taken against employees for violations of such prohibition; and notifying the employee that, as a condition of employment on such contract, the employee shall abide by the terms of the statement, and notify the employer of any criminal drug statute conviction for a violation occurring in the workplace no later than five (5) days after such conviction.

(b) Establishing a drug free awareness program to inform employees about the dangers of drug abuse in the workplace; the contractor’s policy of maintaining a drug free workplace; any available drug counseling, rehabilitation, and employee assistance programs; and the penalties that may be imposed upon employees for drug violations.

(c) Providing a copy of the statement required by subparagraph (1) to each employee engaged in the performance of the contract and to post the statement in a prominent place in the workplace.

(d) Notifying the Department within ten (10) days after receiving notice from an employee or otherwise receiving actual notice of the conviction of an employee for a violation of any criminal drug statute occurring in the workplace.

(e) Imposing or requiring, within 30 days after receiving notice from an employee of a conviction or actual notice of such a conviction, an appropriate personnel action, up to and including termination, or the satisfactory participation in a drug abuse assistance or rehabilitation program approved by a federal, state or local health, law enforcement or other appropriate agency.

(f) Assisting employees in selecting a course of action in the event drug counseling, treatment, and rehabilitation is required and indicating that a trained referral team is in place.

(g) Making a good faith effort to continue to maintain a drug free workplace through implementation of the actions and efforts stated in this certification.

J. Disclosure of Business Operations in Iran

Section 50-36 of the Code, 30ILCS 500/50-36 provides that each bid, offer, or proposal submitted for a State contract shall include a disclosure of whether or not the Company acting as the bidder, offeror, or proposing entity, or any of its corporate parents or subsidiaries, within the 24 months before submission of the bid, offer, or proposal had business operations that involved contracts with or provision of supplies or services to the Government of Iran, companies in which the Government of Iran has any direct or indirect equity share, consortiums or projects commissioned by the Government of Iran, or companies involved in consortiums or projects commissioned by the Government of Iran and either of the following conditions apply:

(1) More than 10% of the Company's revenues produced in or assets located in Iran involve oil-related activities or mineral-extraction activities; less than 75% of the Company's revenues produced in or assets located in Iran involve contracts with or provision of oil-related or mineral-extraction products or services to the Government of Iran or a project or consortium created exclusively by that government; and the Company has failed to take substantial action.

(2) The Company has, on or after August 5, 1996, made an investment of $20 million or more, or any combination of investments of at least $10 million each that in the aggregate equals or exceeds $20 million in any 12-month period, which directly or significantly contributes to the enhancement of Iran's ability to develop petroleum resources of Iran.

The terms “Business operations”, “Company”, “Mineral-extraction activities”, “Oil-related activities”, “Petroleum resources”, and “Substantial action” are all defined in the Code.

Failure to make the disclosure required by the Code shall cause the bid, offer or proposal to be considered not responsive. The disclosure will be considered when evaluating the bid, offer, or proposal or awarding the contract. The name of each Company disclosed as doing business or having done business in Iran will be provided to the State Comptroller.

Check the appropriate statement:

/___/ Company has no business operations in Iran to disclose.

/___/ Company has business operations in Iran as disclosed the attached document.

K. Apprenticeship and Training Certification (Does not apply to federal aid projects)

In accordance with the provisions of Section 30-22 (6) of the Code, the bidder certifies that it is a participant, either as an individual or as part of a group program, in the approved apprenticeship and training programs applicable to each type of work or craft that the bidder will perform with its own forces. The bidder further certifies for work that will be performed by subcontract that each of its subcontractors submitted for approval either (a) is, at the time of such bid, participating in an approved, applicable apprenticeship and training program; or (b) will, prior to commencement of performance of work pursuant to this contract, begin participation in an approved apprenticeship and training program applicable to the work of the subcontract. The Department, at any time before or after award, may require the production of a copy of each applicable Certificate of Registration issued by the United States Department of Labor evidencing such participation by the contractor and any or all of its subcontractors. Applicable apprenticeship and training programs are those that have been approved and registered with the United States Department of Labor. The bidder shall list in the space below, the official name of the program sponsor holding the Certificate of Registration for all of the types of work or crafts in which the bidder is a participant and that will be performed with the bidder’s forces. Types of work or craft work that will be subcontracted shall be included and listed as subcontract work. The list shall also indicate any type of work or craft job category that does not have an applicable apprenticeship or training program. **The bidder is responsible for making a complete report and shall make certain that each type of work or craft job category that will be utilized on the project as reported on the Construction Employee Workforce Projection (Form BC-1256) and returned with the bid is accounted for and listed.**

NA-FEDERAL

The requirements of this certification and disclosure are a material part of the contract, and the contractor shall require this certification provision to be included in all approved subcontracts. In order to fulfill this requirement, it shall not be necessary that an applicable program sponsor be currently taking or that it will take applications for apprenticeship, training or employment during the performance of the work of this contract.

L. Political Contributions and Registration with the State Board of Elections

Sections 20-160 and 50-37 of the Code regulate political contributions from business entities and any affiliated entities or affiliated persons bidding on or contracting with the state. Generally under Section 50-37, any business entity, and any affiliated entity or affiliated person of the business entity, whose current year contracts with all state agencies exceed an awarded value of $50,000, are prohibited from making any contributions to any political committees established to promote the candidacy of the officeholder responsible for the awarding of the contracts or any other declared candidate for that office for the duration of the term of office of the incumbent officeholder or a period 2 years after the termination of the contract, whichever is longer. Any business entity and affiliated entities or affiliated persons whose state contracts in the current year do not exceed an awarded value of $50,000, but whose aggregate pending bids and proposals on state contracts exceed $50,000, either alone or in combination with contracts not exceeding $50,000, are prohibited from making any political contributions to any political committee established to promote the candidacy of the officeholder responsible for awarding the pending contract during the period beginning on the date the invitation for bids or request for proposals is issued and ending on the day after the date of award or selection if the entity was not awarded or selected. Section 20-160 requires certification of registration of affected business entities in accordance with procedures found in Section 9-35 of The Election Code.

By submission of a bid, the contractor business entity acknowledges and agrees that it has read and understands Sections 20-160 and 50-37 of the Code, and that it makes the following certification:

The undersigned business entity certifies that it has registered as a business with the State Board of Elections and acknowledges a continuing duty to update the registration in accordance with the above referenced statutes. If the business entity is required to register, the CPO shall verify that it is in compliance on the date the bid or proposal is due. The CPO shall not accept a bid or proposal if the business entity is not in compliance with the registration requirements.

These requirements and compliance with the above referenced statutory sections are a material part of the contract, and any breach thereof shall be cause to void the contract under Section 50-60 of the Code. This provision does not apply to Federal-aid contracts.

M. Lobbyist Disclosure

Section 50-38 of the Code requires that any bidder or offeror on a State contract that hires a person required to register under the Lobbyist Registration Act to assist in obtaining a contract shall:

(i) Disclose all costs, fees, compensation, reimbursements, and other remunerations paid or to be paid to the lobbyist related to the contract,

(ii) Not bill or otherwise cause the State of Illinois to pay for any of the lobbyist's costs, fees, compensation, reimbursements, or other remuneration, and

(iii) Sign a verification certifying that none of the lobbyist's costs, fees, compensation, reimbursements, or other remuneration were billed to the State.

This information, along with all supporting documents, shall be filed with the agency awarding the contract and with the Secretary of State. The CPO shall post this information, together with the contract award notice, in the online Procurement Bulletin.

Pursuant to Subsection (c) of this Section, no person or entity shall retain a person or entity to attempt to influence the outcome of a procurement decision made under the Code for compensation contingent in whole or in part upon the decision or procurement. Any person who violates this subsection is guilty of a business offense and shall be fined not more than $10,000.

Bidder acknowledges that it is required to disclose the hiring of any person required to register pursuant to the Illinois Lobbyist Registration Act (25 ILCS 170) in connection with this contract.

☐ Bidder has not hired any person required to register pursuant to the Illinois Lobbyist Registration Act in connection with this contract.

Or

☐ Bidder has hired the following persons required to register pursuant to the Illinois Lobbyist Registration Act in connection with the contract:

Name and address of person: _____

All costs, fees, compensation, reimbursements and other remuneration paid to said person: _____

_____

_____

_____

IV. DISCLOSURES

A. The disclosures 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. The bidder further certifies that the Department has received the disclosure forms for each bid.

The CPO may void the bid, or contract, respectively, if it is later determined that the bidder or subcontractor rendered a false or erroneous disclosure. A contractor or subcontractor may be suspended or debarred for violations of the Code. Furthermore, the CPO may void the contract and the surety providing the performance bond shall be responsible for completion of the contract.

B. Financial Interests and Conflicts of Interest

1. Section 50-35 of the Code provides that all bids of more than $25,000 shall be accompanied by disclosure of the financial interests of the bidder. This disclosed information for the successful bidder, will be maintained as public information subject to release by request pursuant to the Freedom of Information Act, filed with the Procurement Policy Board, and shall be incorporated as a material term of the contract. Furthermore, pursuant to Section 5-5, the Procurement Policy Board may review a proposal, bid, or contract and issue a recommendation to void a contract or reject a proposal or bid based on any violation of the Code or the existence of a conflict of interest as provided in subsections (b) and (d) of Section 50-35.

The financial interests to be disclosed shall include ownership or distributive income share that is in excess of 5%, or an amount greater than 60% of the annual salary of the Governor, of the bidding entity or its parent entity, whichever is less, unless the contractor or bidder is a publicly traded entity subject to Federal 10K reporting, in which case it may submit its 10K disclosure in place of the prescribed disclosure. If a bidder is a privately held entity that is exempt from Federal 10K reporting, but has more than 200 shareholders, it may submit the information that Federal 10K companies are required to report, and list the names of any person or entity holding any ownership share that is in excess of 5%. The disclosure shall include the names, addresses, and dollar or proportionate share of ownership of each person making the disclosure, their instrument of ownership or beneficial relationship, and notice of any potential conflict of interest resulting from the current ownership or beneficial interest of each person making the disclosure having any of the relationships identified in Section 50-35 and on the disclosure form.
The current annual salary of the Governor is $177,412.00.

In addition, all disclosures shall indicate any other current or pending contracts, proposals, leases, or other ongoing procurement relationships the bidding entity has with any other unit of state government and shall clearly identify the unit and the contract, proposal, lease, or other relationship.

2. Disclosure Forms. Disclosure Form A is attached for use concerning the individuals meeting the above ownership or distributive share requirements. A separate Disclosure Form A must be submitted with the bid for each individual meeting the above requirements. In addition, a second form (Disclosure Form B) provides for the disclosure of current or pending procurement relationships with other (non-IDOT) state agencies and a total ownership certification. **The forms must be included with each bid.**

C. Disclosure Form Instructions

Form A Instructions for Financial Information & Potential Conflicts of Interest

If the bidder is a publicly traded entity subject to Federal 10K reporting, the 10K Report may be submitted to meet the requirements of Form A. If a bidder is a privately held entity that is exempt from Federal 10K reporting, but has more than 200 shareholders, it may submit the information that Federal 10K companies are required to report, and list the names of any person or entity holding any ownership share that is in excess of 5%. If a bidder is not subject to Federal 10K reporting, the bidder must determine if any individuals are required by law to complete a financial disclosure form. To do this, the bidder should answer each of the following questions. A "YES" answer indicates Form A must be completed. If the answer to each of the following questions is "NO", then the NOT APPLICABLE STATEMENT on Form A must be signed and dated by a person that is authorized to execute contracts for the bidding company. Note: These questions are for assistance only and are not required to be completed.

1. Does anyone in your organization have a direct or beneficial ownership share of greater than 5% of the bidding entity or parent entity? YES ___ NO ___
2. Does anyone in your organization have a direct or beneficial ownership share of less than 5%, but which has a value greater than 60% of the annual salary of the Governor? YES ___ NO___
3. Does anyone in your organization receive more than 60% of the annual salary of the Governor of the bidding entity's or parent entity's distributive income? YES ___ NO __
4. Does anyone in your organization receive greater than 5% of the bidding entity's or parent entity's total distributive income, but which is less than 60% of the annual salary of the Governor? YES ___ NO __

   (Note: Only one set of forms needs to be completed per person per bid even if a specific individual would require a yes answer to more than one question.)

A "YES" answer to any of these questions requires the completion of Form A. The bidder must determine each individual in the bidding entity or the bidding entity's parent company that would cause the questions to be answered "Yes". Each form must be signed and dated by a person that is authorized to execute contracts for your organization. **Photocopied or stamped signatures are not acceptable**. The person signing can be, but does not have to be, the person for which the form is being completed. The bidder is responsible for the accuracy of any information provided.

If the answer to each of the above questions is "NO", then the NOT APPLICABLE STATEMENT of Form A must be signed and dated by a person that is authorized to execute contracts for your company.

Form B: Instructions for Identifying Other Contracts & Procurement Related Information

Disclosure Form B must be completed for each bid submitted by the bidding entity. *Note: Checking the NOT APPLICABLE STATEMENT on Form A does not allow the bidder to ignore Form B. Form B must be completed, checked, and dated or the bidder may be considered nonresponsive and the bid will not be accepted.*

The Bidder shall identify, by checking Yes or No on Form B, whether it has any pending contracts (including leases), bids, proposals, or other ongoing procurement relationship with any other (non-IDOT) State of Illinois agency. If "No" is checked, the bidder only needs to complete the check box on the bottom of Form B. If "Yes" is checked, the bidder must do one of the following:

Option I: If the bidder did not submit an Affidavit of Availability to obtain authorization to bid, the bidder must list all non-IDOT State of Illinois agency pending contracts, leases, bids, proposals, and other ongoing procurement relationships. These items may be listed on Form B or on an attached sheet(s). Do not include IDOT contracts. Contracts with cities, counties, villages, etc. are not considered State of Illinois agency contracts and are not to be included. Contracts with other State of Illinois agencies such as the Department of Natural Resources or the Capital Development Board must be included. Bidders who submit Affidavits of Availability are suggested to use Option II.

Option II: If the bidder is required and has submitted an Affidavit of Availability in order to obtain authorization to bid, the bidder may write or type "See Affidavit of Availability" which indicates that the Affidavit of Availability is incorporated by reference and includes all non-IDOT State of Illinois agency pending contracts, leases, bids, proposals, and other ongoing procurement relationships. For any contracts that are not covered by the Affidavit of Availability, the bidder must identify them on Form B or on an attached sheet(s). These might be such things as leases.

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ILLINOIS DEPARTMENT OF TRANSPORTATION

Form A
Financial Information & Potential Conflicts of Interest Disclosure

Contractor Name		
Legal Address		
City, State, Zip		
Telephone Number	Email Address	Fax Number (if available)

Disclosure of the information contained in this Form is required by the Section 50-35 of the Code (30 ILCS 500). Vendors desiring to enter into a contract with the State of Illinois must disclose the financial information and potential conflict of interest information as specified in this Disclosure Form. This information shall become part of the publicly available contract file. This Form A must be completed for bids in excess of $25,000, and for all open-ended contracts. **A publicly traded company may submit a 10K disclosure (or equivalent if applicable) in satisfaction of the requirements set forth in Form A. See Disclosure Form Instructions.**

The current annual salary of the Governor is $177,412.00.

DISCLOSURE OF FINANCIAL INFORMATION

1. **Disclosure of Financial Information.** The individual named below has an interest in the BIDDER (or its parent) in terms of ownership or distributive income share in excess of 5%, or an interest which has a value of more than 60% of the annual salary of the Governor. **(Make copies of this form as necessary and attach a separate Disclosure Form A for each individual meeting these requirements)**

FOR INDIVIDUAL (type or print information)

NAME: _____

ADDRESS _____

_____

Type of ownership/distributable income share:

stock _____ sole proprietorship _____ Partnership _____ other: (explain on separate sheet):

% or $ value of ownership/distributable income share: _____

2. Disclosure of Potential Conflicts of Interest. Check "Yes" or "No" to indicate which, if any, of the following potential conflict of interest relationships apply. If the answer to any question is "Yes", please attach additional pages and describe.

(a) State employment, currently or in the previous 3 years, including contractual employment of services.
Yes ___No __

If your answer is yes, please answer each of the following questions.

1. Are you currently an officer or employee of either the Capitol Development Board or the Illinois State Toll Highway Authority? Yes ___No __

2. Are you currently appointed to or employed by any agency of the State of Illinois? If you are currently appointed to or employed by any agency of the State of Illinois, and your annual salary exceeds 60% of the annual salary of the Governor provide the name the State agency for which you are employed and your annual salary. _____
_____

3. If you are currently appointed to or employed by any agency of the State of Illinois, and your annual salary exceeds 60% of the annual salary of the Governor, are you entitled to receive (i) more than 7 1/2% of the total distributable income of your firm, partnership, association or corporation, or (ii) an amount in excess of 100% of the annual salary of the Governor? Yes ___ No __

4. If you are currently appointed to or employed by any agency of the State of Illinois, and your annual salary exceeds 60% of the annual salary of the Governor, are you and your spouse or minor children entitled to receive (i) more than 15% in aggregate of the total distributable income of your firm, partnership, association or corporation, or (ii) an amount in excess of two times the salary of the Governor? Yes ___ No __

(b) State employment of spouse, father, mother, son, or daughter, including contractual employment for services in the previous 2 years.

Yes ___No __

If your answer is yes, please answer each of the following questions.

1. Is your spouse or any minor children currently an officer or employee of the Capitol Development Board or the Illinois State Toll Highway Authority? Yes ___No __

2. Is your spouse or any minor children currently appointed to or employed by any agency of the State of Illinois? If your spouse or minor children is/are currently appointed to or employed by any agency of the State of Illinois, and his/her annual salary exceeds 60% of the annual salary of the Governor, provide the name of the spouse and/or minor children, the name of the State agency for which he/she is employed and his/her annual salary. _____
_____

3. If your spouse or any minor children is/are currently appointed to or employed by any agency of the State of Illinois, and his/her annual salary exceeds 60% of the annual salary of the Governor, are you entitled to receive (i) more than 71/2% of the total distributable income of your firm, partnership, association or corporation, or (ii) an amount in excess 100% of the annual salary of the Governor? Yes ___ No __

4. If your spouse or any minor children are currently appointed to or employed by any agency of the State of Illinois, and his/her annual salary exceeds 60% of the annual salary of the Governor, are you and your spouse or any minor children entitled to receive (i) more than 15% in the aggregate of the total distributable income from your firm, partnership, association or corporation, or (ii) an amount in excess of two times the salary of the Governor?

Yes ___ No __

(c) Elective status; the holding of elective office of the State of Illinois, the government of the United States, any unit of local government authorized by the Constitution of the State of Illinois or the statutes of the State of Illinois currently or in the previous 3 years. Yes ___No __

(d) Relationship to anyone holding elective office currently or in the previous 2 years; spouse, father, mother, son, or daughter. Yes ___No __

(e) Appointive office; the holding of any appointive government office of the State of Illinois, the United State of America, or any unit of local government authorized by the Constitution of the State of Illinois or the statues of the State of Illinois, which office entitles the holder to compensation in excess of the expenses incurred in the discharge of that office currently or in the previous 3 years. Yes ___No __

(f) Relationship to anyone holding appointive office currently or in the previous 2 years; spouse, father, mother, son, or daughter. Yes ___No __

(g) Employment, currently or in the previous 3 years, as or by any registered lobbyist of the State government. Yes ___No __

(h) Relationship to anyone who is or was a registered lobbyist in the previous 2 years; spouse, father, mother, son, or daughter. Yes ___No __

(i) Compensated employment, currently or in the previous 3 years, by any registered election or reelection committee registered with the Secretary of State or any county clerk of the State of Illinois, or any political action committee registered with either the Secretary of State or the Federal Board of Elections.
Yes ___ No __

(j) Relationship to anyone; spouse, father, mother, son, or daughter; who was a compensated employee in the last 2 years by any registered election or re-election committee registered with the Secretary of State or any county clerk of the State of Illinois, or any political action committee registered with either the Secretary of State or the Federal Board of Elections.
Yes ___ No __

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3. Communication Disclosure.

Disclose the name and address of each lobbyist and other agent of the bidder or offeror who is not identified in Section 2 of this form, who is has communicated, is communicating, or may communicate with any State officer or employee concerning the bid or offer. This disclosure is a continuing obligation and must be promptly supplemented for accuracy throughout the process and throughout the term of the contract. If no person is identified, enter "None" on the line below:

Name and address of person(s): _____

_____

_____

_____

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4. Debarment Disclosure. For each of the persons identified under Sections 2 and 3 of this form, disclose whether any of the following has occurred within the previous 10 years: debarment from contracting with any governmental entity; professional licensure discipline; bankruptcies; adverse civil judgments and administrative findings; and criminal felony convictions. This disclosure is a continuing obligation and must be promptly supplemented for accuracy throughout the procurement process and term of the contract. If no person is identified, enter "None" on the line below:

Name of person(s): _____

Nature of disclosure: _____
_____
_____
_____

APPLICABLE STATEMENT

This Disclosure Form A is submitted on behalf of the INDIVIDUAL named on previous page. Under penalty of perjury, I certify the contents of this disclosure to be true and accurate to the best of my knowledge.

Completed by: ☐ _____ _____
Signature of Individual or Authorized Representative — Date

NOT APPLICABLE STATEMENT

Under penalty of perjury, I have determined that no individuals associated with this organization meet the criteria that would require the completion of this Form A.

This Disclosure Form A is submitted on behalf of the CONTRACTOR listed on the previous page.

☐ _____ _____
Signature of Authorized Representative — Date

The bidder has a continuing obligation to supplement these disclosures under Sec. 50-35 of the Code.

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ILLINOIS DEPARTMENT OF TRANSPORTATION

Form B
Other Contracts & Financial Related Information Disclosure

Contractor Name		
Legal Address		
City, State, Zip		
Telephone Number	Email Address	Fax Number (if available)

Disclosure of the information contained in this Form is required by the Section 50-35 of the Code (30 ILCS 500). This information shall become part of the publicly available contract file. This Form B must be completed for bids in excess of $25,000, and for all open-ended contracts.

DISCLOSURE OF OTHER CONTRACTS AND PROCUREMENT RELATED INFORMATION

1. Identifying Other Contracts & Procurement Related Information. The BIDDER shall identify whether it has any pending contracts (including leases), bids, proposals, or other ongoing procurement relationship with any other State of Illinois agency: Yes ___ No __
If "No" is checked, the bidder only needs to complete the signature box on the bottom of this page.

2. If "Yes" is checked. Identify each such relationship by showing State of Illinois agency name and other descriptive information such as bid or project number (attach additional pages as necessary). SEE DISCLOSURE FORM INSTRUCTIONS:

THE FOLLOWING STATEMENT MUST BE CHECKED

☐ _____ _____
Signature of Authorized Representative Date

OWNERSHIP CERTIFICATION

Please certify that the following statement is true if the individuals for all submitted Form A disclosures do not total 100% of ownership.

Any remaining ownership interest is held by individuals receiving less than $106,447.20 of the bidding entity's or parent entity's distributive income or holding less than a 5% ownership interest.

☐ Yes ☐ No ☐ N/A (Form A disclosure(s) established 100% ownership)

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SPECIAL NOTICE TO CONTRACTORS

The following requirements of the Illinois Department of Human Rights' Rules and Regulations are applicable to bidders on all construction contracts advertised by the Illinois Department of Transportation:

CONSTRUCTION EMPLOYEE UTILIZATION PROJECTION

(a) All bidders on construction contracts shall complete and submit, along with and as part of their bids, a Bidder's Employee Utilization Form (Form BC-1256) setting forth a projection and breakdown of the total workforce intended to be hired and/or allocated to such contract work by the bidder including a projection of minority and female employee utilization in all job classifications on the contract project.

(b) The Department of Transportation shall review the Employee Utilization Form, and workforce projections contained therein, of the contract awardee to determine if such projections reflect an underutilization of minority persons and/or women in any job classification in accordance with the Equal Employment Opportunity Clause and Section 7.2 of the Illinois Department of Human Rights' Rules and Regulations for Public Contracts adopted as amended on September 17, 1980. If it is determined that the contract awardee's projections reflect an underutilization of minority persons and/or women in any job classification, it shall be advised in writing of the manner in which it is underutilizing and such awardee shall be considered to be in breach of the contract unless, prior to commencement of work on the contract project, it submits revised satisfactory projections or an acceptable written affirmative action plan to correct such underutilization including a specific timetable geared to the completion stages of the contract.

(c) The Department of Transportation shall provide to the Department of Human Rights a copy of the contract awardee's Employee Utilization Form, a copy of any required written affirmative action plan, and any written correspondence related thereto. The Department of Human Rights may review and revise any action taken by the Department of Transportation with respect to these requirements.

RETURN WITH BID

Illinois Department of Transportation

Contract No. 63745
KANE County
Section 95-00049-00-PV (Carpentersville)
Project TE-M-8003(095)
Route FAU 4006 (Maple Avenue)
District 1 Construction Funds

PART I. IDENTIFICATION

Dept. Human Rights # _____ Duration of Project: _____

Name of Bidder: _____

PART II. WORKFORCE PROJECTION

A. The undersigned bidder has analyzed minority group and female populations, unemployment rates and availability of workers for the location in which this contract work is to be performed, and for the locations from which the bidder recruits employees, and hereby submits the following workforce projection including a projection for minority and female employee utilization in all job categories in the workforce to be allocated to this contract:

TABLE A

TOTAL Workforce Projection for Contract												
			MINORITY EMPLOYEES						TRAINEES			
JOB CATEGORIES	TOTAL EMPLOYEES		BLACK		HISPANIC		*OTHER MINOR.		APPREN-TICES		ON THE JOB TRAINEES	
	M	F	M	F	M	F	M	F	M	F	M	F
OFFICIALS (MANAGERS)												
SUPERVISORS												
FOREMEN												
CLERICAL												
EQUIPMENT OPERATORS												
MECHANICS												
TRUCK DRIVERS												
IRONWORKERS												
CARPENTERS												
CEMENT MASONS												
ELECTRICIANS												
PIPEFITTERS, PLUMBERS												
PAINTERS												
LABORERS, SEMI-SKILLED												
LABORERS, UNSKILLED												
TOTAL												

TABLE B

CURRENT EMPLOYEES TO BE ASSIGNED TO CONTRACT			
TOTAL EMPLOYEES		MINORITY EMPLOYEES	
M	F	M	F

TABLE C

TOTAL Training Projection for Contract								
EMPLOYEES IN TRAINING	TOTAL EMPLOYEES		BLACK		HISPANIC		*OTHER MINOR.	
	M	F	M	F	M	F	M	F
APPRENTICES								
ON THE JOB TRAINEES								

*Other minorities are defined as Asians (A) or Native Americans (N).
Please specify race of each employee shown in Other Minorities column.

FOR DEPARTMENT USE ONLY

BC 1256 (Rev. 12/11/07)

Note: See instructions on page 2

RETURN WITH BID

Contract No. 63745
KANE County
Section 95-00049-00-PV (Carpentersville)
Project TE-M-8003(095)
Route FAU 4006 (Maple Avenue)
District 1 Construction Funds

PART II. WORKFORCE PROJECTION - continued

B. Included in "Total Employees" under Table A is the total number of **new hires** that would be employed in the event the undersigned bidder is awarded this contract.

The undersigned bidder projects that: (number) _____ new hires would be recruited from the area in which the contract project is located; and/or (number) _____ new hires would be recruited from the area in which the bidder's principal office or base of operation is located.

C. Included in "Total Employees" under Table A is a projection of numbers of persons to be employed directly by the undersigned bidder as well as a projection of numbers of persons to be employed by subcontractors.

The undersigned bidder estimates that (number) _____ persons will be directly employed by the prime contractor and that (number) _____ persons will be employed by subcontractors.

PART III. AFFIRMATIVE ACTION PLAN

A. The undersigned bidder understands and agrees that in the event the foregoing minority and female employee utilization projection included under **PART II** is determined to be an underutilization of minority persons or women in any job category, and in the event that the undersigned bidder is awarded this contract, he/she will, prior to commencement of work, develop and submit a written Affirmative Action Plan including a specific timetable (geared to the completion stages of the contract) whereby deficiencies in minority and/or female employee utilization are corrected. Such Affirmative Action Plan will be subject to approval by the contracting agency and the **Department of Human Rights**.

B. The undersigned bidder understands and agrees that the minority and female employee utilization projection submitted herein, and the goals and timetable included under an Affirmative Action Plan if required, are deemed to be part of the contract specifications.

Company _____ Telephone Number _____

_____

Address _____

NOTICE REGARDING SIGNATURE

The Bidder's signature on the Proposal Signature Sheet will constitute the signing of this form. The following signature block needs to be completed only if revisions are required.

Signature: ☐ _____ Title: _____ Date: _____

Instructions: All tables must include subcontractor personnel in addition to prime contractor personnel.

Table A - Include both the number of employees that would be hired to perform the contract work and the total number currently employed (Table B) that will be allocated to contract work, and include all apprentices and on-the-job trainees. The "Total Employees" column should include all employees including all minorities, apprentices and on-the-job trainees to be employed on the contract work.

Table B - Include all employees currently employed that will be allocated to the contract work including any apprentices and on-the-job trainees currently employed.

Table C - Indicate the racial breakdown of the total apprentices and on-the-job trainees shown in Table A.

BC-1256 (Rev. 12/11/07)

RETURN WITH BID

ADDITIONAL FEDERAL REQUIREMENTS

In addition to the Required Contract Provisions for Federal-Aid Construction Contracts (FHWA 1273), all bidders make the following certifications.

A. By the execution of this proposal, the signing bidder certifies that the bidding entity has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action, in restraint of free competitive bidding in connection with the submitted bid. This statement made by the undersigned bidder is true and correct under penalty of perjury under the laws of the United States.

B. CERTIFICATION, EQUAL EMPLOYMENT OPPORTUNITY:

1. Have you participated in any previous contracts or subcontracts subject to the equal opportunity clause. YES _____ NO _____

2. If answer to #1 is yes, have you filed with the Joint Reporting Committee, the Director of OFCC, any Federal agency, or the former President's Committee on Equal Employment Opportunity, all reports due under the applicable filing requirements of those organizations? YES _____ NO _____

RETURN WITH BID

Contract No. 63745
KANE County
Section 95-00049-00-PV (Carpentersville)
Project TE-M-8003(095)
Route FAU 4006 (Maple Avenue)
District 1 Construction Funds

PROPOSAL SIGNATURE SHEET

The undersigned bidder hereby makes and submits this bid on the subject Proposal, thereby assuring the Department that all requirements of the Invitation for Bids and rules of the Department have been met, that there is no misunderstanding of the requirements of paragraph 3 of this Proposal, and that the contract will be executed in accordance with the rules of the Department if an award is made on this bid.

Firm Name _____

(IF AN INDIVIDUAL)

Signature of Owner _____

Business Address _____

_____

Firm Name _____

By _____

(IF A CO-PARTNERSHIP)

Business Address _____

_____

Name and Address of All Members of the Firm:

_____ _____

Corporate Name _____

By _____
Signature of Authorized Representative

(IF A CORPORATION)

_____
Typed or printed name and title of Authorized Representative

Attest _____
Signature

(IF A JOINT VENTURE, USE THIS SECTION FOR THE MANAGING PARTY AND THE SECOND PARTY SHOULD SIGN BELOW)

Business Address _____

Corporate Name _____

By _____
Signature of Authorized Representative

(IF A JOINT VENTURE)

_____
Typed or printed name and title of Authorized Representative

Attest _____
Signature

Business Address _____

_____

If more than two parties are in the joint venture, please attach an additional signature sheet.

Illinois Department of Transportation

Return with Bid

Division of Highways
Proposal Bid Bond
(Effective November 1, 1992)

Item No. _____

Letting Date _____

KNOW ALL MEN BY THESE PRESENTS, That We _____

_____

as PRINCIPAL, and _____

_____ as SURETY, are held jointly, severally and firmly bound unto the STATE OF ILLINOIS in the penal sum of 5 percent of the total bid price, or for the amount specified in the bid proposal under "Proposal Guaranty" in effect on the date of the Invitation for Bids, whichever is the lesser sum, well and truly to be paid unto said STATE OF ILLINOIS, for the payment of which we bind ourselves, our heirs, executors, administrators, successors and assigns.

THE CONDITION OF THE FOREGOING OBLIGATION IS SUCH, that whereas, the PRINCIPAL has submitted a bid proposal to the STATE OF ILLINOIS, acting through the Department of Transportation, for the improvement designated by the Transportation Bulletin Item Number and Letting Date indicated above.

NOW, THEREFORE, if the Department shall accept the bid proposal of the PRINCIPAL; and if the PRINCIPAL shall, within the time and as specified in the bidding and contract documents, submit a DBE Utilization Plan that is accepted and approved by the Department; and if, after award by the Department, the PRINCIPAL shall enter into a contract in accordance with the terms of the bidding and contract documents including evidence of the required insurance coverages and providing such bond as specified with good and sufficient surety for the faithful performance of such contract and for the prompt payment of labor and material furnished in the prosecution thereof; or if, in the event of the failure of the PRINCIPAL to make the required DBE submission or to enter into such contract and to give the specified bond, the PRINCIPAL pays to the Department the difference not to exceed the penalty hereof between the amount specified in the bid proposal and such larger amount for which the Department may contract with another party to perform the work covered by said bid proposal, then this obligation shall be null and void, otherwise, it shall remain in full force and effect.

IN THE EVENT the Department determines the PRINCIPAL has failed to comply with any requirement as set forth in the preceding paragraph, then Surety shall pay the penal sum to the Department within fifteen (15) days of written demand therefor. If Surety does not make full payment within such period of time, the Department may bring an action to collect the amount owed. Surety is liable to the Department for all its expenses, including attorney's fees, incurred in any litigation in which it prevails either in whole or in part.

In TESTIMONY WHEREOF, the said PRINCIPAL and the said SURETY have caused this instrument to be signed by

their respective officers this _____ day of _____ A.D., _____ .

PRINCIPAL	**SURETY**
_____ (Company Name)	_____ (Company Name)
By _____ (Signature & Title)	By: _____ (Signature of Attorney-in-Fact)

Notary Certification for Principal and Surety

STATE OF ILLINOIS,
County of _____

I, _____ , a Notary Public in and for said County, do hereby certify that

_____ and _____
(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 instrument as their free and voluntary act for the uses and purposes therein set forth.

Given under my hand and notarial seal this _____ day of _____ A.D. _____

My commission expires _____ _____
Notary Public

In lieu of completing the above section of the Proposal Bid Form, the Principal may file an Electronic Bid Bond. By signing the proposal and marking the check box next to the Signature and Title line below, the Principal is ensuring the identified electronic bid bond has been executed and the Principal and Surety are firmly bound unto the State of Illinois under the conditions of the bid bond as shown above.

Electronic Bid Bond ID#	Company / Bidder Name	☐ Signature and Title

Illinois Department of Transportation

DBE Utilization Plan

(1) Policy

It is public policy that disadvantaged businesses as defined in 49 CFR Part 26 and the Special Provision shall have the maximum opportunity to participate in the performance of contracts financed in whole or in part with Federal or State funds. Consequently the requirements of 49 CFR Part 26 apply to this contract.

(2) Obligation

The contractor agrees to ensure that disadvantaged businesses as defined in 49 CFR Part 26 and the Special Provision have the maximum opportunity to participate in the performance of contracts or subcontracts financed in whole or in part with Federal or State funds. The contractor shall take all necessary and reasonable steps in accordance with 49 CFR Part 26 and the Special Provision to ensure that said businesses have the maximum opportunity to compete for and perform under this contract. The contractor shall not discriminate on the basis of race, color, national origin or sex in the award and performance of contracts.

(3) Project and Bid Identification

Complete the following information concerning the project and bid:

Route _____ Total Bid _____

Section _____ Contract DBE Goal _____ (Percent) _____ (Dollar Amount)

Project _____

County _____

Letting Date _____

Contract No. _____

Letting Item No. _____

(4) Assurance

I, acting in my capacity as an officer of the undersigned bidder (or bidders if a joint venture), hereby assure the Department that on this project my company : (check one)

☐ Meets or exceeds contract award goals and has provided documented participation as follows:

Disadvantaged Business Participation _____ percent

Attached are the signed participation statements, forms SBE 2025, required by the Special Provision evidencing availability and use of each business participating in this plan and assuring that each business will perform a commercially useful function in the work of the contract.

☐ Failed to meet contract award goals and has included good faith effort documentation to meet the goals and that my company has provided participation as follows:

Disadvantaged Business Participation _____ percent

The contract goals should be accordingly modified or waived. Attached is all information required by the Special Provision in support of this request including good faith effort. Also attached are the signed participation statements, forms SBE 2025, required by the Special Provision evidencing availability and use of each business participating in this plan and assuring that each business will perform a commercially useful function in the work of the contract.

_____
Company

By _____

Title _____

Date _____

The "as read" Low Bidder is required to comply with the Special Provision.

Submit only one utilization plan for each project. The utilization plan shall be submitted in accordance with the special provision.

Bureau of Small Business Enterprises
2300 South Dirksen Parkway
Springfield, Illinois 62764

Local Let Projects
Submit forms to the
Local Agency

The Department of Transportation is requesting disclosure of information that is necessary to accomplish the purpose as outlined under State and Federal law. Disclosure of this information is **REQUIRED**. Failure to provide any information will result in the contract not being awarded. This form has been approved by the State Forms Manager Center.

Illinois Department of Transportation

DBE Participation Statement

Subcontractor Registration _____ Letting _____

Participation Statement Item No. _____

(1) Instructions Contract _____

This form must be completed for each disadvantaged business participating in the Utilization Plan. This form shall be submitted in accordance with the special provision and will be attached to the Utilization Plan form.. If additional space is needed complete an additional form for the firm.

(2) Work

Pay Item No.	Description	Quantity	Unit Price	Total
			Total	

(3) Partial Payment Items

For any of the above items which are partial pay items, specifically describe the work and subcontract dollar amount:

(4) Commitment

The undersigned certify that the information included herein is true and correct, and that the DBE firm listed below has agreed to perform a commercially useful function in the work of the contract item(s) listed above and to execute a contract with the prime contractor. The undersigned further understand that no changes to this statement may be made without prior approval from the Department's Bureau of Small Business Enterprises and that complete and accurate information regarding actual work performed on this project and the payment therefore must be provided to the Department.

_____ _____

Signature for Prime Contractor Signature for DBE Firm

Title _____ Title _____

Date _____ Date _____

Contact _____ Contact Person _____

Phone _____ Phone _____

Firm Name _____ Firm Name _____

Address _____ Address _____

City/State/Zip _____ City/State/Zip _____

E _____

WC _____

The Department of Transportation is requesting disclosure of information that is necessary to accomplish the statutory purpose as outlined under the state and federal law. Disclosure of this information is **REQUIRED**. Failure to provide any information will result in the contract not being awarded. This form has been approved by the State Forms Management Center.

PROPOSAL ENVELOPE

Illinois Department of Transportation

PROPOSALS

for construction work advertised for bids by the
Illinois Department of Transportation

Item No.	Item No.	Item No.

Submitted By:

Name:
Address:
Phone No.

Bidders should use an IDOT proposal envelope or affix this form to the front of a 10” x 13” envelope for the submittal of bids. If proposals are mailed, they should be enclosed in a second or outer envelope addressed to:

Engineer of Design and Environment - Room 326
Illinois Department of Transportation
2300 South Dirksen Parkway
Springfield, Illinois 62764

NOTICE

Individual bids, including Bid Bond and/or supplemental information if required, should be securely stapled.

CONTRACTOR OFFICE COPY OF CONTRACT SPECIFICATIONS

NOTICE

None of the following material needs to be returned with the bid package unless the special provisions require documentation and/or other information to be submitted.

Contract No. 63745
KANE County
Section 95-00049-00-PV (Carpentersville)
Project TE-M-8003(095)
Route FAU 4006 (Maple Avenue)
District 1 Construction Funds

Illinois Department of Transportation

SUBCONTRACTOR DOCUMENTATION

Public Acts 96-0795, 96-0920, and 97-0895 enacted substantial changes to the provisions of the Code (30 ILCS 500). Among the changes are provisions affecting subcontractors. The Contractor awarded this contract will be required as a material condition of the contract to implement and enforce the contract requirements applicable to subcontractors that entered into a contractual agreement with a total value of $50,000 or more with a person or entity who has a contract subject to the Code and approved in accordance with article 108.01 of the Standard Specifications for Road and Bridge Construction.

If the Contractor seeks approval of subcontractors to perform a portion of the work, and approval is granted by the Department, the Contractor shall provide a copy of the subcontract to the Illinois Department of Transportation's CPO upon request within 15 calendar days after execution of the subcontract.

Financial disclosures required pursuant to Sec. 50-35 of the Code must be submitted for all applicable subcontractors. The subcontract shall contain the certifications required to be made by subcontractors pursuant to Article 50 of the Code. This Notice to Bidders includes a document incorporating all required subcontractor certifications and disclosures for use by the Contractor in compliance with this mandate. The document is entitled State Required Ethical Standards Governing Subcontractors.

RETURN WITH SUBCONTRACT

STATE ETHICAL STANDARDS GOVERNING SUBCONTRACTORS

Article 50 of the Code establishes the duty of all State CPOs, SPOs, and their designees to maximize the value of the expenditure of public moneys in procuring goods, services, and contracts for the State of Illinois and to act in a manner that maintains the integrity and public trust of State government. In discharging this duty, they are charged by law to use all available information, reasonable efforts, and reasonable actions to protect, safeguard, and maintain the procurement process of the State of Illinois.

The certifications hereinafter made by the subcontractor are each a material representation of fact upon which reliance is placed should the Department approve the subcontractor. The CPO may terminate or void the contract approval if it is later determined that the bidder or subcontractor rendered a false or erroneous certification. If a false certification is made by a subcontractor the contractor's submitted bid and the executed contract may not be declared void unless the contractor refuses to terminate the subcontract upon the State's request after a finding that the subcontractor's certification was false.

Section 50-2 of the Code provides that every person that has entered into a multi-year contract and every subcontractor with a multi-year subcontract shall certify, by July 1 of each fiscal year covered by the contract after the initial fiscal year, to the responsible CPO whether it continues to satisfy the requirements of Article 50 pertaining to the eligibility for a contract award. If a contractor or subcontractor is not able to truthfully certify that it continues to meet all requirements, it shall provide with its certification a detailed explanation of the circumstances leading to the change in certification status. A contractor or subcontractor that makes a false statement material to any given certification required under Article 50 is, in addition to any other penalties or consequences prescribed by law, subject to liability under the Whistleblower Reward and Protection Act for submission of a false claim.

A. Bribery

1. The Code provides:

Section 50-5. Bribery.

(a) Prohibition. No person or business shall be awarded a contract or subcontract under this Code who:

(1) has been convicted under the laws of Illinois or any other state of bribery or attempting to bribe an officer or employee of the State of Illinois or any other state in that officer's or employee's official capacity; or

(2) has made an admission of guilt of that conduct that is a matter of record but has not been prosecuted for that conduct.

(b) Businesses. No business shall be barred from contracting with any unit of State or local government, or subcontracting under such a contract, as a result of a conviction under this Section of any employee or agent of the business if the employee or agent is no longer employed by the business and:

(1) the business has been finally adjudicated not guilty; or

(2) the business demonstrates to the governmental entity with which it seeks to contract, or which is signatory to the contract to which the subcontract relates, and that entity finds that the commission of the offense was not authorized, requested, commanded, or performed by a director, officer, or high managerial agent on behalf of the business as provided in paragraph (2) of subsection (a) of Section 5-4 of the Criminal Code of 1961.

(c) Conduct on behalf of business. For purposes of this Section, when an official, agent, or employee of a business committed the bribery or attempted bribery on behalf of the business and in accordance with the direction or authorization of a responsible official of the business, the business shall be chargeable with the conduct.

(d) Certification. Every bid submitted to and contract executed by the State, and every subcontract subject to Section 20-120 of the Code shall contain a certification by the contractor or the subcontractor, respectively, that the contractor or subcontractor is not barred from being awarded a contract or subcontract under this Section and acknowledges that the CPO may declare the related contract void if any certifications required by this Section are false. A contractor who makes a false statement, material to the certification, commits a Class 3 felony.

2. The contractor or subcontractor certifies that it is not barred from being awarded a contract under Section 50.5.

B. Felons

1. The Code provides:

Section 50-10. Felons. Unless otherwise provided, no person or business convicted of a felony shall do business with the State of Illinois or any State agency, or enter into a subcontract, from the date of conviction until 5 years after the date of completion of the sentence for that felony, unless no person held responsible by a prosecutorial office for the facts upon which the conviction was based continues to have any involvement with the business.

2. Certification. Every bid submitted to and contract executed by the State and every subcontract subject to Section 20-120 of the Code shall contain a certification by the bidder or contractor or subcontractor, respectively, that the bidder, contractor, or subcontractor is not barred from being awarded a contract or subcontract under this Section and acknowledges that the CPO may declare the related contract void if any of the certifications required by this Section are false.

RETURN WITH SUBCONTRACT

C. Debt Delinquency

1. The Code provides:

Section 50-11 and 50-12. Debt Delinquency.

The contractor or bidder or subcontractor, respectively, certifies that it, or any affiliate, is not barred from being awarded a contract or subcontract under the Code. Section 50-11 prohibits a person from entering into a contract with a State agency, or entering into a subcontract, if it knows or should know that it, or any affiliate, is delinquent in the payment of any debt to the State as defined by the Debt Collection Board. Section 50-12 prohibits a person from entering into a contract with a State agency, or entering into a subcontract, if it, or any affiliate, has failed to collect and remit Illinois Use Tax on all sales of tangible personal property into the State of Illinois in accordance with the provisions of the Illinois Use Tax Act. The bidder or contractor or subcontractor, respectively, further acknowledges that the CPO may declare the related contract void if this certification is false or if the bidder, contractor, or subcontractor, or any affiliate, is determined to be delinquent in the payment of any debt to the State during the term of the contract.

D. Prohibited Bidders, Contractors and Subcontractors

1. The Code provides:

Section 50-10.5 and 50-60(c). Prohibited bidders, contractors and subcontractors.
The bidder or contractor or subcontractor, respectively, certifies in accordance with 30 ILCS 500/50-10.5 that no officer, director, partner or other managerial agent of the contracting business has been convicted of a felony under the Sarbanes-Oxley Act of 2002 or a Class 3 or Class 2 felony under the Illinois Securities Law of 1953 or if in violation of Subsection (c) for a period of five years from the date of conviction. Every bid submitted to and contract executed by the State and every subcontract subject to Section 20-120 of the Code shall contain a certification by the bidder, contractor, or subcontractor, respectively, that the bidder, contractor, or subcontractor is not barred from being awarded a contract or subcontract under this Section and acknowledges that the CPO shall declare the related contract void if any of the certifications completed pursuant to this Section are false.

E. Section 42 of the Environmental Protection Act

The bidder or contractor or subcontractor, respectively, certifies in accordance with 30 ILCS 500/50-12 that the bidder, contractor, or subcontractor, is not barred from being awarded a contract or entering into a subcontract under this Section which prohibits the bidding on or entering into contracts with the State of Illinois or a State agency, or entering into any subcontract, that is subject to the Code by a person or business found by a court or the Pollution Control Board to have committed a willful or knowing violation of Section 42 of the Environmental Protection Act for a period of five years from the date of the order. The bidder or contractor or subcontractor, respectively, acknowledges that the CPO may declare the contract void if this certification is false.

The undersigned, on behalf of the subcontracting company, has read and understands the above certifications and makes the certifications as required by law.

_____
Name of Subcontracting Company

_____ _____
Authorized Officer Date

RETURN WITH SUBCONTRACT

SUBCONTRACTOR DISCLOSURES

I. DISCLOSURES

A. The disclosures hereinafter made by the subcontractor are each a material representation of fact upon which reliance is placed. The subcontractor further certifies that the Department has received the disclosure forms for each subcontract.

The CPO may void the bid, contract, or subcontract, respectively, if it is later determined that the bidder or subcontractor rendered a false or erroneous disclosure. A contractor or subcontractor may be suspended or debarred for violations of the Code. Furthermore, the CPO may void the contract.

B. Financial Interests and Conflicts of Interest

1. Section 50-35 of the Code provides that all subcontracts with a total value of $50,000 or more, from subcontractors identified in Section 20-120 of the Code, shall be accompanied by disclosure of the financial interests of the subcontractor. This disclosed information for the subcontractor, will be maintained as public information subject to release by request pursuant to the Freedom of Information Act, filed with the Procurement Policy Board, and shall be incorporated as a material term of the Prime Contractor's contract. Furthermore, pursuant to this Section, the Procurement Policy Board may recommend to allow or void a contract or subcontract based on a potential conflict of interest.

The financial interests to be disclosed shall include ownership or distributive income share that is in excess of 5%, or an amount greater than 60% of the annual salary of the Governor, of the subcontracting entity or its parent entity, whichever is less, unless the subcontractor is a publicly traded entity subject to Federal 10K reporting, in which case it may submit its 10K disclosure in place of the prescribed disclosure. If a subcontractor is a privately held entity that is exempt from Federal 10K reporting, but has more than 200 shareholders, it may submit the information that Federal 10K companies are required to report, and list the names of any person or entity holding any ownership share that is in excess of 5%. The disclosure shall include the names, addresses, and dollar or proportionate share of ownership of each person making the disclosure, their instrument of ownership or beneficial relationship, and notice of any potential conflict of interest resulting from the current ownership or beneficial interest of each person making the disclosure having any of the relationships identified in Section 50-35 and on the disclosure form.
The current annual salary of the Governor is $177,412.00.

In addition, all disclosures shall indicate any other current or pending contracts, subcontracts, proposals, leases, or other ongoing procurement relationships the subcontracting entity has with any other unit of state government and shall clearly identify the unit and the contract, subcontract, proposal, lease, or other relationship.

2. Disclosure Forms. Disclosure Form A is attached for use concerning the individuals meeting the above ownership or distributive share requirements. A separate Disclosure Form A must be submitted with the bid for each individual meeting the above requirements. In addition, a second form (Disclosure Form B) provides for the disclosure of current or pending procurement relationships with other (non-IDOT) state agencies and a total ownership certification. **The forms must be included with each bid.**

C. Disclosure Form Instructions

Form A Instructions for Financial Information & Potential Conflicts of Interest

If the subcontractor is a publicly traded entity subject to Federal 10K reporting, the 10K Report may be submitted to meet the requirements of Form A. If a subcontractor is a privately held entity that is exempt from Federal 10K reporting, but has more than 200 shareholders, it may submit the information that Federal 10K companies are required to report, and list the names of any person or entity holding any ownership share that is in excess of 5%. If a subcontractor is not subject to Federal 10K reporting, the subcontractor must determine if any individuals are required by law to complete a financial disclosure form. To do this, the subcontractor should answer each of the following questions. A "YES" answer indicates Form A must be completed. If the answer to each of the following questions is "NO", then the NOT APPLICABLE STATEMENT on the second page of Form A must be signed and dated by a person that is authorized to execute contracts for the subcontracting company. Note: These questions are for assistance only and are not required to be completed.

1. Does anyone in your organization have a direct or beneficial ownership share of greater than 5% of the bidding entity or parent entity? YES ___ NO___
2. Does anyone in your organization have a direct or beneficial ownership share of less than 5%, but which has a value greater than 60% of the annual salary of the Governor? YES ___ NO___
3. Does anyone in your organization receive more than 60% of the annual salary of the Governor of the subcontracting entity's or parent entity's distributive income? YES ___ NO __

   (Note: Distributive income is, for these purposes, any type of distribution of profits. An annual salary is not distributive income.)
4. Does anyone in your organization receive greater than 5% of the subcontracting entity's or parent entity's total distributive income, but which is less than 60% of the annual salary of the Governor? YES ___ NO __

   (Note: Only one set of forms needs to be completed per person per subcontract even if a specific individual would require a yes answer to more than one question.)

A "YES" answer to any of these questions requires the completion of Form A. The subcontractor must determine each individual in the subcontracting entity or the subcontracting entity's parent company that would cause the questions to be answered "Yes". Each form must be signed and dated by a person that is authorized to execute contracts for your organization. **Photocopied or stamped signatures are not acceptable**. The person signing can be, but does not have to be, the person for which the form is being completed. The subcontractor is responsible for the accuracy of any information provided.

If the answer to each of the above questions is "NO", then the NOT APPLICABLE STATEMENT on page 2 of Form A must be signed and dated by a person that is authorized to execute contracts for your company.

RETURN WITH SUBCONTRACT

Form B: Instructions for Identifying Other Contracts & Procurement Related Information

Disclosure Form B must be completed for each subcontract submitted by the subcontracting entity. *Note: Checking the NOT APPLICABLE STATEMENT on Form A does not allow the subcontractor to ignore Form B. Form B must be completed, checked, and dated or the subcontract will not be approved.*

The Subcontractor shall identify, by checking Yes or No on Form B, whether it has any pending contracts, subcontracts, leases, bids, proposals, or other ongoing procurement relationship with any other (non-IDOT) State of Illinois agency. If "No" is checked, the subcontractor only needs to complete the check box on the bottom of Form B. If "Yes" is checked, the subcontractor must list all non-IDOT State of Illinois agency pending contracts, subcontracts, leases, bids, proposals, and other ongoing procurement relationships. These items may be listed on Form B or on an attached sheet(s). Contracts with cities, counties, villages, etc. are not considered State of Illinois agency contracts and are not to be included. Contracts or subcontracts with other State of Illinois agencies such as the Department of Natural Resources or the Capital Development Board must be included.

RETURN WITH SUBCONTRACT

ILLINOIS DEPARTMENT OF TRANSPORTATION

Form A
Subcontractor: Financial Information & Potential Conflicts of Interest Disclosure

Subcontractor Name		
Legal Address		
City, State, Zip		
Telephone Number	Email Address	Fax Number (if available)

Disclosure of the information contained in this Form is required by the Section 50-35 of the Code (30 ILCS 500). Subcontractors desiring to enter into a subcontract of a State of Illinois contract must disclose the financial information and potential conflict of interest information as specified in this Disclosure Form. This information shall become part of the publicly available contract file. This Form A must be completed for subcontracts with a total value of $50,000 or more, from subcontractors identified in Section 20-120 of the Code, and for all open-ended contracts. **A publicly traded company may submit a 10K disclosure (or equivalent if applicable) in satisfaction of the requirements set forth in Form A. See Disclosure Form Instructions.**

The current annual salary of the Governor is $177,412.00.

DISCLOSURE OF FINANCIAL INFORMATION

1. Disclosure of Financial Information. The individual named below has an interest in the SUBCONTRACTOR (or its parent) in terms of ownership or distributive income share in excess of 5%, or an interest which has a value of more than 60% of the annual salary of the Governor. **(Make copies of this form as necessary and attach a separate Disclosure Form A for each individual meeting these requirements)**

FOR INDIVIDUAL (type or print information)

NAME: _____

ADDRESS _____

_____

Type of ownership/distributable income share:

stock _____ sole proprietorship _____ Partnership _____ other: (explain on separate sheet):

% or $ value of ownership/distributable income share: _____

2. Disclosure of Potential Conflicts of Interest. Check "Yes" or "No" to indicate which, if any, of the following potential conflict of interest relationships apply. If the answer to any question is "Yes", please attach additional pages and describe.

(a) State employment, currently or in the previous 3 years, including contractual employment of services.
Yes ___No __

If your answer is yes, please answer each of the following questions.

1. Are you currently an officer or employee of either the Capitol Development Board or the Illinois State Toll Highway Authority? Yes ___No __

2. Are you currently appointed to or employed by any agency of the State of Illinois? If you are currently appointed to or employed by any agency of the State of Illinois, and your annual salary exceeds 60% of the annual salary of the Governor, provide the name the State agency for which you are employed and your annual salary. _____
_____

3. If you are currently appointed to or employed by any agency of the State of Illinois, and your annual salary exceeds 60% of the annual salary of the Governor, are you entitled to receive (i) more than 7 1/2% of the total distributable income of your firm, partnership, association or corporation, or (ii) an amount in excess of 100% of the annual salary of the Governor?
Yes ___No __

4. If you are currently appointed to or employed by any agency of the State of Illinois, and your annual salary exceeds 60% of the annual salary of the Governor, are you and your spouse or minor children entitled to receive (i) more than 15 % in the aggregate of the total distributable income of your firm, partnership, association or corporation, or (ii) an amount in excess of two times the salary of the Governor? Yes ___No __

(b) State employment of spouse, father, mother, son, or daughter, including contractual employment services in the previous 2 years.
Yes ___No __

If your answer is yes, please answer each of the following questions.

1. Is your spouse or any minor children currently an officer or employee of the Capitol Development Board or the Illinois State Toll Highway Authority? Yes ___No __

2. Is your spouse or any minor children currently appointed to or employed by any agency of the State of Illinois? If your spouse or minor children is/are currently appointed to or employed by any agency of the State of Illinois, and his/her annual salary exceeds 60% of the annual salary of the Governor, provide the name of your spouse and/or minor children, the name of the State agency for which he/she is employed and his/her annual salary. _____
_____

3. If your spouse or any minor children is/are currently appointed to or employed by any agency of the State of Illinois, and his/her annual salary exceeds 60% of the annual salary of the Governor, are you entitled to receive (i) more than 71/2% of the total distributable income of your firm, partnership, association or corporation, or (ii) an amount in excess of of 100% of the annual salary of the Governor? Yes ___No __

4. If your spouse or any minor children are currently appointed to or employed by any agency of the State of Illinois, and his/her annual salary exceeds 60% of the annual salary of the Governor, are you and your spouse or minor children entitled to receive (i) more than 15 % in the aggregate of the total distributable income of your firm, partnership, association or corporation, or (ii) an amount in excess of two times the salary of the Governor?
Yes ___No __

(c) Elective status; the holding of elective office of the State of Illinois, the government of the United States, any unit of local government authorized by the Constitution of the State of Illinois or the statutes of the State of Illinois currently or in the previous 3 years. Yes ___No __

(d) Relationship to anyone holding elective office currently or in the previous 2 years; spouse, father, mother, son, or daughter. Yes ___No __

(e) Appointive office; the holding of any appointive government office of the State of Illinois, the United States of America, or any unit of local government authorized by the Constitution of the State of Illinois or the statutes of the State of Illinois, which office entitles the holder to compensation in excess of the expenses incurred in the discharge of that office currently or in the previous 3 years. Yes ___No __

(f) Relationship to anyone holding appointive office currently or in the previous 2 years; spouse, father, mother, son, or daughter. Yes ___No __

(g) Employment, currently or in the previous 3 years, as or by any registered lobbyist of the State government.
Yes ___No __

(h) Relationship to anyone who is or was a registered lobbyist in the previous 2 years; spouse, father, mother, son, or daughter. Yes ___ No __

(i) Compensated employment, currently or in the previous 3 years, by any registered election or reelection committee registered with the Secretary of State or any county clerk of the State of Illinois, or any political action committee registered with either the Secretary of State or the Federal Board of Elections.
Yes ___ No __

(j) Relationship to anyone; spouse, father, mother, son, or daughter; who was a compensated employee in the last 2 years by any registered election or re-election committee registered with the Secretary of State or any county clerk of the State of Illinois, or any political action committee registered with either the Secretary of State or the Federal Board of Elections.
Yes ___ No __

---

3 Communication Disclosure.

Disclose the name and address of each lobbyist and other agent of the bidder or offeror who is not identified in Section 2 of this form, who is has communicated, is communicating, or may communicate with any State officer or employee concerning the bid or offer. This disclosure is a continuing obligation and must be promptly supplemented for accuracy throughout the process and throughout the term of the contract. If no person is identified, enter "None" on the line below:

Name and address of person(s): _____

_____

_____

_____

RETURN WITH SUBCONTRACT

4. Debarment Disclosure. For each of the persons identified under Sections 2 and 3 of this form, disclose whether any of the following has occurred within the previous 10 years: debarment from contracting with any governmental entity; professional licensure discipline; bankruptcies; adverse civil judgments and administrative findings; and criminal felony convictions. This disclosure is a continuing obligation and must be promptly supplemented for accuracy throughout the procurement process and term of the contract. If no person is identified, enter "None" on the line below:

Name of person(s): _____

Nature of disclosure: _____

_____

_____

_____

APPLICABLE STATEMENT

This Disclosure Form A is submitted on behalf of the INDIVIDUAL named on previous page. Under penalty of perjury, I certify the contents of this disclosure to be true and accurate to the best of my knowledge.

Completed by: ☐ _____ _____

Signature of Individual or Authorized Officer — Date

NOT APPLICABLE STATEMENT

Under penalty of perjury, I have determined that no individuals associated with this organization meet the criteria that would require the completion of this Form A.

This Disclosure Form A is submitted on behalf of the SUBCONTRACTOR listed on the previous page.

☐ _____ _____

Signature of Authorized Officer — Date

RETURN WITH SUBCONTRACT

ILLINOIS DEPARTMENT OF TRANSPORTATION

Form B
Subcontractor: Other Contracts & Financial Related Information Disclosure

Subcontractor Name		
Legal Address		
City, State, Zip		
Telephone Number	Email Address	Fax Number (if available)

Disclosure of the information contained in this Form is required by the Section 50-35 of the Code (30 ILCS 500). This information shall become part of the publicly available contract file. This Form B must be completed for subcontracts with a total value of $50,000 or more, from subcontractors identified in Section 20-120 of the Code, and for all open-ended contracts.

DISCLOSURE OF OTHER CONTRACTS, SUBCONTRACTS, AND PROCUREMENT RELATED INFORMATION

1. Identifying Other Contracts & Procurement Related Information. The SUBCONTRACTOR shall identify whether it has any pending contracts, subcontracts, including leases, bids, proposals, or other ongoing procurement relationship with any other State of Illinois agency: Yes ___ No __
If "No" is checked, the subcontractor only needs to complete the signature box on the bottom of this page.

2. If "Yes" is checked. Identify each such relationship by showing State of Illinois agency name and other descriptive information such as bid or project number (attach additional pages as necessary). SEE DISCLOSURE FORM INSTRUCTIONS:

THE FOLLOWING STATEMENT MUST BE CHECKED

☐ _____ _____
Signature of Authorized Officer Date

OWNERSHIP CERTIFICATION

Please certify that the following statement is true if the individuals for all submitted Form A disclosures do not total 100% of ownership

Any remaining ownership interest is held by individuals receiving less than $106,447.20 of the bidding entity's or parent entity's distributive income or holding less than a 5% ownership interest.

☐ Yes ☐ No ☐ N/A (Form A disclosure(s) established 100% ownership)

Illinois Department of Transportation

NOTICE TO BIDDERS

1. **TIME AND PLACE OF OPENING BIDS.** Sealed proposals for the improvement described herein will be received by the Department of Transportation at the Harry R. Hanley Building, 2300 South Dirksen Parkway, in Springfield, Illinois until 10:00 o'clock a.m April 26, 2013. All bids will be gathered, sorted, publicly opened and read in the auditorium at the Department of Transportation's Harry R. Hanley Building shortly after the 10:00 a.m. cut off time.

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

   Contract No. 63745
   KANE County
   Section 95-00049-00-PV (Carpentersville)
   Project TE-M-8003(095)
   Route FAU 4006 (Maple Avenue)
   District 1 Construction Funds

Full depth pavement reconstruction, storm sewer, water main, sanitary sewer, three sided structure replacement, street lighting and a HMA pedestrian path, from Washington Street to L.W, Besinger Dr. in the Village of Carpentersville.

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

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

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

By Order of the
Illinois Department of Transportation

Ann L. Schneider,
Secretary

CONTRACT 63745

INDEX
FOR
SUPPLEMENTAL SPECIFICATIONS
AND RECURRING SPECIAL PROVISIONS

Adopted January 1, 2013

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

ERRATA Standard Specifications for Road and Bridge Construction (Adopted 1-1-12) (Revised 1-1-13)

SUPPLEMENTAL SPECIFICATIONS

RECURRING SPECIAL PROVISIONS

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

LOCAL ROADS AND STREETS RECURRING SPECIAL PROVISIONS

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

Table of Contents

INDEX OF SPECIAL PROVISIONS

PAGE NO.

INDEX LOCAL ROADS AND STREETS SPECIAL PROVISIONS

LR #	Pg #		Special Provision Title	Effective	Revised
LR SD12		☐	Slab Movement Detection Device	Nov. 11, 1984	Jan. 1, 2007
LR SD13		☐	Required Cold Milled Surface Texture	Nov. 1, 1987	Jan. 1, 2007
LR SD406		☐	Safety Edge	April 1, 2011	
LR 105	**261**	☒	Cooperation with Utilities	Jan. 1, 1999	Jan. 1, 2007
~~LR 107-2~~		☐	~~Railroad Protective Liability Insurance for Local Lettings~~	~~Mar. 1, 2005~~	~~Jan. 1, 2006~~
LR 107-4	**264**	☒	Insurance	Feb. 1, 2007	Aug. 1, 2007
LR 107-7		☐	Wages of Employees on Public Works	Jan. 1, 1999	Jan. 2, 2013
LR 108		☐	Combination Bids	Jan. 1, 1994	Mar. 1, 2005
LR 109		☐	Equipment Rental Rates	Jan. 1, 2012	
LR 212		☐	Shaping Roadway	Aug. 1, 1969	Jan. 1, 2002
LR 355-1		☐	Bituminous Stabilized Base Course, Road Mix or Traveling Plant Mix	Oct. 1, 1973	Jan. 1, 2007
LR 355-2		☐	Bituminous Stabilized Base Course, Plant Mix	Feb. 20, 1963	Jan. 1, 2007
LR 400-1		☐	Bituminous Treated Earth Surface	Jan. 1, 2007	Apr. 1, 2012
LR 400-2		☐	Bituminous Surface Plant Mix (Class B)	Jan. 1, 2008	
LR 400-3		☐	Hot In-Place Recycling (HIR) – Surface Recycling	Jan. 1, 2012	
LR 400-4		☐	Full-Depth Reclamation (FDR) with Emulsified Asphalt	Apr. 1, 2012	Jun. 1, 2012
LR 400-5		☐	Cold In-Place Recycling (CIR) With Emulsified Asphalt	Apr. 1, 2012	Jun. 1, 2012
LR 400-6		☐	Cold In Place Recycling (CIR) with Foamed Asphalt	June 1, 2012	
LR 400-7		☐	Full-Depth Reclamation (FDR) with Foamed Asphalt	June 1, 2012	
LR 402		☐	Salt Stabilized Surface Course	Feb. 20, 1963	Jan. 1, 2007
LR 403-1		☐	Surface Profile Milling of Existing, Recycled or Reclaimed Flexible Pavement	Apr. 1, 2012	Jun. 1, 2012
LR 403-2		☐	Bituminous Hot Mix Sand Seal Coat	Aug. 1, 1969	Jan. 1, 2007
LR 406		☐	Filling HMA Core Holes with Non-shrink Grout	Jan. 1, 2008	
LR 420		☐	PCC Pavement (Special)	May 12, 1964	Jan. 2, 2007
LR 442		☐	Bituminous Patching Mixtures for Maintenance Use	Jan. 1, 2004	Jun. 1, 2007
LR 451		☐	Crack Filling Bituminous Pavement with Fiber-Asphalt	Oct. 1, 1991	Jan. 1, 2007
LR 503-1		☐	Furnishing Class SI Concrete	Oct. 1, 1973	Jan. 1, 2002
LR 503-2		☐	Furnishing Class SI Concrete (Short Load)	Jan. 1, 1989	Jan. 1, 2002
LR 542		☐	Pipe Culverts, Type _____ (Furnished)	Sep. 1, 1964	Jan. 1, 2007
LR 663	**265**	☒	Calcium Chloride Applied	Jun. 1, 1958	Jan. 1, 2007
LR 702		☐	Construction and Maintenance Signs	Jan. 1, 2004	Jun. 1, 2007
LR 1000-1		☐	Cold In-Place Recycling (CIR) and Full Depth Reclamation (FDR) with Emulsified Asphalt Mix Design Procedures	Apr. 1, 2012	Jun. 1, 2012
LR 1000-2		☐	Cold In-Place Recycling (CIR) and Full Depth Reclamation (FDR) with Foamed Asphalt Mix Design Procedures	June 1, 2012	
LR 1004		☐	Coarse Aggregate for Bituminous Surface Treatment	Jan. 1, 2002	Jan. 1, 2007
LR 1030		☐	Growth Curve	Mar. 1, 2008	Jan. 1, 2010
LR 1032-1		☐	Emulsified Asphalts	Jan. 1, 2007	Feb. 7, 2008
LR 1102		☐	Road Mix or Traveling Plan Mix Equipment	Jan. 1, 2007	

BDE SPECIAL PROVISIONS
For the April 26 and June 14, 2013 Lettings

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

File Name	Pg.		Special Provision Title	Effective	Revised
80240			Above Grade Inlet Protection	July 1, 2009	Jan. 1, 2012
80099			Accessible Pedestrian Signals (APS)	April 1, 2003	Jan. 1, 2007
80274			Aggregate Subgrade Improvement	April 1, 2012	Jan. 1, 2013
80309	267	X	Anchor Bolts	Jan. 1, 2013	
80192			Automated Flagger Assistance Device	Jan. 1, 2008	
80173			Bituminous Materials Cost Adjustments	Nov. 2, 2006	Jan. 1, 2012
80241			Bridge Demolition Debris	July 1, 2009	
80276			Bridge Relief Joint Sealer	Jan. 1, 2012	Aug. 1, 2012
5026I			Building Removal-Case I (Non-Friable and Friable Asbestos)	Sept. 1, 1990	April 1, 2010
5048I			Building Removal-Case II (Non-Friable Asbestos)	Sept. 1, 1990	April 1, 2010
5049I			Building Removal-Case III (Friable Asbestos)	Sept. 1, 1990	April 1, 2010
5053I			Building Removal-Case IV (No Asbestos)	Sept. 1, 1990	April 1, 2010
* 80292			Coarse Aggregate in Bridge Approach Slabs/Footings	April 1, 2012	April 1, 2013
80310	268	X	Coated Galvanized Steel Conduit	Jan. 1, 2013	
80198			Completion Date (via calendar days)	April 1, 2008	
80199			Completion Date (via calendar days) Plus Working Days	April 1, 2008	
80293			Concrete Box Culverts with Skews > 30 Degrees and Design Fills ≤ 5 Feet	April 1, 2012	
80294			Concrete Box Culverts with Skews ≤ 30 Degrees Regardless of Design Fill and Skews > 30 Degrees with Design Fills > 5 Feet	April 1, 2012	
80311			Concrete End Sections for Pipe Culverts	Jan. 1, 2013	
80277			Concrete Mix Design – Department Provided	Jan. 1, 2012	
80261	269	X	Construction Air Quality – Diesel Retrofit	June 1, 2010	
80029	272	X	Disadvantaged Business Enterprise Participation	Sept. 1, 2000	Aug. 2, 2011
80312	282	X	Drain Pipe, Tile, Drainage Mat, and Wall Drain	Jan. 1, 2013	
80313			Fabric Bearing Pads	Jan. 1, 2013	
80265			Friction Aggregate	Jan. 1, 2011	
80229			Fuel Cost Adjustment	April 1, 2009	July 1, 2009
80303	283	X	Granular Materials	Nov. 1, 2012	
80304			Grooving for Recessed Pavement Markings	Nov. 1, 2012	Jan. 1, 2013
80169			High Tension Cable Median Barrier	Jan. 1, 2007	Jan. 1, 2013
80246	284	X	Hot-Mix Asphalt – Density Testing of Longitudinal Joints	Jan. 1, 2010	April 1, 2012
80315			Insertion Lining of Culverts	Jan. 1, 2013	
* 80320	286	X	Liquidated Damages	April 1, 2013	
80045			Material Transfer Device	June 15, 1999	Jan. 1, 2009
80297			Modified Urethane Pavement Marking	April 1, 2012	
80165			Moisture Cured Urethane Paint System	Nov. 1, 2006	Jan. 1, 2010
80253			Movable Traffic Barrier	Jan. 1, 2010	Jan. 1, 2013
80231	287	X	Pavement Marking Removal	April 1, 2009	
80298			Pavement Marking Tape Type IV	April 1, 2012	
80254	288	X	Pavement Patching	Jan. 1, 2010	
* 80321	289	X	Pavement Removal	April 1, 2013	
80022	290	X	Payments to Subcontractors	June 1, 2000	Jan. 1, 2006
80316	292	X	Placing and Consolidating Concrete	Jan. 1, 2013	
80278	295	X	Planting Woody Plants	Jan. 1, 2012	Aug. 1, 2012
80305			Polyurea Pavement Markings	Nov. 1, 2012	Jan. 1, 2013
80279	297	X	Portland Cement Concrete	Jan. 1, 2012	Jan. 1, 2013
80300			Preformed Plastic Pavement Marking Type D - Inlaid	April 1, 2012	

File Name	Pg.		Special Provision Title	Effective	Revised
80218			Preventive Maintenance – Bituminous Surface Treatment	Jan. 1, 2009	April 1, 2012
80219			Preventive Maintenance – Cape Seal	Jan. 1, 2009	April 1, 2012
80220			Preventive Maintenance – Micro-Surfacing	Jan. 1, 2009	April 1, 2012
80221			Preventive Maintenance – Slurry Seal	Jan. 1, 2009	April 1, 2012
80281	340	X	Quality Control/Quality Assurance of Concrete Mixtures	Jan. 1, 2012	Jan. 1, 2013
3426I			Railroad Protective Liability Insurance	Dec. 1, 1986	Jan. 1, 2006
80157			Railroad Protective Liability Insurance (5 and 10)	Jan. 1, 2006	
80306			Reclaimed Asphalt Pavement (RAP) and Reclaimed Asphalt Shingles (RAS)	Nov. 1, 2012	Jan. 1, 2013
* 80283	356	X	Removal and Disposal of Regulated Substances	Jan. 1, 2012	Nov. 2, 2012
* 80319	360	X	Removal and Disposal of Surplus Materials	Nov. 2, 2012	
80224			Restoring Bridge Approach Pavements Using High-Density Foam	Jan. 1, 2009	Jan. 1, 2012
80271			Safety Edge	April 1, 2011	
80307			Seeding	Nov. 1, 2012	
80127			Steel Cost Adjustment	April 2, 2004	April 1, 2009
80255			Stone Matrix Asphalt	Jan. 1, 2010	Jan. 1, 2012
80143	361	X	Subcontractor Mobilization Payments	April 2, 2005	April 1, 2011
80317			Surface Testing of Hot-Mix Asphalt Overlays (NOTE: This special provision was previously named "*Surface Testing of Pavements*".)	Jan. 1, 2013	
80308	362	X	Synthetic Fibers in Concrete Gutter, Curb, Median and Paved Ditch	Nov. 1, 2012	
80286	363	X	Temporary Erosion and Sediment Control	Jan. 1, 2012	
80225			Temporary Raised Pavement Marker	Jan. 1, 2009	
80256			Temporary Water Filled Barrier	Jan. 1, 2010	Jan. 1, 2013
80301			Tracking the Use of Pesticides	Aug. 1, 2012	
80273	364	X	Traffic Control Deficiency Deduction	Aug. 1, 2011	
20338	365	X	Training Special Provisions	Oct. 15, 1975	
* 80318			Traversable Pipe Grate	Jan. 1, 2013	April 1, 2013
80270			Utility Coordination and Conflicts	April 1, 2011	Jan. 1, 2012
80288	368	X	Warm Mix Asphalt	Jan. 1, 2012	Nov. 1, 2012
80302	374	X	Weekly DBE Trucking Reports	June 2, 2012	
80289			Wet Reflective Thermoplastic Pavement Marking	Jan. 1, 2012	
80071			Working Days	Jan. 1, 2002	

The following special provisions are either in the 2013 Standard Specifications, the 2013 Recurring Special Provisions, or the special provisions Portland Cement Concrete, QC/QA of Concrete Mixtures, or Placing and Consolidating Concrete:

File Name	Special Provision Title	New Location	Effective	Revised
80275	Agreement to Plan Quantity	Article 202.07	Jan. 1, 2012	
80291	Calcium Chloride Accelerator for Class PP-2 Concrete	Recurring CS #28	April 1, 2012	
80237	Construction Air Quality – Diesel Vehicle Emissions Control	Articles 105.03 and 107.41	April 1, 2009	Jan. 2, 2012
80239	Construction Air Quality – Idling Restrictions	Articles 105.03 and 107.41	April 1, 2009	
80177	Digital Terrain Modeling for Earthwork Calculations	Recurring CS #32	April 1, 2007	
80272	Drainage and Inlet Protection Under Traffic	Articles 603.02 and 603.07	April 1, 2011	Jan. 1, 2012
80228	Flagger at Side Roads and Entrances	Articles 701.13 and 701.20	April 1, 2009	
80109	Impact Attenuators	Section 643	Nov. 1, 2003	Jan. 1, 2012
80110	Impact Attenuators, Temporary	Section 706	Nov. 1, 2003	Jan. 1, 2012
80203	Metal Hardware Cast into Concrete	Articles 503.02, 504.02, and 1006.13	April 1, 2008	Jan. 1, 2012
80290	Payrolls and Payroll Records	Recurring CS #5	Jan. 2, 2012	
80299	Portland Cement Concrete Inlay or Overlay	Recurring CS #29	April 1, 2012	
80280	Portland Cement Concrete Sidewalk	Article 424.07	Jan. 1, 2012	

File Name	Special Provision Title	New Location	Effective	Revised
80152	Self-Consolidating Concrete for Cast-In-Place Construction	The following special provisions: Portland Cement Concrete, QC/QA of Concrete Mixtures and Placing and Consolidating Concrete	Nov. 1, 2005	April 1, 2012
80132	Self-Consolidating Concrete for Precast and Precast Prestressed Products	The following special provisions: Portland Cement Concrete, QC/QA of Concrete Mixtures and Placing and Consolidating Concrete	July 1, 2004	April 1, 2012
80284	Shoulder Rumble Strips	Article 642.05	Jan. 1, 2012	
80285	Sidewalk, Corner or Crosswalk Closure	Articles 701.03, 701.15, and 1106.02	Jan. 1, 2012	
80075	Surface Testing of Pavements (Section 406 overlay portion will remain a special provision and will now be called "Surface Testing of HMA Overlays".)	Articles 407.09, 407.12, 420.10, 420.20, and 1101.10	April 1, 2002	Jan. 1, 2007
80287	Type G Inlet Box	Article 610.09	Jan. 1, 2012	

The following special provisions require additional information from the designer. The additional information needs to be included in a separate document attached to this check sheet. 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

STATE OF ILLINOIS
SPECIAL PROVISIONS

The following Special Provisions supplement the "Standard Specifications for Road and Bridge Construction," adopted January 1, 2012, the latest edition of the "Manual on Uniform Traffic Control Devices for Streets and Highways," and the "Manual of Test Procedures for Materials" in effect on the date of invitation for bids, and the Supplemental Specifications and Recurring Special Provisions indicated on the Check Sheet included herein which apply to and govern the construction of Maple Avenue; Section: 95-00049-00-PV; Proj: TE-M-8003 (095); Contract No. 637745; Job: C-91-399-01; County: Kane; 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:

The project is located on Maple Avenue, from Washington Street to L.W. Besinger Drive in the Village of Carpentersville, Kane County, IL. A gross and net length of 6,876 (1.30 miles) feet will be improved.

DESCRIPTION OF WORK:

The work consists of furnishing all labor, materials, equipment, and other incidentals necessary for the completion of roadway reconstruction; curb and gutter; storm sewer; water main; sanitary sewer repair; three sided structure replacement; street lighting; hot mix asphalt bike path; and other incidental and miscellaneous items of work in accordance with the Plans, Standard Specifications, and these Special Provisions.

MAINTENANCE OF ROADWAYS:
Effective: September 30, 1985 Revised: November 1, 1996

Beginning on the date that work begins on this project, the Contractor 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 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.

COMPLETION DATE PLUS WORKING DAYS
Effective: September 30, 1985
Revised: January 1, 2007

Revise Article 108.05 (b) of the Standard Specifications as follows:

"When a completion date plus working days is specified, the Contractor shall complete all contract items and safely open all roadways to traffic by 11:59 PM on November 30, 2013 except as specified herein.

The Contractor will be allowed to complete all clean-up work and punch list items within 15 working days after the completion date for opening the roadway to traffic. Under extenuating circumstances the Engineer may direct that certain items of work, not affecting the safe opening of the roadway to traffic, may be completed within the working days allowed for clean up work and punch list items. Temporary lane closures for this work may be allowed at the discretion of the Engineer."

Article 108.09 or the Special Provision for "Failure to Complete the Work on Time", if included in this contract, shall apply to both the completion date and the number of working days.

WORKING HOURS:

The Contractor shall perform all work in the Village of Carpentersville as follows:

7:00 A.M. to 7:00 P.M. Monday through Friday
7:00 A.M. to 5:00 P.M. Saturday

No work will be permitted on Sundays or holidays or at other times outside the above working hours without permission of the Engineer.

TRUCKING PERMITS:

The Village of Carpentersville requires permits for trucks exceeding the following limits:

WEIGHT
- 80,000 lbs gross
- 34,000 lbs tandem axle
- 20,000 lbs single axle
- Any weights exceeding the Federal Bridge Law formula

SIZE
- 8'6" width
- 13'6" height
- 55' length (semi-tractor/trailer)
- 60' length (truck-trailer)
- 42' length (single vehicle)

There is no charge for Truck Weight Permits and they may be obtained from the Village Police Department.

STATUS OF UTILITIES:

Name & Address of Utility Company	Location – Type	Expected Date of Completion
AT&T Distribution Legal Mandate Group 1000 Commerce Drive, 2nd Floor Oakbrook, Illinois 60523	Aerial Telephone: On ComEd Poles – See below Underground Telephone cable/duct:	Summer 2013

Name & Address of Utility Company	Location – Type	Expected Date of Completion
Mr. David Saint Germain Ref: AT&T # DU4104	Sta. 154+22, Right Sta. 157+25 to Sta. 161+00, Right Sta. 161+85, Right 169+82, Right Sta. 171+57, Right Sta. 171+78, Left Sta. 172+44, Left Manhole to be adjusted: Sta. 150+88, Right Sta. 157+82, Right Sta. 165+40, Right Sta. 165+51, Right Sta. 171+54, Right Splice Box to be Relocated: 161+55, Left 172+42, Left	
ComEd 1N423 Swift Road Lombard, Illinois 60148 Mr. Joe Stacho 630.424.5704 joseph.stacho@ComEd.com	Power Poles to be Relocated: Sta. 114+44 Left Sta. 115+40 Left Sta. 116+82 Left Sta. 117+20 Right Sta. 117+25 Left Sta. 119+67 Left Sta. 123+22 Left Sta. 123+66 Right Sta. 126+72 Left Sta. 126+12 Right Sta. 127+18 Left Sta. 128+75, Left Sta. 129+92, Left Sta. 130+02, Right Sta. 135+47, Right Sta. 136+33, Right	Summer 2013

Name & Address of Utility Company	Location – Type	Expected Date of Completion
	Sta. 143+89, Right Sta. 149+01, Left Sta. 150+28, Right Sta. 150+29, Right Sta. 152+84, Left Sta. 152+87, Left Sta. 154+73, Left Sta. 156+61, Left Sta. 158+48, Left Sta. 160+25, Left Sta. 161+63, Left Sta. 164+02, Left Sta. 165+87, Left Sta. 167+72, Left Sta. 169+63, Left Sta. 171+40, Left Sta. 172+50, Left Sta. 180+23, Left Guy Wire to be adjusted: 12+20 (Creek), Right Underground Electric Cable/Duct: No conflict anticipated.	
Comcast 688 Industrial Drive Elmhurst, Illinois 60126 Ms. Martha Gieras 630.600.6349	Aerial Cable TV: On ComEd Poles, See above. Underground Cable: Sta. 172+44, Left Sta. 173+10 to Sta. 177+68, Left	Summer 2013
Nicor Gas 1844 Ferry Road Naperville, Illinois 60563 Scott Stogsdill	Underground Natural Gas Main: Sta. 114+50, Left Sta. 117+20, Left Sta. 117+38, Right	Summer 2013

Name & Address of Utility Company	Location – Type	Expected Date of Completion
630.983.8676 ext. 2362 Nicor Ref # N8648	Sta. 127+44, Left Sta. 128+53, Right Sta. 130+11, Right Sta. 131+50 to Sta. 133+25, Right Sta. 133+88, Right Sta. 141+00 to Sta. 143+87, Right Sta. 150+82, Right Sta. 150+88, Right Sta. 153+00 to Sta. 154+50, Right Sta. 161+90, Right Sta. 162+47, Right	
G4S Technology LLC 1428 Sherman Road Romeoville, IL 60446 Mr. Lou Uridil	Underground Fiber Optic Cable: Sta. 172+44, Left	Summer 2013

NOTE: All underground utilities shall be located by the Contractor prior to the start of construction. Call J.U.L.I.E. at 1-800-892-0123 48 hours prior to digging. **Watch and Protect all utilities.**

The above represents the best information available and is included for the convenience of the bidder. Utility relocation startup date is assumed to be from the date the R.O.W. is staked and permits are secured unless otherwise noted. The applicable provisions of Articles 105.07, 107.20 and 107.31 of the Standard Specifications for Road and Bridge Construction shall apply.

Various utility companies will be relocating and constructing facilities within the project limits concurrent with the Contractor's operations. The Contractor shall coordinate his activities with the various utility companies at all times, and may be required to work only on portions of the improvement until relocation and construction is completed. The Contractor is advised that the relocation times and schedules listed herein are only estimates provided by the utility company. No extra compensation will be allowed for delays resulting from any work performed by a utility company or for their failure to meet said relocation schedule.

TRAFFIC CONTROL PLAN:

This work shall be done in accordance with applicable portions of Section 701 of the Standard Specifications, the Supplemental Specifications, the "Illinois Manual on Uniform Traffic Control Devices for Streets and Highways", and any details and Highway Standards contained in the Plans and Special Provisions, and the Special Provisions contained herein, except as modified herein.

Special Attention is called to Article 107.09 of the Standard Specifications and the following Highway Standards, Details, Recurring Local Roads and Streets Special Provisions, and Special Provisions contained herein, relating to traffic control.

HIGHWAY STANDARDS: 701006, 701011, 701301, 701311, 701501, 701701, 701801, 701901

DETAILS:

Traffic Control and Protection for Side Roads, Intersections, and Driveways (TC-10)
District One Typical Pavement Marking (TC-13)
Pavement Marking Letters and Symbols for Traffic Staging (TC-16)
Detour Signing for Closing State Highways (TC-21)
Arterial Road Information Sign (TC-22)
Driveway Entrance Signing (TC-26)

SPECIAL PROVISIONS (Included in these Special Provisions):

Maintenance of Roadways
Public Convenience and Safety
Temporary Information Signing
Work Zone Traffic Control (Lump Sum Payment)
Work Zone Traffic Control (LRS 3)
Flaggers in Work Zones (LRS 4)
Flaggers in Side Roads and Entrances (BDE)
Pavement Marking Removal (BDE)
Sidewalk, Corner or Crosswalk Closure (BDE)
Traffic Control Deficiency Deduction (BDE)

The Contractor shall contact the Village at least 72 hours in advance of beginning work. Construction operations shall be conducted in a manner such that streets will be open to emergency traffic and accessible as required to local traffic.

PUBLIC CONVENIENCE AND SAFETY (DIST 1):
Effective: May 1, 2012
Revised: July 15, 2012

Add the following to the end of the fourth paragraph of Article 107.09:

> "If the holiday is on a Saturday or Sunday, and is legally observed on a Friday or Monday, the length of Holiday Period for Monday or Friday shall apply."

Add the following sentence after the Holiday Period table in the fourth paragraph of Article 107.09:

> "The Length of Holiday Period for Thanksgiving shall be from 5:00 AM the Wednesday prior to 11:59 PM the Sunday After"

Delete the fifth paragraph of Article 107.09 of the Standard Specifications:

> "On weekends, excluding holidays, roadways with Average Daily Traffic of 25,000 or greater, all lanes shall be open to traffic from 3:00 P.M. Friday to midnight Sunday except where structure construction or major rehabilitation makes it impractical."

EMBANKMENT II:
Effective: March 1, 2011

Description. This work shall be according to Section 205 of the Standard Specifications except for the following.

Material. Reclaimed asphalt shall not be used within the ground water table or as a fill if ground water is present.

CONSTRUCTION REQUIREMENTS

Samples. Embankment material shall be sampled and tested before use. The contractor shall identify embankment sources, and provide equipment as the Engineer requires, for the collection of samples from those sources. Samples will be furnished to the Geotechnical Engineer a minimum of three weeks prior to use in order that laboratory tests for compaction can be performed. Embankment material placement cannot begin until tests are completed.

Placing Material. In addition to Article 202.03, broken concrete, reclaimed asphalt with no expansive aggregate, or uncontaminated dirt and sand generated from construction or demolition activities shall be placed in 6 inches (150 mm) lifts and disked with the underlying lift until a uniform homogenous material is formed. This process also applies to the overlaying lifts. The disk must have a minimum blade diameter of 24 inches (600 mm).

When embankments are to be constructed on hillsides or existing slopes that are steeper than 3H:1V, steps shall be keyed into the existing slope by stepping and benching as shown in the plans or as directed by the Engineer.

Compaction. Soils classification for moisture content control will be determined by the Soils Inspector using visual field examination techniques and the IDH Textural Classification Chart.

When tested for density in place each lift shall have a maximum moisture content as follows.

a) A maximum of 110 percent of the optimum moisture for all forms of clay soils.

b) A maximum of 105 percent of the optimum moisture for all forms of clay loam soils.

Stability. The requirement for embankment stability in article 205.04 will be measured with a Dynamic Cone Penetrometer (DCP) according to the test method in the IDOT Geotechnical Manual. The penetration rate must be equal or less than 1.5 inches (38 mm) per blow.

Basis of Payment. This work will not be paid separately but will be considered as included in the various items of excavation.

WEED CONTROL, PRE-EMERGENT GRANULAR HERBICIDE:

Effective: July 29, 2002
Revised: February 7, 2007

Description: This work shall consist of spreading a pre-emergent granular herbicide in place of weed barrier fabric in areas as shown on the plans or as directed by the Engineer. This item will be used in mulched plant beds and mulch rings.

Delete Article 253.11 and substitute the following:

Within 48 hours after planting, mulch shall be placed around all plants in the entire mulched bed or saucer area specified to a depth of 4 inches (100 mm). No weed barrier fabric will be required for tree and shrub planting. Pre-emergent Herbicide will be used instead of weed barrier fabric. The Pre-emergent Herbicide shall be applied prior to mulching. Mulch shall not be in contact with the base of the trunk.

Materials: The pre-emergent granular herbicide (Snapshot 2.5 TG or equivalent) shall contain the chemicals Trifluralin 2% active ingredient and Isoxaben with 0.5% active ingredient. The herbicide label shall be submitted to the Engineer for approval at least seventy-two (72) hours prior to application.

Method: The pre-emergent granular herbicide shall be used in accordance with the manufacturer's directions on the package. The granules are to be applied prior to mulching.

Apply the granular herbicide using a drop or rotary-type designed to apply granular herbicide or insecticides. Calibrate application equipment to use according to manufacturer's directions. Check frequently to be sure equipment is working properly and distributing granules uniformly. Do not use spreaders that apply material in narrow concentrated bands. Avoid skips or overlaps as poor weed control or crop injury may occur. More uniform application may be achieved by spreading half of the required amount of product over the area and then applying the remaining half in swaths at right angles to the first Apply the granular herbicide at the rate of 100 lbs/acre (112 kg/hal or 2.31bs/1000 sq. ft. (11.2 kg/1000 sq. meters).

Method of Measurement: Pre-emergent granular herbicide will be measured in place in Pounds (Kilograms) of Pre-emergent Granular Herbicide applied. Areas treated after mulch placement shall not be measured for payment.

Basis of Payment: This work will be paid for at the contract unit price per pound (kilogram) of WEED CONTROL, PRE-EMERGENT GRANULAR HERBICIDE.

TEMPORARY CONSTRUCTION FENCE

Description: According to Federal Executive Order 11990, dated May 24, 1977, and Articles 107.01 and 107.23 of the Standard Specifications, the Contractor shall protect the wetland areas on or adjacent to this project. This work shall consist of constructing, maintaining, removing, and disposing of a temporary fence and signs as shown on the plans and as described herein.

Materials: Materials shall be according to the following Articles/Sections of the Standard Specifications:

Fence Stakes	1081.15(b)
Fence	1081.15(d)[1]
Sign	720.02
Sign Support	1093

Note 1: Shall be high visibility orange snow fence only

Construction Requirements: The Contractor shall install fence at all areas as shown on the plans. When the fence is to be erected to protect a wetland area the Contractor shall also install a minimum of two signs at each wetland location. Signs shall not be spaced greater than 300' (100 m). The signs shall be 9" x 12" (225 mm x 300 mm) and shall read "Federally Protected Wetlands: KEEP OUT."

The Contractor shall remove the fence and signs at the completion of the project.

Method of Measurement: The fence will be measured for payment in feet (meters) along the top of the fence. The signs, sign supports, fence stakes, and removal of the fence and signs will not be measured for payment.

Basis of Payment: The fence will be paid for at the contract unit price per foot (meter) for TEMPORARY CONSTRUCTION FENCE, which price shall include the cost of the snow fence, fence stakes, signs and sign supports.

AGGREGATE SUBGRADE IMPROVEMENT (D-1):
Effective: February 22, 2012
Revised: January 1, 2013

Add the following Section to the Standard Specifications:

"SECTION 303. AGGREGATE SUBGRADE IMPROVEMENT

303.01 Description. This work shall consist of constructing an aggregate subgrade improvement.

303.02 Materials. Materials shall be according to the following.

Item	Article/Section
(a) Coarse Aggregate	1004.06
(b) Reclaimed Asphalt Pavement (RAP) (Notes 1, 2)	1031

Note 1. Crushed RAP, from either full depth or single lift removal, may be mechanically blended with aggregate gradations CS 01 or CS 02 but shall not exceed 40 percent of the total product. The top size of the Coarse RAP shall be less than 4 in. (100 mm) and well graded.

Note 2. RAP having 100 percent passing the 1 1/2 in. (37.5 mm) sieve and being well graded, may be used as capping aggregate in the top 3 in. (75 mm) when aggregate gradations CS 01 or CS 02 are used in lower lifts. When RAP is blended with any of the coarse aggregates, the blending shall be done with mechanically calibrated feeders.

303.03 Equipment. The vibratory machine shall be according to Article 1101.01, or as approved by the Engineer.

303.04 Soil Preparation. The stability of the soil shall be according to the Department's Subgrade Stability Manual for the aggregate thickness specified.

303.05 Placing Aggregate. The maximum nominal lift thickness of aggregate gradations CS 01 or CS 02 shall be 24 in. (600 mm).

303.06 Capping Aggregate. The top surface of the aggregate subgrade shall consist of a minimum 3 in. (75 mm) of aggregate gradations CA 06 or CA 10. When Reclaimed Asphalt Pavement (RAP) is used, it shall be crushed and screened where 100 percent is passing the 1 1/2 in. (37.5 mm) sieve and being well graded. RAP that has been fractionated to size will not be permitted for use in capping. Capping aggregate will not be required when the aggregate subgrade improvement is used as a cubic yard pay item for undercut applications. When RAP is blended with any of the coarse aggregates, the blending shall be done with mechanically calibrated feeders.

303.07 Compaction. All aggregate lifts shall be compacted to the satisfaction of the Engineer. If the moisture content of the material is such that compaction cannot be obtained, sufficient water shall be added so that satisfactory compaction can be obtained.

303.08 Finishing and Maintenance of Aggregate Subgrade Improvement. The aggregate subgrade improvement shall be finished to the lines, grades, and cross sections shown on the plans, or as directed by the Engineer. The aggregate subgrade improvement

shall be maintained in a smooth and compacted condition.

303.09 Method of Measurement. This work will be measured for payment according to Article 311.08.

303.10 Basis of Payment. This work will be paid for at the contract unit price per cubic yard (cubic meter) for AGGREGATE SUBGRADE IMPROVEMENT or at the contract unit price per square yard (square meter) for AGGREGATE SUBGRADE IMPROVEMENT, of the thickness specified.

Add the following to Section 1004 of the Standard Specifications:

"**1004.06 Coarse Aggregate for Aggregate Subgrade Improvement.** The aggregate shall be according to Article 1004.01 and the following.

(a) Description. The coarse aggregate shall be crushed gravel, crushed stone, or crushed concrete.

(b) Quality. The coarse aggregate shall consist of sound durable particles reasonably free of deleterious materials.

(c) Gradation.

(1) The coarse aggregate gradation for total subgrade thickness less than or equal to 12 in. (300 mm) shall be CS 01.

The coarse aggregate gradation for total subgrade thickness more than 12 in. (300 mm) shall be CS 01 or CS 02.

Grad No.	COARSE AGGREGATE SUBGRADE GRADATIONS Sieve Size and Percent Passing				
	8"	6"	4"	2"	#4
CS 01	100	97 ± 3	90 ± 10	45 ± 25	20 ± 20
CS 02		100	80 ± 10	25 ± 15	

Grad No.	COARSE AGGREGATE SUBGRADE GRADATIONS (Metric)
	Sieve Size and Percent Passing

	200 mm	150 mm	100 mm	50 mm	4.75 mm
CS 01	100	97 ± 3	90 ± 10	45 ± 25	20 ± 20
CS 02		100	80 ± 10	25 ± 15	

(2) The 3 in. (75 mm) capping aggregate shall be gradation CA 6 or CA 10."

AGGREGATE SURFACE COURSE FOR TEMPORARY ACCESS:

This work shall consist of furnishing and placing aggregate for use as temporary access in accordance with section 402 of the Standard Specifications, except as modified herein.

Revise Article 402.10 of the Standard Specifications to read:

"**402.10 For Temporary Access**. The contractor shall construct and maintain aggregate surface course for temporary access to private entrances, commercial entrances and roads according to Article 402.07 and as determined by the Engineer.

The aggregate surface course shall be constructed to the dimensions and grades specified below, except as modified by the plans or as determined by the Engineer.

(a) Private Entrance. The minimum width shall be 12 ft. The minimum compacted thickness shall be 6 in. The maximum grade shall be eight percent, except as required to match the existing grade.

(b) Commercial Entrance. The minimum width shall be 24 ft. The minimum compacted thickness shall be 9 in. The maximum grade shall be six percent, except as required to match the existing grade.

(c) Road. The minimum width shall be 24 ft. The minimum compacted thickness shall be 9 in. The grade and elevation shall be the same as the removed pavement, except as required to meet the grade of any new pavement constructed.

Maintaining the temporary access shall include relocating and/or regrading the aggregate surface coarse for any operation that may disturb or remove the temporary access. The same type and gradation of material used to construct the temporary access shall be used to maintain it.

When use of the temporary access is discontinued, the aggregate shall be removed and utilized in the permanent construction or disposed of according to Article 202.03".

402.12 Method of Measurement. Add the following to this article:

"Aggregate surface course for temporary access will be measured for payment as each for every private entrance, commercial entrance or road constructed for the purpose of temporary access. If a residential drive, commercial entrance, or road is to be constructed under multiple stages, the aggregate needed to construct the second or subsequent stages will not be measured for payment but shall be included in the cost per each of the type specified".

402.13 Basis of Payment. Revise the second paragraph of this Article to read:

"Aggregate surface course for temporary access will be paid for at the contract unit price per each for TEMPORARY ACCESS (PRIVATE ENTRANCE), TEMPORARY ACCESS (COMMERCIAL ENTRANCE) or TEMPORARY ACCESS (ROAD).

Partial payment of the each amount bid for temporary access, of the type specified, will be paid according to the following schedule:

(a) Upon construction of the temporary access, sixty percent of the contract unit price per each, of the type constructed, will be paid.

(b) Subject to the approval of the Engineer for the adequate maintenance and removal of the temporary access, the remaining forty percent of the pay item will be paid upon the permanent removal of the temporary access".

TEMPORARY PAVEMENT:

Effective: March 1, 2003
Revised: April 10, 2008

Description. This work shall consist of constructing a temporary pavement at the locations shown on the plans or as directed by the engineer.

The contractor shall use either Portland cement concrete according to Sections 353 and 354 of the Standard Specifications or HMA according to Sections 355, 356, 406 of the Standard Specifications, and other applicable HMA special provisions as contained herein. The HMA mixtures to be used shall be specified in the plans. The thickness of the Temporary Pavement

shall be as described in the plans. The contractor shall have the option of constructing either material type if both Portland cement concrete and HMA are shown in the plans.

Articles 355.08 and 406.11 of the Standard Specifications shall not apply.

The removal of the Temporary Pavement, if required, shall conform to Section 440 of the Standard Specification.

Method of Measurement. Temporary pavement will be measured in place and the area computed in square yards (square meters).

Basis of Payment. This work will be paid for at the contract unit price per square yard (square meter) for TEMPORARY PAVEMENT.

Removal of temporary pavement will be paid for at the contract unit price per square yard (square meter) for PAVEMENT REMOVAL.

HOT-MIX ASPHALT DRIVEWAY PAVEMENT:

This work shall be performed in accordance with Articles 406.02, 406.03, 406.05, 406.06, 406.07, and 406.12 of the Standard Specifications, and the detail shown on the Plans, except as modified herein. This work shall consist of placing HMA Surface Course, Mix "D" N50, and HMA Binder Course, Il-19.0, N50 to the thicknesses indicated.

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

Basis of Payment. This work will be paid for at the contract unit price per square yard for HOT-MIX ASPHALT DRIVEWAY PAVEMENT of the thickness indicated.

THREE SIDED PRECAST CONCRETE STRUCTURE

This work shall consist of furnishing and installing the three-sided precast concrete structure according to applicable portions of Sections 503 and 504 of the Standard Specifications. All three-sided precast concrete structures, precast headwalls, and precast wingwalls shall be produced according to the Department's latest Policy Memorandum "Quality Control/ Quality Assurance Program for Precast Products".

The three-sided concrete structure shall be designed according to the AASHTO LRFD

Specifications shown on the structure plans and shall include the effects of unyielding foundation conditions for the sequence of construction anticipated.

The Contractor shall be responsible for diverting the water from the construction area using a method meeting the approval of the Engineer. Any diverted water shall be filtered prior to discharge. The cost of diverting and filtering the water shall be considered as included in the contract unit price bid for the three sided structure being constructed and no additional compensation will be allowed.

For structures over water, 3 in. diameter drain openings spaced at 8 ft centers located 2 ft above the flow line shall be provided according to Article 503.11.

All joints between segments shall be sealed according to Article 540.06 except nonwoven geotechnical fabric will not be allowed for the external sealing bands. When the minimum fill over the structure between the edges of the shoulders is less than or equal to 3 ft., the top joints between segments shall also be secured with a previously approved mechanical connection. The mechanical connection shall be used to connect a minimum length of 12 ft. of exterior segments at each end of the structure. There shall be a minimum of 4 mechanical connections per joint with a maximum spacing of 10 ft. All plates, shapes, and hardware shall be galvanized or stainless steel. If the design of the structure also requires grouted shear keys, the keyway shall be cast in the top slab of the segments and grouted according to Article 504.06(e).

Shop drawings for three sided precast concrete structures shall be submitted according to Article 1042.03(b) and Article 105.04 of the Standard Specifications. The supplier selected by the Contractor shall submit complete design calculations and shop drawings, prepared and sealed by an Illinois Licensed Structural Engineer, for approval by the Engineer.

Prior approval by the Department for the structural feasibility and adequacy of proprietary systems will enhance the approval process of the final structure design but in no case shall relieve the Contractor of the design or QC/QA requirements stated herein. The following proprietary systems have been previously approved for the structural feasibility and adequacy only:

1) Hy-Span
2) Con Span
3) REDI-SPAN Bridge System
4) BEBO Arch System
5) Techspan
6) Eco-Span Arch System

7) Precast Forum Arch System

The system chosen by the contractor shall provide a hydraulically equivalent waterway opening to that specified on the plans. Evidence of equivalency shall also be provided in writing to the Engineer for review and approval prior to ordering any materials.

When precast concrete substructure is specified, the Contractor may choose to substitute cast-in-place for precast headwalls and wingwalls unless otherwise specified on the plans. No additional compensation for these substitutions will be allowed and the Contractor shall submit complete design calculations and shop drawings, prepared and sealed by an Illinois Licensed Structural Engineer, for approval by the Engineer.

When Cast-in-place concrete substructure is specified, the Contractor may choose to substitute precast for cast-in-place headwalls or wingwalls unless otherwise specified on the plans. No additional compensation for these substitutions will be allowed and the Contractor/supplier shall submit complete design calculations and shop drawings prepared and sealed by an Illinois Licensed Structural Engineer, for approval by the Engineer.

The Three Sided Precast Concrete Structure, headwalls, and wingwalls shall be a decorative construction on exposed areas of the structure as shown on the Plans and details. These components shall closely duplicate the appearance of natural stone. Patterning of the simulated stone shall be non-repeating and random. Seam lines or match lines caused from two or more molds coming together shall not be apparent when viewing final surfaces. The final concrete surface finish shall be provided and applied to duplicate the effect of a random stone wall. Decorative construction should extend a minimum below exposure lines as shown on the Plans and details. The simulated stone mold patterns shall be Ledgestone by Karlson Forming Specialties, Inc. (Amery, WI 715.268.2505) or approved equal. Simulated stone texture shall be manufactured by Karlson Forming Specialties, Inc. or an approved equal.

The Contractor shall submit sample panels of the decorative concrete wall showing size and surface finish for approval by owner. The samples shall be a minimum of 36" x 36" in size. The sample panel will be used as a basis for comparison with the finished product for the purposes of acceptance or rejection. Shop drawings shall be submitted showing plan, elevation, and details (to show overall pattern, joint locations, end, edge, and other special conditions) for approval by Engineer.

The excavation and backfill for three sided precast concrete structures shall be according to Section 502 of the Standard Specifications and any additional backfilling requirements based on

the precast supplier's design. All construction inspection and material certification necessary to verify these additional backfilling requirements in the field shall be the responsibility of the supplier. The three-sided precast concrete structure shall be placed according to applicable requirements of Article 542.04(d) of the Standard Specifications.

Method of Measurement. Three sided precast concrete structures will be measured in feet. The overall length shall be measured from out to out of headwalls along the centerline of each span of the structure. Simulated stone mold patterns will not be measured for payment. Class SI concrete for grouted keyways or mechanical connections between precast units will not be measured for payment.

Basis of Payment. This work will be paid for at the contract unit price per foot for THREE SIDED PRECAST CONCRETE STRUCTURES of the size specified. Simulated stone mold patterns will not be paid for separately but shall be considered as included in the contract unit price for Precast Concrete Substructure. Rock excavation will be paid for separately according to Article 502.13 of the Standard Specifications.

The cost of specified cast-in-place footings will not be included in this item but will be paid for separately.

When precast wingwalls and headwalls are specified, this work will be paid for at the lump sum price for PRECAST CONCRETE SUBSTRUCTURE.

FORM LINER TEXTURED SURFACE

Work shall be according to the applicable portions of Article 503.06 of the Standard Specifications and as shown in the Plans, except as modified herein:

"The form liner pattern (below the 4" coping) shall be:

Ledgestone
Karlson Forming Specialties, Inc.
P.O. Box 171
Amery, WI 54001
(715)268-2505
www.formliner.com

The form liner pattern for the edges of the 4" coping shall be:

Stone Texture
Also by Karlson Forming Specialties, Inc.

The top surface of the 4" coping shall be finished with a roughened texture, to simulate natural stone."

"Installation.
Form liners shall be installed in accordance with the manufacturer's recommendations to achieve the highest quality concrete appearance possible. Form liners shall withstand concrete placement pressures without leakage causing physical or visual defects. After each use, liners shall be cleaned and made free of build-up prior to the next placement, and visually inspected for blemishes or tears. If necessary, the form liners shall be repaired in accordance with the manufacturer's recommendations. All form liner panels that will not perform as intended or are no longer repairable shall be replaced.

The liner shall be securely attached to the forms according to the manufacturer's recommendations. Liners shall be attached to each other with flush seams and seams filled as necessary to eliminate visible evidence in cast concrete. Liner butt joints shall be blended into the pattern so as to create no visible vertical or horizontal seams or conspicuous form butt joint marks. Liner joints must fall within pattern joints or reveals. Finished textures shall be continuous without visual disruption and properly aligned over adjacent and multiple liner panels. Continuous or single liner panels shall be used where liner joints may interrupt the intended pattern.

Wall ties shall be coordinated with the liner and form to achieve the least visible result. Curing methods shall be compatible with the desired aesthetic result. Use of curing compounds will not be allowed. Concrete slump requirements shall meet the form liner manufacturer's recommendations for optimizing the concrete finish.

It is the intention of this specification that no rubbing of flat areas or other repairs shall be required after form removal. The finished exposed formed concrete surfaces shall be free of visible vertical seams, horizontal seams, and butt joint marks. Grinding and chipping of finished formed surfaces shall be avoided."

"Submittals.
A 3 x 3 foot test sample shall be supplied to the Engineer for Village approval 30 days prior to pouring cast-in-place concrete with form liner. This sample shall be representative of the upper

portion of the headwall as viewed from the outside of the structure, and shall include:

Concrete coping with textures and coloration
Form liner textured surface with coloration."

Method of Measurement.
Add "No deductions will be made for the volume of concrete displaced by form lined surfaces," after the last sentence of the first paragraph of Article 503.21(b) of the Standard Specifications.

CONCRETE SURFACE COLOR TREATMENT:

Description.
This work shall consist of concrete substrate surface preparation, furnishing material and staining concrete surfaces. That work shall be performed according to Manufacturer's requirements, as specified herein and on the Plans.

Materials.
Concrete stain system shall be according to the requirements of the Manufacturer:

Karlson Forming Specialties, Inc.
P.O. Box 171
Amery, WI 54001
(715)268-2505
www.formliner.com

Coloration.
Concrete surfaces shall be cleaned prior to applying color stain. The prepared surfaces shall be cleaned such that all curing compounds, laitance, dirt and other foreign material and substances are removed.

All areas receiving Form Liner Textured Surface shall receive concrete stain, including coping on top of headwalls and wingwalls, and the upstream and downstream edges of the three-sided precast units. Final concrete surface shall be provided and applied to duplicate the effect of a random stone wall with individual stones of various colors ranging from four shades of gray and tan.

Submittals.
(a) Manufacturer's technical data sheets and installation instructions.
(b) The 3' x 3' test sample described in the special provision for FORM LINER

TEXTURED SURFACE.

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

Basis of Payment.
Staining concrete will be paid for at the contract unit price per square foot for CONCRETE SURFACE COLOR TREATMENT, which price will be payment in full for all materials, equipment, and labor necessary to complete the Work as herein specified.

DRAINAGE STRUCTURES:

Description. This work shall include the design, fabrication and installation of precast concrete drainage structures, as shown in the Plans and as described herein.

Design Requirements. The Drainage Structures shall be designed and detailed in accordance with the combined requirements of the following three documents:

2010 AASHTO "LRFD Bridge Design Specifications, Fifth Edition" with 2011 and 2012 Interims.

ASTM C913-08 "Standard Specification for Precast Concrete Water and Wastewater Structures"

ASTM C890-06 (Reapproved 2011) "Standard Practice for Minimum Structural Design Loading for Monolithic or Sectional Precast Concrete Water and Wastewater Structures"

ACI 318-11 "Building Code Requirements for Structural Concrete and Commentary"

In case of a conflict between documents, the stricter requirements shall take precedence.

Construction Requirements. This work shall be according to the applicable portions of Section 504, 602, and 604 of the Standard Specifications, including the Shop Drawing requirements of Article 1042.03(b). Drawings shall be sealed by an Illinois Licensed Structural Engineer, and shall include all necessary details and notes for the complete fabrication and installation of the Drainage Structure, including excavation and backfilling requirements.

Basis of Payment. This work will be paid for at the contract unit price per each for DRAINAGE STRUCTURES, of the number specified.

SEGMENTAL BLOCK RETAINING WALL:

Description. This work shall consist of furnishing and installing a modular retaining wall system at locations shown on the plans and as determined by the Engineer.

General. The wall shall consist of a leveling pad, pre-cast concrete blocks, select granular backfill, soil reinforcement if required by the design, and drainage system.

Submittals. The wall supplier shall submit shop drawings to the Engineer. The shop drawings shall include cross section sheet(s), details on the drainage system including discharge points through the wall every 75 feet, dimensions, quantities and installation procedures necessary to construct the wall. No work or ordering of materials for the structure shall be done by the Contractor until the submittal has been approved in writing by the Engineer.

Materials. The materials shall meet the following requirements:

a. The modular retaining wall system shall be Vera-Lok Standard as manufactured by Versa-Lok Retaining Wall Systems. The color shall be as selected by the Village. The external face shall have a natural stone appearance and texture.

b. The drainage system shall consist of a 3-inch diameter perforated flexible pipe with a continuous fabric liner surrounding the outside. A tee fitting of the same type as the pipe shall be provided for each discharge point. A decorative plate shall be provided where the drainage system discharges through the wall.

c. The granular backfill located behind the blocks shall meet a CA-11 gradation, shall extend from the leveling pad to 5 inches below the complete top of wall (cap) for a minimum one-foot behind the backside of the wall and be encased in geotechnical fabric meeting Article 1080.05 of the Standard Specifications.

d. The leveling pad shall be crushed aggregate meeting a CA-6 gradation and comply with the requirements of Aggregate Base Course, Type B.

e. If soil reinforcement is required by the approved design, the Contractor shall submit a manufacturer's certification for the soil reinforcement properties which equals or exceeds those required in the design computations. The soil reinforcement shall be manufactured from high density polyethylene (HDPE)

uniaxial or polypropylene biaxial resins or high tenacity polyester fibers with a PVC coating, stored between -20° and 140° F (-29° and 60° C). The following standards shall be used in determining and demonstrating the soil reinforcement capacities:

ASTM D638 Test Method for Tensile Properties of Plastic
ASTM D1248 Specification for Polyethylene Plastics Molding and Extrusion Materials
ASTM D4218 Test Method for Carbon Black Content in Polyethylene Compounds
ASTM D5262 Test Method for Evaluating the Unconfined Tension Creep Behavior of Geosynthetics
GG1-Standard Test Method for Geogrid Rib Tensile Strength
GG2-Standard Test Method for Geogrid Junction Strength
GG4-Standard Practice for Determination of the Long Term Design Strength of Geogrid
GG5-Standard Practice for Evaluating Geogrid Pullout Behavior

CONSTRUCTION REQUIREMENTS:

General. The Contractor shall obtain technical assistance from the supplier during wall erection to demonstrate proper construction procedures and shall include all costs related to this technical assistance in the unit price bid for this item. Embedment depth, defined as the vertical distance from finished grade at the front face of the wall to the top of the leveling pad, shall be a minimum of 2 feet.

Method of Measurement. The segmental block retaining wall will be measured for payment by the square foot of wall face from the bottom of the actual exposed vertical wall surface to the top of the wall cap for the length of the wall as shown on the contract plans.

Basis of Payment. This work for installing the segmental block retaining wall will be paid for at the contract unit price per square foot for SEGMENTAL BLOCK RETAINING WALL.

STORM SEWERS (WATER MAIN REQUIREMENTS):

This work shall be done in accordance with Section 550 of the Standard Specifications except as modified herein.

550.02 Materials. Revise this Article to read:

"**550.02 Materials.** The storm sewer pipe shall be water main quality pipe meeting the requirements of sections 40 and 41 – 2.01 of the "Standard Specifications for Water and Sewer Main Construction in Illinois".

550.10 Basis of Payment. Revise the first paragraph of this Article to read:

"**550.10 Basis of Payment.** This work will be paid for at the contract unit price per foot for STORM SEWERS (WATER MAIN REQUIREMENTS), of the diameter specified, which price shall also include connections to existing storm sewer structures and existing storm sewers."

STORM SEWERS, RUBBER GASKET:

This work shall be done in accordance with Section 550 of the Standard Specifications except as modified herein.

550.01 Description. Revise the following Article to read:

"**550.01 Description.** This work shall consist of constructing storm sewers of the required inside diameter with rubber gaskets and the necessary fittings."

550.02 Materials. Add the following sentence to the end of this Article:

"The rubber gasket shall be a rubber ring gasket joint conforming to the requirements of ASTM Designation C443 (latest revision) for Joints for Circular Concrete Sewer and Culvert Pipe, Using Flexible Watertight Rubber Gaskets."

550.10 Basis of Payment. Revise the first paragraph of this Article to read:

"**550.10 Basis of Payment.** This work will be paid for at the contract unit price per foot for STORM SEWERS, RUBBER GASKET, of the class, type, and diameter specified."

TRENCHING, BACKFILLING AND COMPACTING FOR WATER MAIN AND SANITARY SEWER:

SUMMARY: Trench, backfill, and compact as shown on the Plans, as specified herein and as needed for installation of water main and sanitary sewer in accordance with the "Standard Specification for Water and Sewer Main Construction in Illinois".

QUALITY ASSURANCE: Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

Use equipment adequate in size, capacity, and numbers to accomplish the work in a timely manner.

Comply with requirements of governmental agencies having jurisdiction.

GRANULAR PIPE BEDDING AND COVERING MATERIALS: Provide well graded, washed, mixture of gravel or crushed stone aggregate free of clay, loam, dirt, calcareous or other foreign matter conforming to Section 1004 of the Standard Specifications gradation No. CA 11, or the Standard Specifications for Water and Sewer Construction in Illinois, with the following gradation:

Sieve Size	Percent Passing
1-inch	100%
3/4-inch	84 -100%
1/2-inch	30 - 60%
No. 4	0 -12%
No. 16	0 - 6%

1. For flexible thermoplastic pipes including sewer pipes, sewage force mains, and water mains: Comply with ASTM D2321, Class I or II as modified below.
   a. Exclude sharp angular granular materials.
   b. Limit maximum particle size to 1/2-inch (IDOT CA 15).
   c. Do not use Class II materials in wet conditions.
2. For rigid pipes comply with ASTM C12, Bedding Class B.

EXCAVATED BACKFILL MATERIALS IN NON-PAVED AREAS: Provide soil materials free from organic matter, rubble, or frozen material, containing no rocks or lumps over 6 inches, and with not more than 15 percent of the rocks or lumps larger than 2 inches.

GRANULAR BACKFILL MATERIALS: Provide granular material.

Granular Material: Use 100% crushed stone or gravel complying with Section 1004 of the Standard Specifications gradation No. CA-6.

TEMPORARY AGGREGATE PAVEMENT MATERIAL: Provide well graded, 100 percent crushed gravel or crushed stone aggregate free of clay, loam, dirt, calcareous or other foreign matter conforming to Section 1004 of the Standard Specifications gradation No. CA 6.

GEOTECHNICAL FABRIC: Provide geotechnical fabric for separation of granular material and native soil in areas where trench is over excavated to remove unsuitable materials.

1. Acceptable manufacturers:
   a. Mirafi: 160N.
   b. Synthetic Industries: 601.
   c. Amaco: 4551.
   d. Or approved equal.

WATER MAIN REPAIR:

1. Repair water main or water services damaged during construction utilizing products of type and manufacturers as approved by the Village.
2. Pipe couplings for joining of sections of cut water main where a section of new pipe is used to replace a broken pipe, with alloy bolts and fusion bonded epoxy coating.
   a. Acceptable manufacturers:
      (1) Cascade CRCER.
      (2) Ford FC2W.
      (3) Or approved equal.
3. Repair clamps for broken or cracked pipe and sealing of existing corporation stop opening.
   a. Use full-circle single band all stainless steel clamps.
   b. Acceptable manufacturers:
      (1) Cascade CR1.
      (2) Ford.
      (3) Or approved equal.
   c. Replace damaged service corporation stops by installation of full-circle single band all stainless steel clamps, with service outlet, matching manufacturer's and styles used for repair of a cracked pipe.

PIPE INSULATION:

1. Rigid pipe insulation:
   a. Provide extruded polystyrene sheathing conforming to ASTM C578, Type IV.
   b. Thickness: 2 inches.
   c. Minimum R-Value: 10.

d. Water absorption: No greater than 0.10% by volume per ASTM C272.
e. Acceptable products:
   i. Formular Rigid Foam Insulation, Owens-Corning.
   ii. Or approved equal.

GENERAL CONSTRUCTION REQUIREMENTS:

1. Protection of existing facilities:
   a. Unless shown to be removed, protect existing structures, conduits, active utility lines and all other facilities shown on the Plans or otherwise made known to the Contractor. If damaged, repair, replace, or restore to a condition equal to or better than the original condition at no additional cost to the Village.
   b. Notify all persons, firms, corporations, or agencies owning or using any existing structures, conduits, or utilities which may be affected by the Work prior to the start of construction.
   c. Make arrangements to locate, maintain, protect, and/or relocate facilities in order to complete the Work.
   d. Make such exploration as is necessary to determine the exact location of underground utilities.
   e. Exercise care during the progress of work in the area to prevent damage to the utilities.
   f. Whenever it becomes necessary to relocate underground gas mains, telephone conduit, or electrical lines or support or relocate utility poles, the utility company involved will make such relocation or provide pole support. Notify the utility company promptly.
   g. Whenever it becomes necessary to relocate water or other pipes or conduits in direct conflict with the proposed pipe (exclusive of culverts) which are not shown on the Plans, obtain the direction from the Engineer for the relocation. Compensation will be allowed only for such quantities as determined by the Engineer.
   h. Do not obstruct accessibility of fire hydrants.

TRENCHING:

1. Do not advance trench excavation more than 50 feet ahead of completed pipe installation except as approved by the Engineer.
2. Provide and maintain sheeting, shoring, and bracing necessary for protection of the Work, adjacent property, and for the safety of personnel.

a. Remove temporary sheeting and bracing after backfilling to an elevation which will prohibit caving of exposed sidebanks.
b. Fill voids left by the withdrawal of sheeting with compacted sand.
c. The Engineer may direct that supports in trenches be cut off at any specific elevation to protect adjacent facilities or property.
d. No extra payment will be made for the supports left in place without the direction of the Engineer.
e. Do not leave supports within 4 feet of the ground or pavement surface in place without the permission of the Engineer.

3. Provide pumping, bailing, wellpointing, and construct ditches and dikes required to dewater and drain ground water, sewage, or stormwater to keep the excavation and site dry for the completion of the Work.
4. Excavation:
   a. Excavate by open cut unless otherwise indicated on the Plans.
   b. Excavate trenches to the depths and grades necessary for the pipelines with allowances for bedding material.
   c. Over excavate organic, soft, spongy, or otherwise unsuitable soils found at or below the bottom of the trench to meet firm subsoil or as determined by the Engineer.
   d. Excavation of existing asbestos cement water mains to allow replacement of existing water mains with new ductile iron water main pipe shall include crushing the existing asbestos cement pipe in place and leaving the residual crushed pipe in the bottom of the trench. Cover crushed pipe with bedding material as part of bedding and covering of new water main pipe.
   e. Comply with the following maximum trench widths at the top of pipelines:

Nominal Pipe Sizes (inches)	Trench Widths (inches)
12 or smaller	30
14 - 18	36

EXCAVATION FOR APPURTENANCES:

1. Excavate for manholes, valve vaults and similar structures to the depths as shown on the Plans and to a distance sufficient to leave at least 12 inches clear between outer surfaces and the embankment or shoring that may be used to hold and protect the banks.

2. Over depth excavation beyond depths indicated on the Plans that has not been directed will be considered unauthorized. Fill with sand, gravel, or lean concrete as determined by the Engineer, and at no additional cost to the Village.

BEDDING AND COVERING OF PIPE: Bedding is defined as the shaped and tamped material which supports the pipes. Covering is defined as the compacted material which protects and covers the pipes. Provide continuous bedding and covering for underground pipelines, except where concrete encasement, concrete cradles, or augering or jacking are indicated.

Pipe bedding:

1. Provide compacted granular pipe bedding and covering material with a minimum thickness of 4 inches under pipe barrels and 2 inches under bells.
2. Wherever the trench is over-excavated due to removal of unsuitable material, refill the trench bottom to the bottom of the pipe bedding with granular material conforming to Section 1004 of the Standard Specifications gradation No. CA 1 as determined by the Engineer.
   a. Unless otherwise specified to be paid for, removal and replacement of material, or unsuitable material, to a depth of one foot below pipe barrel outside diameter is considered incidental to installation of the pipe.
3. Wherever the trench is over excavated to remove unsuitable material, install geotechnical fabric between native soil and granular material:
   a. Install fabric to cover bottom and sides of trench to heights as follows:
      (1) For all flexible pipe and rigid pipe 24-inch and smaller: to envelop entire bedding and covering material and overlap 1-foot at the top.
      (2) Where undercut is of a depth that requires more than one piece of fabric to provide envelope, provide sewn seams between sections of fabric.
4. Wherever two or more pipes or conduits are placed in the same trench or excavated area, backfill the trench with granular pipe bedding and covering material to support the uppermost pipe or conduit.

Pipe covering:

1. Following placement of pipe and inspection of joints, provide compacted granular pipe bedding and covering material for the full width of the trench to the following levels unless otherwise shown on the Plans:
   a. For pipes sizes 24-inch and smaller, except flexible thermoplastic pipe: To 4 inches above the top of the pipe.
   b. For flexible thermoplastic pipes: To 12 inches above the top of the pipe.

c. If compacted excavated materials are used for backfilling under the pavement as indicated on the Plans: To 12 inches above the top of the pipe for all pipe sizes.

2. Place granular pipe bedding and covering material in uniform loose layers not exceeding 8 inches thick.
   a. Compact each layer firmly by ramming or tamping with tools approved by the Engineer in such a manner as not to disturb or injure the pipe to yield a minimum density of 95 percent of maximum dry density as determined according to ASTM D1557 or AASHTO-T180.
3. Where trench is widened by installation of structures or jacking pits, extend bedding and covering materials to total width of excavations.

TRENCH BACKFILLING AND COMPACTING: Backfill trench from the top of pipe cover to topsoil, paving subgrade, or foundation level.

For trench in lawns, parkways, and other improved areas not subject to vehicular traffic:

1. Backfill with excavated materials in uniform loose layer not exceeding 12 inches thick.
2. Compact each layer of trench backfill materials to yield a minimum of 85 percent of maximum dry density as determined according to ASTM D1557 or AASHTO-T180.

For trench in streets, parking areas, driveways, sidewalks, curb and gutter, or within 2 feet of any proposed curb and gutter, sidewalk, or other paved areas:

1. Backfilling with granular backfill materials:
   a. Place in uniform loose layer not exceeding 12 inches thick and compact with vibrating roller or equivalent.
   b. Water jetting may not be used in lieu of vibratory compaction.
   c. Fill the top of trenches with temporary aggregate pavement material to the depth(s) required to provide aggregate base and pavement base, binder and surface courses of the depths shown on the Plans.
2. Compacting requirements:
   a. Compact each layer of trench backfill materials to yield a minimum density of 90 percent of maximum dry density as determined according to ASTM D1557 or AASHTO T-180.
   b. Determine the density of compacted backfill at intervals of not more than 500 feet at locations selected by the Engineer.
   c. Provide the services of an independent testing laboratory for the density tests.

3. Maintain temporary pavement level with adjoining pavement surfaces until the permanent pavement is placed.

BACKFILL AND BEDDING FOR APPURTENANCES:

1. Provide 3 inches of granular bedding material unless otherwise shown on the Plans. Sand will not be allowed.
2. Do not backfill until new concrete has properly cured, and any required tests have been accepted.
3. Backfill in lawns and landscaped areas with excavated materials.
4. Backfill in pavement around manholes, catch basins, inlets, valve vaults, and other structures as determined by the Engineer with granular backfill materials.

FINISH GRADING:

1. Provide finish grading and filling to achieve the lines and grades.
2. Slope grades to drain away from structures.
3. Replace culverts damaged during the construction with new culvert pipe.
4. Except where mounding over trenches is specified, grade smooth areas of the Work including previously grassed areas that have been disturbed, and adjacent transition areas.
5. Fill and compact depressions from settlement and round tops of embankments and breaks in grade.
6. Protect newly graded areas from traffic and erosion. Repair settlement or washing away that may occur prior to surface restoration and re-establish grades to the required elevations at no additional cost to the Village.
7. Remove unsuitable and surplus excavated materials not used for backfilling from the project site.
8. Do not deposit on public or private property without written permission from property owner or authorized representative of appropriate public agency.

TEMPORARY HOT-MIX ASPHALT PAVEMENT SURFACE:

1. Provide a premixed hot-mix asphalt wearing surface for use during the period between backfilling the trench and constructing the permanent pavement surface at locations as shown on the Plans or as determined by the Engineer.
2. Remove the temporary pavement surface at the time of permanent pavement construction.

WATER MAIN REPAIR:

1. Whenever existing water mains and water service pipes are damaged during construction, stop the pipe installation work and immediately repair the damaged portion of the existing piping.
2. Contact the Engineer and Village immediately to report the location and extent of the damage.
3. Repair the water main with methods complying with the "Standards for Water and Sewer Main Construction in Illinois", and any additional requirements required by the Village.
4. Utilize only materials of repair as noted in the products section of this specification or as dictated by the Village.
5. Where water services have been stripped or pulled from the water main, replace the corporation stop as instructed by the Engineer and Village, and replace the water service pipe to a point as determined by the Village.
6. Comply with disinfection requirements as dictated by the Village.
7. Do not cover the repair until work is inspected and approved by Village.

PIPE INSULATION:

1. Place rigid pipe insulation board above the pipe cover material to the width of the trench.
2. Place rigid insulation board to the required thickness and in the locations shown on the Plans or as determined by the Engineer.

TRENCH BACKFILL, WATER MAIN, SPECIAL:

Description. Trench backfill for water main shall be placed in all trenches crossing driveways, sidewalks, parking lots, and all proposed and existing roadways, from the top of bedding and covering material to the top of the existing pavement surface. Installation of the trench backfill shall be in accordance with Special Provision for "TRENCHING, BACKFILLING AND COMPACTING FOR WATER MAIN AND SANITARY SEWER" and the detail shown on the Plans. The material for the top 12 inches shall be CA-6, 100% crushed gravel or crushed stone.

Method of Measurement. Trench backfill for water main will be measured for payment in feet along the centerline of the pipe from the point of installation to end of installation, regardless of depth of the pipe or width of the trench.

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

TRENCH BACKFILL (SANITARY SEWER):

Description. Trench backfill for sanitary sewer shall be placed in all trenches crossing driveways, sidewalks, parking lots, and all proposed and existing roadways, from the top of bedding and covering material to the top of the existing pavement surface. Installation of the trench backfill shall be in accordance with Special Provision for "TRENCHING, BACKFILLING AND COMPACTING FOR WATER MAIN AND SANITARY SEWER" and the detail shown on the Plans. The material for the top 12 inches shall be CA-6, 100% crushed gravel or crushed stone.

Method of Measurement. Trench backfill for sanitary sewer will be measured for payment in feet along the centerline of the pipe from the point of installation to end of installation, and will be based on pipe diameter and ranges of trench depth.

Basis of Payment. This work will be paid for at the contract unit price per foot for TRENCH BACKFILL (SANITARY SEWER) of the sanitary sewer pipe size and the range of depth for the trench.

EXPLORATION TRENCH, SPECIAL:):

Description. This work consists of exploratory excavation for an existing water main, water service line, sanitary sewer, sanitary sewer service line, or storm sewer at a location mark more than 2 feet beyond the actual location of the pipe, complete; including excavation, removal and disposal of waste excavated materials, and backfilling with compacted trench backfill materials.

Measurement. This work will be measured for payment in feet perpendicular to the existing pipe to be located and beyond 2 feet of the location marked by the Engineer in the field.

Basis of Payment. This work will be paid for at the contract unit price per foot for EXPLORATION TRENCH, SPECIAL.

SANITARY SEWER SYSTEM:

SUMMARY: Provide sanitary sewer system improvements as shown on the Plans, specified herein, and needed for a complete and proper installation, and in accordance with the latest revision of the "Standard Specifications for Water and Sewer Main Construction in Illinois", except as revised herein.

DELIVERY, STORAGE, AND HANDLING: Protect flexible thermoplastic pipes for direct sunlight.

PIPE AND FITTINGS:

PVC plastic sewer pipe:

1. Comply with ASTM D3034 for Type PSM polyvinyl chloride (PVC) sewer pipe and fittings of minimum wall thickness SDR 26.
2. Joints: Use either the solvent-weld type complying with ASTM D2564 and ASTM D2855, or the elastomeric gasket type complying with ASTM F477 and ASTM D3212.
3. Fittings:
   a. Sizes 8-inches or less: Molded in one piece with elastomeric joints and minimum socket depths as specified in section 6.2 and 7.3.2 of ASTM D3034.
   b. Sizes 10-inch or more: Molded or fabricated in accordance with Section 7.11 of ASTM D3034, with manufacturer's standard pipe bells and gaskets.
4. Gaskets for fittings and joints: Minimum cross-sectional area of 0.20 square inches complying with ASTM F477.

Branch fittings:

1. Use either factory fabricated type with attached main line coupling, minimum SDR-26.
2. Acceptable manufacturers:
   a. Harco.
   b. GPK Products.
   c. Multi Fittings.
   e. Plastic Trends.
   d. Or approved equal.

Risers:

1. Use SDR 26 solid wall type complying with ASTM D3034 for PVC pipe.

Couplings:

1. Provide flexible rubber couplings with non-shear type with adjustable stainless steel bands complying with ASTM C425 for connecting new pipe to existing sewer pipe and for repairing sewer pipe.
2. Acceptable products: Band-Seal Couplings by Mission Clay Products Corp., or approved equal.

MANHOLES:

1. Precast:
   A. Provide precast reinforced concrete manhole sections, bottoms, and flat top slabs complying with ASTM C478 unless otherwise indicated on Plans.
   B. Provide eccentric cone section unless otherwise indicated on the Plans.
   C. Provide precast reinforced concrete monolithic base for new and existing sewer lines.
   D. Design flat slab top for HS20-44 loading.
   E. Provide reducer flat top or cone to reduce manhole barrel to 48-inch diameter on manholes with larger than 48 diameter monolithic bases.
   F. Provide the following for manholes:
      a. External frame seal.
      b. Internal frame seal.
      c. Manhole exterior joint protection.
      d. Manhole exterior surface treatment.

2. Concrete: Provide 4,000 psi concrete using Type I Portland Cement complying with ASTM C150.

3. Mortar: Mix one part Portland Cement to three parts fine aggregate.

4. Joints for precast sections: Provide tongue and groove joints with either flexible watertight rubber gaskets or preformed bituminous plastic gaskets consisting of a homogeneous blend of refined hydrocarbon resins and plasticizing compound reinforced with inert mineral filler.
   A. Acceptable preformed gasket products:
      a. K. T. Snyder Co., RAM-NEK.
      b. Concrete Sealants, Type CS-102.
      c. Or approved equal.

5. Steps: Provide steps with a minimum width of 12 inches and a minimum projection of 5 inches. Use steps consisting of copolymer polypropylene plastic with a continuous 1/2-inch steel reinforcement as manufactured by M.A. Industries, Inc., cast iron steps, Neenah R-1980-I, or approved equal.

6. Frames and covers:

A. Provide cast iron frames and covers with heavy duty indented top with solid self-sealing lids and machined bearing surfaces, stamped with the word "SANITARY" and "VILLAGE OF CARPENTERSVILLE".
    a. Acceptable products: Neenah R-1713, East Jordan 1050 EXHD, or approved equal.
    b. See plans for Village's Cover Detail.

7. Flexible pipe connectors: Provide flexible rubber gasket collar for connecting pipe to the manhole.
    A. Comply with ASTM C-923.
    B. For pipe 24-inch and smaller, use PSX gasket system by Press-Seal Gasket Corporation, or approved equal.
    C. For pipe 27-inch and larger, use resilient gasket by A-LOK Products, Inc., or approved equal.

8. External Frame seal:
    A. Provide frame seals consisting of a flexible external rubber sleeve and extension and stainless steel compression bands.
    B. Rubber sleeve and extension:
        a. Provide rubber sleeve and extension complying with ASTM C923.
        b. Comply with a minimum 1,500 psi tensile strength, maximum 18 percent compression set and a hardness (durameter) of 48±5.
        c. Provide sleeve with a minimum thickness of 3/16-inch and unexpanded vertical heights of 6 or 9 inches.
        d. Provide extension having a minimum thickness of 3/16-inch.
    C. Compression band:
        a. Provide compression band to compress the sleeve against the manhole.
        b. Use 16 gauge stainless steel conforming to ASTM A240 Type 304 with no welded attachments and having a minimum width of 1-inch.
        c. Make a watertight seal having a minimum adjustment range of 2 diameter inches.
        d. Provide stainless steel screws, bolts, and nuts conforming to ASTM F593 and 594, Type 304.
    D. Acceptable products:
        a. Adaptor, Inc. Internal/External Seal.
        b. Or approved equal.

9. Manhole exterior joint protection:
    A. Two piece wrap-around heat shrinkable sleeve system.
        a. Minimum width: 9 inches.
        b. Acceptable manufacturer: CANUSA WRAPID SEAL.
    B. Woven polypropylene fabric with rubberized mastic coating and steel strapping.
        a. Minimum width 9 inches.
        b. Acceptable manufacturer: MacWrap.
    C. EDPM (Ethylene Propylene Diene Monomer) external rubber sleeve with 2-inch wide mastic strip on top and bottom edge of sleeve.
        a. Minimum thickness: 60 mils.
        b. Minimum width: 8 inches.
        c. Mastic: Non-hardening butyl rubber sealant; minimum thickness ¼-inch.
        d. Acceptable products: Infi-Shield External Sealing System; or approved equal.

10. Manhole exterior surface treatments:
    A. Damp proofing material: Heavy duty coal tar pitch.
    B. Acceptable manufacturers:
        a. Top-Coat, bituminous super service black.
        b. Or approved equal.

GROUT FOR FILLING OF ABANDONED SEWERS

Cellular grout:

1. Low density cellular concrete capable of being mixed on site and pumped into place through a 2-inch hose.
2. Foaming agent complying with ASTM C869.
3. Portland Cement: ASTM C150, Type I or Type II.
4. Contents: cement, fly ash, water and foaming agent.
5. Minimum net density: 70 pcf.
6. Acceptable manufacturers:
    1. Mearl Geofoam Liquid Concentrate.
    2. Or approved equal.

PIPE INSTALLATION:

1. Install sanitary sewer pipe in strict accordance with the latest revision of "Standard Specifications for Water and Sewer Main Construction in Illinois" and with this Special Provision and the Special Provision for "TRENCHING, BACKFILLING, AND COMPACTING FOR WATER MAIN AND SANITARY SEWER".

2. Install pipe in accordance with pipe manufacturer's recommendations.

3. Lay pipe by proceeding upgrade with the spigot ends of bell-and-spigot pipe pointing in direction of flow.

4. Lay each pipe accurately to the indicated line and grade, aligning so the sewer has a uniform invert.

5. Continually clear interior of the pipe free from foreign material.

6. Before making pipe joints, clean and dry all surfaces of the pipe to be joined.

7. Use lubricants, primers, and adhesives recommended for the purpose by the pipe manufacturer.

8. Comply with ASTM D2321 for flexible thermoplastic sewer pipe installation.

MANHOLE INSTALLATION

General:

A. Shape the invert channels to be smooth and semicircular, conforming to the inside of the adjacent sewer section.
B. Make changes in direction of flow with a smooth curve of as large a radius as the size of the manhole will permit.
C. Make changes in size and grade of channels smoothly and evenly.
D. Form the invert channels directly in the concrete of the manhole base, with mortar, or by laying full section sewer pipe through the manhole and breaking out the top half after surrounding concrete has hardened, or use preformed invert channels.
E. Smooth the bench outside the channels, and slope toward the channels at not less than 1-inch per foot not more than 2 inches per foot.
F. Provide external chimney seal on all manholes.
G. Provide manhole exterior joint protection on all manholes.
H. Provide manhole exterior surface treatment on all manholes.

Manhole steps:

1. Provide each manhole with individual wall-mounted steps as shown on the manhole detail.
2. Comply with the requirements of governmental agencies having jurisdiction.
3. Do not locate steps directly above where pipes enter the manhole.

I. Jointing:
   1. Use flexible watertight gaskets for each joint, including grade ring joints.
   2. Trim smooth and free from surplus gaskets.

J. Frames and covers: Unless otherwise shown on the Plans or as directed by the Engineer, set frames and covers:
   1. In paved areas: So that the top of the cover will be flush with the finished pavement; or
   2. In unpaved areas: To drain away from the manhole.
   3. With flexible watertight gaskets.
   4. With grade rings not to exceed 8 inches.

MANHOLE INTERNAL FRAME SEAL

A. Install internal rubber gasket in the manhole chimney.
   1. Provide watertight gasket to eliminate leakage between the frame and each adjusting ring down to and including cone section.
      a. Install rubber gasket in accordance with manufacturer's recommendations.
      b. Field verify for suitable dimensions and layout before installation.
      c. Provide chimney seal extensions as required.

MANHOLE EXTERNAL FRAME SEAL

A. Install external rubber gasket on the manhole frame and chimney.
   1. Provide watertight gasket to eliminate leakage between the frame and each adjusting ring down to and including cone section.

B. Clean surface and prepare the lower 2 inches of the manhole frame and exterior of all adjusting rings and cone section/corbel surfaces.
   1. Realign frame on adjusting rings or corbel as required.

C. Repair and apply mortar grout to the adjusting rings as required to provide a smooth, circular surface for the rubber gasket.

D. Install rubber gasket in accordance with manufacturer's recommendations.
   1. Field verify for suitable dimensions and layout before installation.
   2. Utilize sealing caulk where required.

E. Test installation by flooding area around the manhole with water before backfilling and surface restoration.
   1. Gaskets are required to provide watertight seal at openings between the frame and adjusting rings and between adjacent adjusting rings down to the cone/corbel section.
   2. Reinstall and retest failing gaskets at no additional cost to Village.

MANHOLE SURFACE TREATMENTS

A. Apply surface treatment materials in strict accordance with the manufacturer's recommendations on concrete surfaces to which additional concrete will not be bonded.

B. For exterior subgrade manhole surfaces, provide a minimum of two coats of damp-proofing material.
   1. Apply each coat at a minimum rate of 50 square feet per gallon.
   2. Apply only after exterior joint seals are in place.

MANHOLE EXTERIOR JOINT PROTECTION

A. Install exterior joint seals per manufacturer's recommendation.
   1. Install in the presence of the Engineer.
   2. Comply with manufacturer's recommendations regarding protection of sleeves during backfilling.
   3. Apply heat shrink type seals prior to surface treatment of manholes if surface treatment is required.

SANITARY SERVICE CONNECTIONS

A. Provide 6-inch branch fittings, riser pipes, and service lines at locations determined by the Engineer at the time of construction.

B. Comply with the specifications for other sewers in the Work and the sanitary service details as shown on the Plans.

C. Use wye branch fittings for connecting to PVC sewer pipes less than 20 feet deep.

D. Keep a record on forms available from the Engineer of branch fittings, riser pipes, and service lines by measurement to the nearest downstream manhole.

E. Deliver the records to the Engineer on completion of the Work.

SANITARY SEWER AND MANHOLE ABANDONMENT

A. Where new sewers are being installed at the same location as existing sewers, existing sewers will be removed incidental to the installation of the new sewer.
   1. Sewers and services to be abandoned not being removed as part of the new sewer installation will be plugged with concrete brick and mortar at all locations where they are exposed by trenching or excavations for structures.
   2. Fill sewers to be abandoned with grout where indicated on the Plans.
      a. Do not allow grout to enter existing sewers that are to remain in service or new sewers.
      b. Fill sewers in the presence of the Engineer.

INTERNAL CCTV SEWER INSPECTION

A. Perform internal sewer inspection by closed circuit color television (CCTV) to determine location of existing services.

B. Comply with the Village's requirements for televising of sewers for final inspection.

TESTING AND INSPECTING

A. Leakage tests will not be required for sanitary sewers constructed as part of this Project. Existing service connections, short repair sections and point repairs would limit the effectiveness of such tests.

B. The Owner or Engineer will inspect sanitary sewer pipe and service connections at the time they are installed. Contractor shall provide personnel, equipment and access to the work when requested by the Owner or Engineer.

SANITARY SEWER SERVICE (OPEN CUT):

Description. The work of this Pay Item shall be completed in accordance with the Special Provision for "SANITARY SEWER SYSTEM", and shall consist of sanitary sewer building service lines complete in place, including all requirements for "SANITARY SEWER (OPEN CUT), protecting, repair or replacement of utilities; plugs or connections to existing building service lines at the property line; excavation; bracing, bedding and covering of pipe; trench dewatering; backfilling with compacted excavated materials or compacted trench backfill materials; inspection; and finish grading.

This Pay Item includes backfilling with compacted granular trench backfill materials in accordance with the Special Provision for TRENCH BACKFILL (SANITARY SEWER), where the service pipe is within 2 feet of existing or proposed pavement, sidewalk, or driveways.

Method of Measurement. This work shall be measured for payment in feet along the centerline of the service pipe from the centerline of the main line sewer to the point of connection with the existing service pipe.

Riser pipes shall be considered for all pipe installed at an angle of more than 45 degrees to the horizontal. Riser pipes shall be measured for payment in feet along the centerline of the service pipe for all pipe installed at an angle of more than 45 degrees to the horizontal.

Basis of Payment. This work shall be paid for at the contract unit price per foot for SANITARY SEWER SERVICE (OPEN CUT), 6" PVC and for SANITARY SEWER SERVICE RISER, 6" PVC, regardless of pipe size or depth; and at the Contract Unit Price per each for SANITARY SERVICE BRANCH FITTINGS.

SANITARY SEWER SERVICE REMOVAL AND REPLACEMENT:

This work shall be completed in accordance with the applicable portions of the Special Provision for SANITARY SEWER (OPEN CUT) and the latest edition of the "Standard Specifications for Water and Sewer Main Construction in Illinois", and shall consist of removing and replacing sanitary sewer building service lines disturbed or in elevation/18" separation conflict with the proposed water main; complete in place including removal of existing service line; protecting, repair or replacement of utilities; a 20 foot length of sanitary sewer service pipe; connections to existing building service lines with flexible, watertight couplings; excavation;

bracing, bedding and covering of pipe; trench dewatering; backfilling with compacted trench backfill materials; inspection; and finish grading.

Basis of Payment. This work will be paid for at the contract unit price per each for SANITARY SEWER SERVICE REMOVAL AND REPLACEMENT regardless of the pipe diameter and depth.

ADJUSTING SANITARY SEWER SERVICE LINE:

This work shall be completed in accordance with the applicable portions of the Special Provisions for SANITARY SEWER (OPEN CUT) and the latest edition of the "Standard Specifications for Water and Sewer Main Construction in Illinois", and shall consist of removing and replacing sanitary sewer building service lines in direct elevation conflict with the proposed water main.

These sanitary sewer service lines are to be reconstructed and lowered in elevation from the right-of-way/property line, beneath the proposed water main, and reconnected to the existing sanitary sewer with new branch connections.

The work shall be complete in place including removal of existing service lines; protecting, repair or replacement of utilities; excavation; bracing; trench dewatering; new wye branch fitting and sanitary sewer pipe with flexible, watertight couplings; bedding and covering of pipe; connection to existing building service lines with flexible, watertight couplings; backfilling with compacted trench backfill materials; inspection; and finish grading.

Basis of Payment. This work will be paid for at the contract unit price per each for ADJUSTING SANITARY SEWER SERVICE LINE regardless of the pipe diameter, type, length and depth.

CONNECTION TO EXISTING SEWER:

This work shall be completed in accordance with the applicable portions of the Special Provisions for SANITARY SEWER (OPEN CUT) and the latest edition of the "Standard Specifications for Water and Sewer Main Construction in Illinois", and shall consist of connecting new sanitary sewer to existing pipes or manholes.

The work shall be complete in place including protecting, repair or replacement of utilities; excavation; bracing; trench dewatering; flexible, watertight couplings; bedding and covering of pipe; connection to either an existing sanitary pipe or an existing manhole; backfilling with compacted trench backfill materials; inspection; and finish grading.

Basis of Payment. This work will be paid for at the contract unit price per each for CONNECTION TO EXISTING SEWER regardless of the pipe size.

The cost of connection to existing sanitary sewer service pipes will not be included in this pay item. Payment for connection to existing sanitary sewer service pipes will be paid for separately.

GROUT ABANDONED SEWERS:

This work shall be completed in accordance with the applicable portions of the Special Provisions for SANITARY SEWER SYSTEM and shall consist of installing low density cellular concrete into sewer pipes that are to be abandoned.

The work shall include concrete and brick plugs at each end of the pipe being abandoned, pumping of the cellular grout into the pipe until it is completely full of grout, mortar and grout finishing of manhole wall sewer opening and manhole invert, and cleanup of spilled mortar or cellular grout.

Method of Measurement: This work will be measured for payment in feet, along the ground surface, directly over the sewer pipe being abandoned, from inside wall of manhole to inside wall of manhole at termination points of the sewer.

Basis of Payment: This work will be paid for at the contract unit price per foot for sewer pipe being abandoned as GROUT ABANDONED SEWERS.

SANITARY SEWER (OPEN CUT):

Description. The work of this Pay Item shall be completed in accordance with the Special Provisions for "SANITARY SEWER SYSTEM", "TRENCHING, BACKFILLING AND COMPACTING FOR WATER MAIN AND SANITARY SEWER", these Special Provisions and the detail on the Plans and shall consist of the installation of sanitary sewer pipe complete in place, including saw cutting, and removal and disposal of existing pavements; excavation; removal and disposal of waste excavated materials; removal and disposal of existing sewer and sewer manholes when sewer is replacing another sewer in-situ; location, protection, repair or replacement of utilities; trench dewatering; erosion and sedimentation control methods and devices to provide protection to environment from all pumping operations; temporary pumping of sewage around work area if necessary to complete work; bracing; bedding and covering of pipe; and trench backfilling with compacted excavated materials.

Trench backfill shall be used where the sanitary sewer trench is within 2-feet of existing or proposed sidewalks, driveways, or pavements, and shall be paid for separately in accordance with the Special Provision TRENCH BACKFILL (SANITARY SEWER).

Method of Measurement. This work will be measured for payment in feet along the centerline of the sewer between the centerline of manholes to the centerline of manholes.

Basis of Payment. This work will be paid for at the contract unit price per foot for SANITARY SEWER (OPEN CUT) of the size and depth range indicated.

Trench backfill with granular materials will be paid for according to the Special Provision TRENCH BACKFILL (SANITARY SEWER).

SANITARY SEWER MANHOLES:

Description. The work of this Pay Item shall be completed in accordance with the Special Provisions for "SANITARY SEWER SYSTEM", "TRENCHING, BACKFILLING AND COMPACTING FOR WATER MAIN AND SANITARY SEWER", these Special Provisions and the detail on the Plans and shall consist of the installation of sanitary sewer manholes complete in place, including excavation in excess of that required for sanitary sewer; trenching; bracing, sheeting and shoring; dewatering, including erosion and sedimentation control methods and devices to provide protection to the environment from all pumping operation; backfilling with and compaction of excavated material or trench backfill materials; sanitary sewer manhole, including base, risers, cone, adjusting rings, steps, chimney seals, and frames and covers; watertight flexible connectors to match pipe; poured inverts and benches; final adjustment of frame to final grade at time of surface restoration; finish grading; removal and disposal of waste excavated material; location, protection, and repair or replacement of existing structures, pipelines and utilities; and all other work necessary for a complete sanitary sewer manhole installation.

Basis of Payment. This work will be paid for at the contract unit price per each for SANITARY MANHOLES of the type of construction indicated.

The reconstruction of SAN MH 14C-49 will be paid for at the contract unit price per each for SANITARY MANHOLES TO BE RECONSTRUCTED.

The replacement of SAN MH 14C-3 will be paid for at the contract unit price per each for MANHOLES, TYPE A, SANITARY, 4' - DIAMETER, TYPE 1 FRAME, CLOSED LID.

Trench backfill shall be used where the sanitary sewer manhole is within 2-feet of existing or proposed sidewalks, driveways, or pavements, and shall be included in this item.

SANITARY SEWER POINT REPAIR:

Description. The work of this Pay Item shall consist of the removal and replacement of short sections of sanitary sewers including providing and installing pipe, fittings and couplings; service reconnection; all material and equipment; sawcutting; excavation; sheeting, shoring, and dewatering; by-pass pumping; removal and disposal of excavated material; bedding and covering of pipe; making connections between different pipe materials; backfilling with compacted excavated material, and any other labor and/or materials required to complete the work as specified herein.

If required, bypass pumping may be accomplished by supplying sufficient pumping equipment to bypass the sewage flow around the construction area to the downstream sanitary sewer. Before leaving the construction site each day, the Contractor shall connect the new sewer to the existing sewer by gravity.

The sanitary sewers shall be repaired with 8" diameter, and service lines shall be repaired with 6" diameter, Polyvinyl Chloride (PVC) pipe having a Standard Dimension Ratio (SDR) of 26 or a Standard Dimension Ratio of 21. Fittings shall meet the requirements of ASTM D-3212 and ASTM F477. The pipe shall meet the requirements of ASTM D-2241 and ASTM D-3034. The above pipe and fittings shall be furnished with elastomeric gasket joints conforming to ASTM D-3139. Connections to existing sewer mains and services shall be made with No-Shear Flex Couplings with two stainless steel bands at a point where the coupling cannot shift.

If needed, any sanitary service pipe reconnection to sanitary sewer due to sanitary sewer point repairs will be included and paid for as part of Sanitary Sewer Point Repair work as specified herein and work shall consist of reconnecting the existing sanitary service pipe to the new sanitary sewer completed as part of Sanitary Sewer Point Repair.

The new sanitary service reconnection shall be a maximum of 5 feet from the center of the new sanitary sewer. Additional distance over 5 feet due to Contractor's negligence shall be installed at the Contractor's expense. The contractor with the Engineer shall verify that the service is active.

Method of Measurement. This work will be measured for payment in feet along the centerline of the sewer, from one end of the point repair to the other end of the point repair.

Basis of Payment. This work will be paid for at the contract unit price per foot for SANITARY SEWER (OPEN CUT), 8" PVC, of the range of depth; SANITARY SEWER SERVICE (OPEN CUT), 6" PVC; or SANITARY SEWER SERVICE RISER, 6" PVC.

Branch fittings will be paid for at the contract unit price per each for SANITARY SERVICE BRANCH FITTINGS.
Compacted granular trench backfill materials will be paid for at contract unit price per foot for TRENCH BACKFILL (SANITARY SEWER), 8 INCH of the range of depth indicated.

CURED IN PLACE PIPE LINER:

Description: This work consists of the installing preparatory cleaning, internal (televised) sewer inspection, and providing and installing cured in place pipe liners in accordance with applicable articles of Section 543 and 563 of the Standard Specifications.

General:

Summary:

A. Lining Installer Qualifications:
    a. The Installer shall have installed a minimum of 500,000 feet of cured-in-place-pipe.
B. Work included, materials and installation required or as described after this paragraph:
    a. Mobilization and site preparation.
    b. Televising of sewer to determine installed conditions.
    c. Root treatment
    d. Removal of protruding taps
    e. Cleaning of existing sewers to condition necessary for proper installation of product.
    f. Determining if existing service connections are active or inactive.
    g. Placement of lining material within sewer.
    h. Flow control, including bypass pumping, as required.
    i. Reinstatement and reconnection of active service connections.
    j. Sewer testing and internal inspections of installation.
    k. Cleanup.
    l. Other appurtenant and incidental work.

Related Sections and References:

A. American Society for Testing and Materials (ASTM):
    a. ASTM D543 Test Method for Resistance of Plastics to Chemical Reagents
    b. ASTM D638 Test Method for Tensile Properties of Plastics
    c. ASTM D790 Test Method for Tensile Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials

d. ASTM F1216 Rehabilitation of Existing Pipelines and Conduits by Inversion and Curing of a Resin-Impregnated Tube

Submittals

A. Product Data:
   a. Manufacturer's product literature, application and installation requirements for materials used in liner.
   b. Manufacturer's product certification for materials used in liner.
   c. Liner Pipe Thickness Design.
      i. Liner Pipe Thickness Design shall be in accordance with Appendix XI of ASTM F1216. The existing pipe shall not be considered as providing any structural support to the liner pipe; In the liner thickness calculations, the minimum ovality of the host pipe shall be 2 percent, the height of ground water shall be 50% of the pipe depth, the enhancement factor (K) shall not be greater than 7.0, the minimum safety factor shall be 2.0, and the flexural modulus of elasticity shall be reduced 50% to account for long term effects and used in the design equation E_L.
      ii. No liner shall be installed until it has been approved for installation.
      iii. No liner will be approved for installation until liner thickness calculations have been submitted and reviewed for conformance with the specifications and installation requirements.

B. Installer:
   a. List completed projects, including location and contact information (minimum 500,000 feet).
   b. Proposed plan for bypassing sewage during liner installation.

C. Post Lining Submittals:
   a. Testing results according to these Special Provisions.
   b. CCTV digital vidoe discs (DVDs) and reports (pre- & post- lining) according to these Special Provisions.

Quality Assurance:

A. Corrosion:
   a. Fabricate finished liner from materials which, when cured, will be chemically resistant to withstand internal exposure to domestic sewage.

B. Manhole Connections
   a. All manhole connections shall be watertight.

C. Testing:
   a. Test finished pipe liner in accordance with these Special Provisions.

Products:

Cured in Place Liner:

A. Resin:
   a. Polyester resin for general chemical applications:
      i. Up to 5% by mass thixotropic agent which will not interfere with visual inspection may be added for viscosity control.
      ii. Resins may contain pigments, dyes or colorants which will not interfere with visual inspection of cured liner.

B. Reinforcing Material:
   a. Non-Woven, needle interlocked polyester felt formed into sheets of required thickness.
      i. Felt tubes may be made of single or multiple layer construction, with any layer not less than 1.5 mm thick.
      ii. Mechanical strengthener membrane or strips may be sandwiched in between layers where required to control longitudinal stretching.
      iii. Liners shall have a bonded internal polyurethane membrane, which must be left on the internal surface of liner after curing.
      iv. Minimum thickness of bonded polyurethane membrane and inner liner, if used shall be 0.3 mm, +5%, and shall not affect structural dimension requirements of cured liner.

C. Felt Content:
   a. Content shall ensure cured thickness of liner as specified.
   b. Thickness of cured liner to be as specified (+10%-4%) and shall not include thickness of polyurethane inner liner.

D. Resin Content:
   a. 10 to 15% by volume greater than volume of felt in liner bag.

E. Cured liner shall conform to minimal structure standards listed:

Standard		Value
Tensile Strength	ASTM D638	3,000 psi
Flexural Modulus of Elasticity	ASTM D790	250,000 psi
Flexural Strength	ASTM D790	4,500 psi

F. Fabricate liner to size that when installed will fit internal circumference of pipe. Allowance shall be made for circumferential stretching during insertion.

G. Meet requirements of ASTM F-1216.

Sanitary Sewer Lining Work:

PART 1 – PREPARATORY CLEANING AND INTERNAL SEWER INSPECTION

1.1 SUMMARY

A. Provide and examine televised and video-recorded condition of pipe interiors before starting work.

B. Provide preparatory cleaning of the entire sewer section before conducting the internal sewer inspection, as specified herein.

C. Provide internal sewer inspection of the entire sewer section (manhole to manhole) by the use of a closed circuit television, as specified herein.

D. Documentation of all Internal Sewer Inspection will be on Flexidata Software from Pearpoint, Computer printed reports, SVHS videotape, burned on CD-Rom and backed up on Zip Disks.

1.2 SUBMITTALS

A. PROPOSAL

1. Submit any deviations from the detailed specifications along with a sample videotape and report with proposal.

B. Preparatory cleaning equipment

1. Prior to performing the work submit the type of equipment to be used.

2. Submit selection of nozzles and cutters to be used with high velocity jet equipment.

C. Video Tapes, CD's and Written Logs:

1. At intervals of no more than five (5) working days, submit to the Owner the original videos and written logs.

1.3 QUALITY ASSURANCE

A. Utilize cleaning, televising and recording equipment meeting the requirements of PART 2 of this section.

B. Provide preparatory cleaning and prepare videotapes and written logs in accordance with PART 3 of this section.

PART 2 – EQUIPMENT

2.1 PREPARATORY CLEANING EQUIPMENT

A. General:

1. Provide equipment constructed for ease and safety of operation and capable of cleaning to the degree specified in PART 3 of this section.

2. Provide equipment satisfactory to the Owner's Representative.

B. High-Velocity (Hydro-cleaning) Equipment:

1. Provide equipment with a selection of 2 or more nozzles capable of producing a scouring action from 15 to 45 degrees in all size lines designated to be cleaned.

2. Root Cutters to be used in removal of roots and or grease.

3. Combination vacuum trucks to be used to remove debris from sewers.

2.2 INTERNAL SEWER INSPECTION EQUIPMENT

A. General:

1. Provide a closed circuit television (CCTV) and audio-video recording system for internal inspection of mainline sewer capable of producing picture quality to the satisfaction of the Owner's representative.

2. Provide blowers or other means of dissipating steam or fog.

B. Television Camera:

1. Provide a television camera designed and constructed for sewer inspection with the following capabilities:

   a. High-resolution color-chip camera and monitor
   b. Adequate and adjustable lighting to allow a clear picture of the entire periphery of the pipe
   c. Provide auxiliary lighting for sewers larger than 12-inch diameter.
   d. Operable in 100% humidity conditions
   e. Pan-and-Tilt.
   f. Remote or manually propelled
   g. Electronic footage counters accurate to less than 1% error over the length of the particular sewer being inspected.

C. Audio-Video Recording System

1. General:

   a. Provide a total audio-video recording system and procedures as required to produce a high quality video and audio production of bright, sharp, clear pictures with accurate colors, free from distortion, tearing, rolls, or other forms of picture imperfection. The audio portion shall have proper volume and clarity and shall be free from distortion.

2. Video Record Equipment:

   a. Provide and record on a SVHS video recorder in the televising truck during inspection with voice overlay.

   b. Provide video capture and video clips.

   c. SVHS videotapes to be burned on CD-ROM

PART 3 – EXECUTION

3.1 PREPARATORY CLEANING

A. Provide preparatory cleaning of the sewer section to remove foreign materials from the sewer and restore the sewer to a minimum 95% of the original capacity. The television camera must have an unobstructed passage to discern structural defects, misalignment, service lateral connections, and points of infiltration to the satisfaction of the village.

B. Perform a light cleaning with high-velocity jet or power rodding equipment consisting of 3 passes or flushes of the entire sewer section, if necessary, to allow televising.

1. Limit pullback speed to no more than one foot per second at maximum pressure.

C. Remove roots that will obstruct the internal sewer inspection equipment.

1. Remove roots from joints completely before installation cured in place pipe.

D. Heavy cleaning shall be deemed necessary, when in the opinion of the Village, continued use of high velocity hydro-cleaning cannot be satisfactory utilized due to obstructions present in the sewer, i.e.; heavy root penetrations, mineral deposits, built up debris in the line, etc. The Village reserves the right to perform any heavy cleaning at its discretion.

1. All sludge, dirt, sand, rocks, grease, roots, corroded or broken pipe pieces, and other solid or semisolid material resulting from the cleaning operation shall be removed at the downstream structure of the section being cleaned. Passing material from structure section to structure section, which could cause line stoppages, accumulations of sand, or damage to pumping equipment, shall not be permitted.

2. All solids or semisolids resulting from the cleaning operations shall be removed from the site and disposed. All materials shall be removed from the site at the end of each workday. Under no circumstances will the Contractor be allowed to accumulate debris, etc., on the site of work. The Village will provide an accessible staging area within the city limits for the temporary placement of a debris box. Nevertheless, the debris shall be removed at the end of each working day.

3. It is the sole responsibility of the Contractor to properly dispose of sewer debris on a daily basis. This work shall be done at the Contractor's own cost and considered incidental to the contract. All requirements of the Illinois Environmental Protection Agency and all other regulating agencies shall be followed. The Contractor shall be required to provide all necessary documentation for the proper, and lawful, disposal of debris. The municipally shall not be responsible for the disposal of the debris.

E. The Owner will provide water at no cost to the Contractor for use by the Contractor for preparatory cleaning. The Contractor will fill his tank truck at the location designated by the Owner and at times agreed to by the Owner.

F. Contractor will meter the amount of water taken from the Owner's system and provide a written water use log to the Owner at the end of the project.

3.2 INTERNAL SEWER INSPECTION

A. Begin each tape with current date, project name, and owner: followed by the general locations, manhole segment and direction of viewing and beginning footage count superimposed on the video signal. Provide continuous footage counter and manhole segment on all video recordings.

B. Professionally label all videotapes showing the Owner's name, the sewer lines recorded on the tape, Quadrant section number (from Owners Utility Atlas), the date and Contractor's name.

C. Set video recorder to standard play (SP) mode.

D. Move the camera at a speed no greater than 30 feet per minute. Stop at all defects and points of infiltration and pan as necessary to permit proper documentation of the sewer's condition.

E. Inspect the entire length of the sewer section.

F. Stop at all service connections, and pan and look up.

G. Pan and look up all manholes.

H. Stop televising if camera becomes submerged. Use high pressure jetting or other means to lower the water level to below the camera.

1. Provide temporary plugs if necessary or directed by the Owner's representative.

2. Perform by-pass pumping if necessary or directed by the Owner's Representative.

I. Documentation:

1. Inspection Logs – Computer generated reports to be in PACP codes

a. Provide inspection logs with the following information:
Owner's Name
Inspector's Name
Crew Chief's Name
Date
Street/Address
From Quadrant and MH No. to Quadrant and MH No.
Direction of flow
Type of Pipe
Joint Spacing
Manhole Material (Block/Brick/Concrete)
Section Length
Pipe Size
Depth of Upstream and Downstream Manholes
Direction of Inspection (camera movement)
Surface Conditions

b. Document the footage and clock orientation of all pipe defects, change in pipe material, infiltration, building service connections and any other abnormal conditions.
c. Use terminology generally accepted by the industry.
d. Computer generated reports using PACP codes.
e. Complete inspection log in the field.

2. Provide an audio track recorded by the inspection technician during the actual inspection describing all information documented in the Inspection Log.

PART 4 – DOCUMENTATION OF INTERNAL SEWER INSPECTION

4.1

A. Television Inspection Logs: All inspections are to be generated on Flexidata Software, using PACP codes for all observations. Technicians should have a minimum of three years' experience and be familiar with NASSCO Specifications Guidelines, tenth edition. Computerized records shall be kept by the Contractor, which will clearly show the location in relation to the upstream manhole of each infiltration point, structural problems, and root problems observed during inspection. Hand written logs will not be accepted. The condition of each manhole will also be recorded as specified.

The start of each manhole segment shall be indexed using the VHS Index Search System. Each log shall be identified by upstream an downstream manhole numbers (preceded by the Quadrant number), with the upstream manhole listed first, and shall contain the videotape number and index number of the manhole segment video recording. Copies of the logs, for each television tape, shall be filed in a 1 / 2 inch capacity 3-ring loose-leaf binder, Zip disk backup in Flexidata Software by Pearpoint. The loose-leaf binder shall be labeled with the tape number, CD number, quarter section number, sections televised, location, and counter positions.

A separate master index shall be provided in a ½" capacity 3-ring loose-leaf binder identifying the road, quadrant number and start manhole, quadrant number and finish manhole, length televised, tape number, and CD number.

B. Photographs: Software on TV trucks will be equipped with Video Capture and have the capability of Video Clips to identify for the Village any immediate problems that are identified by the Contractor for each major structural, infiltration/inflow or root problem.

C. Videotape Recordings: The purpose of tape recording shall be to supply a visual and audio record of problem areas of the lines that may be replayed. Videotape recording and playback shall be in the SP mode. Slow motion or stop motion playback features may be supplied at the option of the Contractor. Television tapes shall be T-120 VHS format cassette tapes. Videotape cassettes shall be provided to the Village at the end of each week. Each tape shall include a typewritten or printed index (handwritten index will not be accepted) of the

sections televised on a 6" X 4" card. Index shall identify tape number, section I.D. (Upstream manhole – downstream manhole), start and stop counter positions for each section and the physical location of each section. After the completion of each VHS tape it will then be burned on CD-ROM drive for Village computer data collection system.

D. Television tapes: They shall be sequentially numbered and an index shall be provided to the Village at the completion of the work listing each tape number, Quadrant number, the manhole segments contained on each tape, and the indexed location of each segment on a cassette.

E. Videotape Quality: Videotape recordings provided during the course of the work shall equal or exceed the quality of the sample videotape submitted with the bid. If the videotape of any sewer segment is of lesser quality, the segment shall be re-inspected and a new video recording provided at no additional cost.

4.2 The condition of each manhole entered for the television inspection shall be recorded on forms supplied by the Village. This inspection is intended to be a cursory inspection to record observations made when accessing a manhole for cleaning or TV inspection. The manhole inspection does not require entry to into the manhole. The results of the manhole inspection shall be recorded on the manhole inspection form included as Attachment "A" to these Special Provisions.

4.3 All measurements shall be as specified or made by conventional means with accuracy's consistent with field conditions and common practice. Should a discrepancy in measurement exist which is greater than 10%, the item in question shall be re-measured by both the Contractor and the Village's representative for verification.

Preparation of Pipe:

A. Prior to liner installation sufficiently remove protruding taps, mineral deposits & roots to within ½" of sewer pipe wall. All other debris shall also be removed from the sewer line.
   a. This pay item shall include sewer cleaning and root cutting, and no separate payment will be made for sewer cleaning or root cutting.
      i. Based on previous sewer televising work, it is anticipated the only two sections of sanitary sewer that will require any substantial root cutting are the two sections of sewer located between Oak Ridge Road and L.W. Besinger Drive (approximately 720 feet of 8-inch sewer).

ii. The sewers to be lined had been cleaned for previous sewer televising and no heavy cleaning is anticipated.

b. This pay item shall include removal of protruding taps, and no separate payment will be made for the removal of protruding taps.
   i. Based on previous sewer televising work, it is anticipated eight (8) sections of sanitary sewer will require one or more protruding taps to be removed, with approximately twenty (20) taps to be removed.

c. Point repairs to the sanitary sewers shall be completed prior to any cured in place pipe work.
   i. The sanitary sewer point repairs are shown on the Plans and will be paid for according to the Special Provision SANITARY SEWER POINT REPAIR.

B. If offset joints or collapsed pipe sections are present that will prevent insertion of the liner - Notify the Engineer immediately. Repairs for these conditions are not part of the scope of this project and will be completed only after the Engineer issues written authorization.

C. Sewage Bypassing:
   a. Provide for flow of sewage around sections of pipe to be lined.
      i. Pump or bypass lines shall be of adequate size and capacity to handle flow.
      ii. Coordinate bypassing operations with owner.

Installation:

A. Preparation of Liner:
   a. Resin Impregnation:
      i. Designate location where uncured resin in original containers and unimpregnated liner will be vacuum impregnated prior to installation. Installer shall allow Engineer to inspect materials and the "wet out" procedure.
      ii. Resin and catalyst system compatible with requirements of this method shall be used. Quantities of liquid thermosetting materials shall be in accordance with manufacturer's standards to provide the required lining thickness.
      iii. Transport resin impregnated liner to site immediately prior to inversion in suitable light-proof container with temperature maintained below 40 degrees Fahrenheit.
   b. Insertion of Liner:
      i. Insert liner through an existing manhole by means of an inversion process. Lubricant may be used.
   c. Curing Liner:
      i. After inversion is complete, apply heat source and recirculation equipment. Equipment shall be capable of uniformly raising the

temperature of the liner above the temperature required to effect cure of resin.

ii. Provide suitable monitors to measure temperature of incoming and outgoing heating source. Place second gauge between impregnated liner and pipe invert at remote manhole to determine temperatures during cure. Temperature within the liner and sanitary sewer during cure period shall be as recommended by resin manufacturer.

iii. Initial cure shall be complete when inspection of exposed portions of liner to be hard and sound and remote temperature sensor indicates that temperature is of magnitude to realize an exotherm.

iv. Cool hardened liner to a temperature below 100 degrees F before relieving pressure in the liner.

Connections:

A. Service Connections:
   a. Locations:
      i. Determine service connection locations from television inspection video.
   b. Reinstatements:
      i. Reinstate and reconnect service connections unless service connection is deemed to be inactive.
      ii. Reconnect services without excavation by television camera and cutting device that re-establishes services for minimum of 95% of the flow capacity.
      iii. Sanitary services shall not be out of service for more than 12 hours during lining process.
      iv. ALL SERVICE PIPE EDGES SHALL BE SMOOTHED WITH A WIRE BRUSH ATTACHMENT AFTER INTERNAL REINSTATEMENT.

B. Manholes Connections:
   a. Reconstruct benches and channels in manholes with grout to match new invert elevations.
   b. At the connection to the manhole, provide a watertight seal between the host pipe and liner pipe

Field Quality Control:

A. Finished liner:
   a. Liner shall be continuous over entire length of insertion run and be as free as commercially practicable from visual defects such as foreign inclusions, dry spots, pinholes and delaminations.
   b. During curing process, gauge water tightness under positive head.

c. Liner shall conform to shape of pipe existing before installation and not be out of round by more than 5%.

B. Liner Thickness:
   a. Cured liner shall be accurately measured and shall not be more than 5% less than thickness specified.

C. Felt and Resin Content of Liner:
   a. Visually inspect liner to ensure number of layers of felt conforms to specified number of layers and thickness.
   b. Calculate resin to felt ratio by weight.
      i. Ratio shall fall in range 1 .0: 1 to 1.15: 1.

D. Testing:
   a. Flexural Strength and Modulus of Elasticity:
      i. Testing shall be completed by a third party in accordance with ASTM D790.
      ii. Specimens tested shall be actual thickness of fabricated liner.
      iii. Do not machine specimen on surface.
      iv. Make test with smooth (inner) face in compression using 5 specimens.

E. CCTV Examination:
   a. Televise interior of pipe after completion of Work and provide written report and video on DVDs to Owner.
   b. Use pan and tilt color 3 lux camera to view the sewer service lateral connections.

F. Documentation of Internal Sewer Inspection
   a. Television Inspection Logs: All inspections are to be generated on Flexidata Software by Pearpoint using PACP codes for all observations. Technicians should have a minimum of three years' experience and be familiar with NASSCO Specifications Guidelines, 10th edition. The Contractor shall keep computerized records. Handwritten logs will not be accepted.

      The start of each manhole segment shall be indexed using the DVD Index Search System. Each log shall be identified by upstream and downstream manhole numbers (preceded by the Quadrant number), with the upstream manhole listed first, and shall contain the videotape number and index number of the manhole segment video recording. Copies of the logs, for each television tape, shall be filed in a 3-ring loose-leaf binder, Zip disk backup in Flexidata Software by Pearpoint. The loose leaf binder shall be labeled with tape number, DVD number, quarter section number, sections televised, location, and counter positions.

      A separate master index shall be provided in a 3-ring loose-leaf binder identifying the road, quadrant number and start manhole, quadrant number and finish

manhole, length televised, tape number, and DVD number.

Cleaning and Restoration:

A. At completion of work, remove rubbish, debris, dirt, equipment and excess material from site. Clean and restore adjacent surfaces soiled by and during course of work.

Sanitary Service Abandonment:

A. Any sanitary services selected for abandonment shall be completed as part of cured-in-place liners.

Method of Measurement: This work will be measured for payment in feet along the centerline of the sewer, from one manhole to the next manhole.

a. The distance through manholes will not be included in the measurement.

Basis of Payment: This work will be paid for at the contract unit price per foot for CURED IN PLACE PIPE LINER, of the diameter specified. This work shall include all materials, labor and equipment, preparatory cleaning, internal sewer television inspection and recordings, and all other work necessary to complete the work in accordance with this specification.

SANITARY SEWER TELEVISION INSPECTION, VIDEOTAPING AND RECORDING:

Description: This work shall be done in accordance with the Special Provisions for "SANITARY SEWER SYSTEM" and shall consist of closed-circuit televising of all sanitary sewers along and paralleling Maple Avenue. The work shall include digital recording of the work on DVDs and delivery of one copy of all DVDs to both the Village of Carpentersville and the Engineer.

Equipment: Provide a closed circuit television (CCTV) and audio-video recording system for internal inspection of mainline sewer capable of producing picture quality to the satisfaction of the Engineer. The equipment, and procedures, for this work shall include a Lateral Launch System, or approved equal, to locate and mark sanitary sewer services horizontally (Lateral Launch and sonde) on the ground surface prior to construction. Only those services to be crossed with the proposed water main need to be located on the ground surface above each service pipe.

Prior to construction of the water mains, the Contractor shall use the horizontal sanitary sewer service locations to vertically locate (pothole) each service line for H.D.D. water main installation work .

A. Television camera:

1. Use a digital color television camera designed and constructed for sewer inspection with the following capabilities:
   a. High resolution color-chip camera and monitor capable of producing a minimum of 650 lines of resolution.
   b. Adequate and adjustable directional lighting to allow a clear picture of the entire periphery of the pipe.
   c. Provide auxiliary lighting for sewers larger than 12-inch diameter.
   d. Operable in 100 percent humidity conditions.
   e. Use a camera that has a 360 degree radial by 270 degree pan-and-tilt viewing field.
   f. Remote or manually propelled.
   g. Electric footage counters accurate to less than 1 percent error over the length of the particular sewer being inspected.

B. Audio-Video recording system:
   1. General:
      a. Provide a total audio-video recording system and procedures as required to produce a high quality digital video and audio production of bright, sharp, clear pictures with accurate colors, free from distortion. The audio portion shall have proper volume and clarity and shall be free from distortion.
   2. Video Record Equipment:
      a. Record inspection electronically and create DVDs directly from digital content without an intermediate analog conversion.
      b. Provide the documentation of the inspection in digital format (.mpg, .avi, or other approved format) and submitted on one USB flash drive or (2.0/3.0) powered portable hard drive and DVDs.

   3. Procedures:

      a. Professionally label all DVDs showing the Owner's name, the sewer lines recorded on the tape, the date and Contractor's name.

      b. Inspect the entire length of the sewer section.

      c. Stop at all service connections, and at each service connection, use the sonde to locate and mark each sanitary sewer service horizontally (Lateral Launch and sonde) on the ground surface prior to construction. Prior to construction of the water mains, the Contractor shall use the

horizontal sanitary sewer service locations to vertically locate (pothole) each service line for H.D.D. water main installation work.

4. Documentation:
   a. Inspection Logs: Provide inspection logs with the following information:
      (1) Owner's Name.
      (2) Inspector's Name.
      (3) Crew Chief's Name.
      (4) Date.
      (5) From MH No.____ located at _____.
      (6) To MH No.____ located at _____.
      (7) Direction of Flow and direction of Inspection (camera movement).
      (8) Type of Pipe.
      (9) Section Length.
      (10) Pipe Size.
      (11) Depth of Pipe.
      (12) Document the footage and clock orientation of all pipe defects, change in pipe material, building service connections and any other abnormal conditions.
      (13) Use terminology generally accepted by the industry.
      (14) Provide legible entries on inspection logs.
      (15) Horizontal location – as marked on the ground surface using the sonde and transmitter/receiver equipment. Each sanitary sewer service record shall include photographs, GPS coordinates, paint marks/lath/permanent stakes to allow the Contractor to locate each and every sanitary sewer service intended to be crossed with the water main at a later date.
      (16) Complete inspection log in the field.
   b. Provide an audio track recorded by the inspection technician during the actual inspection describing all information documented in the Inspection Log.

5. Final Acceptance

   a. Retelevise sewers found to be deficient during initial television inspection for as many times as required to obtain final acceptance.

   b. Retelevise any sewer section where final inspection DVDs are of insufficient quality as determined by Engineer or Owner.

Basis of Payment: This work will be paid for at the contract unit price per foot for SANITARY SEWER TELEVISION INSPECTION, VIDEOTAPING AND RECORDING.

WATER DISTRIBUTION SYSTEM:

SUMMARY: Provide the water distribution system as shown on the Plans, specified herein, and needed for a complete and proper installation, and in accordance with the latest edition of the "Standard Specifications for Water and Sewer Main Construction in Illinois", except as revised herein.

Provide labor, materials, tools, chemicals and equipment necessary to perform the pressure and leakage tests and disinfection.

SUBMITTALS: Furnish two (2) copies of bacteriological test reports.

PIPE AND FITTINGS: Provide ductile iron pipe materials in size 4-inch through 24-inch unless otherwise indicated on the Plans.

Pipe:

Provide restrained joint ductile iron pipe complying with ANSI A21.51, special thickness Class 52, with joints complying with ANSI A21.11. Use cement lining complying with ANSI A21.4/AWWA C104 standard thickness.

Provide restrained joint pipe system that uses one of the following methods:

a. Mechanical joint retainer gland systems that provide locking segments shaped to pipe barrel that do not create stress points on pipe barrel.
   (1) Do not use setscrew type retainer glands.
b. Acceptable products:
   (1) Meg-A-Lug System.
      i. Series 1100 Megalug for MJ to pipe.
      ii. Series 1700 Megalug Harness for push on joint.
      iii. As recommended by manufacturer for connection to existing pipes.
   (2) No substitutions.

Fittings:

1. Use compact ductile iron fittings with restrained mechanical joints complying with ANSI A21.53 / AWWA C153.

2. Use cement lining complying with ANSI A-21.4, standard thickness.
3. Bolts and nuts:
   a. Use A-304 stainless steel bolts with nuts and washers of series 300 stainless steel per ASTM A194.
4. Provide restrained joint type fittings compatible with pipe system utilized, as specified by the pipe manufacturer.
   a. Provide restrained type joints for all fittings.

Polyethylene sheet: Comply with ANSI/AWWA C105/A 21.5-99:

1. Thickness: Linear Low-density polyethylene film (minimum 8 mils) or High-density cross laminated polyethylene film (minimum 4 mils).
2. Markings: The following information shall be clearly marked on the sheet at minimum increments of 2-feet along its length:
   a. Manufacturers name or trademark.
   b. Year of Manufacture.
   c. Min. film thickness and material type (LLDPE or HDCLPE).
   d. Applicable range of nominal pipe diameter size(s).
   e. Warning – Corrosion Protection – Repair Any Damage.

Conductivity appurtenances:

1. Provide wedges of serrated silicon bronze or #10-copper cable and tapping devices specifically designed for this purpose.
2. Use devices provided by the pipe manufacturer.
3. Standard mechanical joints, Field-Lok, or Megalug do <u>not</u> provide conductivity.

Locator Wire:

1. Provide TRACE-SAFE Water Blocking Tracer Wire with TRACE-SAFE Connectors as manufactured by NEPTCO, Pawtucket, RI www.trace-safe.com.

<u>VALVES</u>: Provide valves with clockwise closing direction.

Gate valves:

1. Valves 4-inch to 16-inch size:
   a. Design in accordance with AWWA C515 (ductile iron body) bronze fitted, resilient wedge and seat type with non-rising stem and O-ring packing.
2. Provide ANSI Class 125 flange ends with one restrained flange adapter, or mechanical joint ends for valves installed in vaults as indicated on the Plans.
   a. Provide restrained type joints for all mechanical joint end valves.
3. Acceptable valve manufacturers:

a. Clow Model 2638, or
b. American Flow Control (Waterous) Series 2500.
c. No other substitutions.

Temporary Valves / Insertion valves: Use insertion valves using pipe interior as seating surface.

1. Valves 4-inch through 12-inch:
   a. Designed with a ductile iron or stainless steel body and using a resilient wedge to seat against the water main pipe interior surface.
   b. Rated for 100 psi working pressure.
   c. 2-inch square operating nut, counter-clockwise opening, and non-rising stem.
2. Installation will require cutting and removing a portion of the water main pipe wall.
   a. Pipe cutting and removal of pipe material shall be completed with water main operating under continuous pressure.
3. Acceptable valve manufacturers:
   a. Advanced Valve Technologies EZ2 Valve,
   b. Or approved equal.
4. Insertion valve installer shall be trained by, or accepted by, the insertion valve manufacturer as a qualified installer; or installer shall have written proof and references of at least 3 years of experience and/or a minimum of 30 successful installations of the insertion valve type to be installed for this Project.

Line Stops: Use line stops using pipe interior as seating surface.

1. Acceptable line stop manufacturers:
2. Hydra-Stop Insta-Valve Plus,
3. Advanced Valve Technologies EZ2 Valve,
4. Or approved equal.

VALVE VAULTS:

Precast concrete:

1. Provide precast reinforced concrete manhole sections, bottoms, and flat top slabs complying with ASTM C478 for vaults installed around butterfly valves unless otherwise indicated on the Plans.
2. Provide eccentric cone section for vaults installed around gate valves unless otherwise indicated on the Plans.
3. Provide precast reinforced concrete monolithic or separate base.
4. Design flat slab tops for AASHTO HS20-44 wheel loading.

Concrete: Provide 4,000 psi concrete using Type I Portland Cement complying with ASTM C150.

Mortar: Provide Non-shrink grout type.

Joints for precast sections:

1. Provide joints of either flexible watertight rubber gaskets or preformed bituminous plastic gaskets consisting of a homogeneous blend of refined hydrocarbon resins and plasticizing compound reinforced with inert mineral filler.
   a. Acceptable preformed gasket products:
      (1) K.T. Snyder Co., RAM-NEK.
      (2) Concrete Sealants, Type CS-208.
      (3) Or approved equal.

Steps:

1. Provide steps with a minimum width of 12 inches and a minimum projection of 5 inches.
2. Use steps consisting of copolymer polypropylene plastic with continuous one-half inch steel reinforcement as manufactured by M.A. Industries, Inc.; Cast iron steps, Neenah R-1980-I; or approved equal.
3. Frames and covers: Provide cast iron frames and covers with heavy duty, indented top with solid self-sealing lids and machined bearing surfaces, stamped with the words "VILLAGE OF CARPENTERSVILLE" and "WATER".

1. Acceptable products:
   a. Neenah R-1713;
   b. East Jordan 1050 EXHD;
   c. Or approved equal.

Flexible pipe connectors: Provide flexible rubber gasket collar for connecting pipe to the vault.

1. Comply with ASTM C-923
2. For pipe 24 inches and smaller, use PSX gasket system by Press-Seal Gasket Corporation, or approved equal.

FIRE HYDRANTS:

1. Comply with AWWA C502.

2. Paint fire hydrants with Factory Red color as approved by the Village.
3. Match the fire hydrants generally installed in the Village's water system.
4. Acceptable Manufacturer:
   a. Clow Medallion F-2545
      i. With flanged shoe for depths of bury 6' and less.
      ii. With mechanical joint shoe for depths of bury greater than 6', with a minimum 24" long stub and a maximum 36" long stub with MegaLug joints.
   b. No substitutions.

Materials:

1. Provide compression type valve with a 5-1/4-inch minimum size main valve assembly, O-ring seals, two 2-1/2-inch hose nozzles, and a 4-1/2-inch pumper nozzle with National Standard threads, a National Standard operating nut, and an above-ground break flange.
2. Provide a 6-inch auxiliary resilient seat type gate valve with restrained type joints between the fire hydrant, the valve and the tee fitting.
   a. Clow flange by MJ, or Clow MJ by MJ, depending on depth of bury.
3. Provide valve boxes with cover marked with the word "WATER".
   a. Acceptable Manufacturer:
      1. Tyler 664-S,
      2. EJIW-664-S,
      3. or approved equal.
4. Provide valve box stabilizers on all hydrant auxiliary valves.
   a. Acceptable Manufacturer:
      1. Valve Box Stabilizer, Inc., Joliet, Illinois (815 722 2517)
      2. No substitutions.

<u>WATER SERVICES</u>:

1. Provide service saddles, corporation stops, curb stops, service boxes, and water service tubing.
2. Materials:
   a. Service lines: Type K soft temper seamless copper water tubing complying with ASTM B-88.
   b. Service saddles:
      (1) Romac 202N
         a. Direct tap required for 1" and smaller corporation stops when installed on ductile iron water main pipe.

c. Corporation stops: A.Y. McDonald 4701BT or 4701BQ (ball type), compression connection.
   (1) Direct tap required for 1" and smaller corporation stops when installed on ductile iron water main pipe.
   (2) Provide swivel nut 4750 ST required for 1½" and 2" services.
   (3) No substitutions.
d. Curb stops: A.Y. McDonald 6104BT (ball type), compression connections, and Minneapolis pattern top.
e. Service boxes: A.Y. McDonald 5614, Minneapolis pattern base, 1¼" upper section for ¾" and 1" services (no stationary rod).
f. Couplings: A.Y. McDonald "T" or "Q" Series 4758T or 4758Q.

TAPPING SLEEVES AND VALVES:

Tapping sleeves:

1. Use two-piece bolted sleeve ductile iron or stainless steel type with mechanical joints.
2. Provide joint accessories.
3. Measure existing water main outside diameter to determine proper tapping sleeve size
4. Acceptable manufacturers:
   (1) Ductile iron: Clow F-5207,
   (2) Stainless steel: Cascade CXTEX extra heavy duty,
   (3) Stainless steel: Romac SST-III,
   (4) or approved equal.

Tapping valves:

1. Use fully ported gate valves complying with AWWA C500.
2. Use mechanical joints type, Clow F-5093, or approved equal.

RESTRAINED FLANGE ADAPTER:

1. Provide a ductile iron flange adapter dual ring system with bolt circles compatible with 125# Class 150 bolt pattern.
   a. Provide adapter with individual actuated gripping wedges that use torque limiting screws to insure proper initial set.
   b. Set screw "only" restraining adaptors are not acceptable.
   c. Provide system that allows joint deflection of up to 5°.
   d. Provide a fluoropolymer coating to the wedge and wedge assembly and powder coating to the restraint body.
2. Acceptable Manufacturers:

a. Series 2100 Magaflange by EBAA Iron;
b. Or approved equal.

CONSTRUCTION REQUIREMENTS

PIPE INSPECTION, HANDLING, STORAGE, AND INSTALLATION: Install in accordance with pipe manufacturer's recommendations.

Ductile iron water mains and appurtenances:

1. Comply with AWWA C-600.
2. Protect all pipe, fittings, fire hydrants, auxiliary valve boxes, buried valves, valve boxes, and corporation stops by loose wrapping with polyethylene sheeting or tubing.
   a. Place polyethylene sheet around the entire circumference of the pipe, tie or tape sheet securely to prevent displacement during backfilling.
   b. Comply with ANSI/AWWA A21.5-99/C105 regarding installation of polyethylene protection.
3. Install conductivity through joints by use of conductivity wedges or copper cable and taps.
   a. 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.
   b. Use number of copper cable connectors per joint as recommended by the pipe manufacturer.
4. Provide and install locator wire for the total length of pipe installed in open cut trenches, plus additional wire/cable to leave a 10 foot loop of cable in the adjacent valve vault and through any casing pipe.
   a. Connect locator wire to locator wire installed with water main installed by horizontal directional drilling methods.
   b. Hang loop of cable inside valve vaults on a stainless steel eye hook with expansion anchor.

OPERATION OF APPURTENANCES: The Village of Carpentersville Public Works Department employees only shall operate any existing water distribution appurtenances (i.e. water valves, fire hydrants, etc.).

WATER DISRUPTIONS: A minimum forty-eight (48) hours advance notice to the Village of Carpentersville Public Works Department is required for any water service disruptions.

DEPTH OF PIPE COVER: Install water mains and water service lines with a minimum depth of cover of 5'-6" below finished grade ground level unless otherwise indicated on the Plans.

1. Where new mains cross existing mains, install new main below existing main unless otherwise indicated on the Plans.

CONNECTIONS TO EXISTING WATER MAINS:

1. Make connections to existing mains.
2. Use non-pressure connections, except where pressure connections are shown on the Plans or required by conditions at the time of construction.
3. Make one connection at a time except as approved by the Engineer.

PIPE RESTRAINING SYSTEMS:

General:

1. Provide protection from movement of water main piping, plugs, caps, tees, valves, hydrants, and bends of 11-1/4 degrees or greater using restrained joint type fittings.
   a. Provide restrained joint fittings and concrete thrust blocks where shown on the Plans and where connections are made to existing water mains.

2. Where restrained joint type fittings are called for on the Plans, but cannot be used, provide concrete thrust blocks.

Concrete thrust blocks:

1. Provide precast or cast-in-place 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.
3. Sides of thrust blocking not subject to thrust may be placed against forms.
4. Place thrust blocking so the fitting joints will be accessible for repair.

Restrained type pipe and fittings:

1. Provide restrained joint pipe to distance indicated on the Plans, or not less than a minimum of three pipe lengths on each side of a bend or fitting to be restrained.
   a. Only restrained joint pipe indicated on the Plans will be paid for as a separate Pay Item.
   b. Restraining gaskets or locking systems used on straight runs of push-on pipe are not considered as fittings, and are paid for as part of the Pay Item for restrained joint type pipe.

SEWER CROSSING: Maintain adequate separation between water mains and water service lines from sanitary sewer, storm sewers, combined sewers, building sewer service connections, and drains in accordance with the "Standard Specifications for Water and Sewer Main Construction in Illinois".

Water mains:

1. Wherever water mains cross storm sewers, sanitary sewers, or sewer service connections:
   a. Install water main with its invert at least 18 inches above the top of the sewer.
   b. Maintain this vertical separation for that portion of the water main located within 10 feet horizontally of any sewer or drain crossed.
   c. Center a length of water main pipe over the sewer to be crossed with joints equidistant from the sewer or drain.
2. When it is impossible to obtain the minimum 18 inches vertical separation, or when it is necessary for the water main to pass under a sewer or drain:
   a. Construct the sewer or drain of pressure pipe, conforming to the Standard Specifications for water main materials.
   b. Extend the sewer construction on each side of the crossing until the normal distance from the water main to the sewer or drain is at least 10 feet.
   c. As an alternate, install either the water main or sewer inside a casing pipe for a distance of 10 feet measured perpendicular to the sewer on each side of the crossing.
3. Where a water main must cross under a sewer:
   a. Maintain a vertical separation of 18 inches between the invert of the sewer and the crown of the water main.
   b. Support the sewer or drain line to prevent settling and breaking the water main.

Water service lines: Comply with the requirement of water main separation.

Sewer manholes: Do not install water mains or service lines through sewer manhole.

VALVE VAULTS:

General:

1. Install pipe through valve vault as shown on the Detail.
2. Make vault watertight with use of flexible manhole connectors as per the Detail.

Steps:

1. Provide each vault over 3 feet deep with individual wall-mounted steps as shown on the vault detail.
2. Comply with the requirements of governmental agencies having jurisdiction.

Jointing:

1. Use flexible watertight gaskets for each joint.
2. Trim smooth and free from surplus gaskets.

Frames and covers: Unless otherwise shown on the Plans or as determined by the Engineer, set frames and covers:

1. In paved areas: So that the top of the solid cover will be flush with the finished pavement
2. In unpaved areas: To drain away from the valve vault.
3. With flexible watertight gaskets.
4. With grade rings not exceeding 8 inches in height.

FIRE HYDRANT INSTALLATION:

1. Install fire hydrant plumb with the lowest hose connection at least 18 inches, but not more than 26 inches, above the finished grade ground level. Set fire hydrant base and auxiliary valve on a precast concrete block to provide firm support for the bases.
2. Brace the bases with solid concrete blocking between the base and undisturbed trench wall to counteract the reaction thrust of water pressure at the base. Provide mechanical joint anchoring fittings or approved restrained joints.
3. Brace the fire hydrant barrels during backfilling. Do not block the drain hole in the fire hydrant.
4. Place a minimum of ½ cubic yard of washed coarse stone at and around the base for proper drainage. Cover stone with plastic before backfilling.
5. Place and compact backfill materials in 6-inch layers around the fire hydrant and auxiliary gate valve.
6. Cover new fire hydrant with plastic bag until new system is in service.

WATER SERVICE CONNECTION:

1. Make service connections at locations shown on the Plans or determined by the Village or Engineer at the time of construction.

2. Install water service pipe, corporation stop, curb stop, and service box as shown on the water service installation detail and by the method indicated on the Plans.
3. Set curb stop on a precast concrete block.
4. Do not splice the water service pipe.
5. Connect new water service to existing service pipe adjacent to and on building side of water meter or service box.

Service boxes:

1. Install service box over curb stop in a truly vertical position.
2. Set the top of box flush with the surrounding finished grade.

Direct tapping of polyethylene-encased D.I.P.:

1. Wrap two or three layers of polyethylene adhesive tape completely around the pipe to cover the tapping machine and chain mounting area.
2. Make the tap and install the corporation stop directly through the tap and polyethylene.
3. After making the direct service connection, inspect the entire circumferential area for damage and make any necessary repairs.
5. Wrap the corporation stop and a minimum of 3 feet of the copper service pipe with polyethylene.

PRESSURE CONNECTION:

1. Support the exposed existing water main on concrete pedestals at sufficient intervals to properly carry its own weight, plus the weight of the tapping machinery and fitting. Provide thrust blocking.
2. For pipe 12-inch or smaller, minimum tap hole diameter will be ½ inch less than the nominal pipe diameter. For 14-inch through 20-inch pipe, Minimum tap hole diameter for pipe will be 1½ inches less than the pipe diameter.
3. Open valve to flush any foreign material after completion of the pressure tapping.

TUNNELING:

1. Use boring auger with a diameter at least 6 inches larger than the outside diameter of the bell of the pipe to be installed.
   a. Place a 3-inch sand cushion in the bored hole before installing the pipe.
   b. Push the pipe carefully into place so as not to disturb the bore hole. Protect open end of water main pipe to prevent soil or sand from entering pipe.

c. Fill the void space around the pipe with sand.

2. Water main may be tunneled by hydro-boring or other directional boring method in lieu of method outlined above.
   a. Method must be approved by Engineer at pre-construction meeting.
   b. No additional compensation will be allowed. If alternate method proves to be unsuccessful, and Contractor will complete installation as outlined above at no addition to Contract.

POLYETHYLENE WRAPPING OF DUCTILE IRON PIPE AND APPURTENANCES:

1. Comply with requirements of ANSI/AWWA C105/A21.5-99.
   a. Place polyethylene sheet around the entire circumference of the pipe, tie or tape sheet securely to prevent displacement during backfilling.
   b. Wrap all water mains, fittings, valves, valve boxes, fire hydrant leaders, fire hydrants, and corporation stops.
      (1) Wrap copper service lines to a point 3 feet from center of water main.
      (2) Do not block fire hydrant weep hole.

TESTING AND INSPECTING:

Hydrostatic tests:
1. Devise a method for disposal of waste water from hydrostatic tests and from disinfection procedures, as approved in advance by the Engineer.
2. Where any section of water main is provided with concrete thrust blocking, do not make hydrostatic tests until at least 5 days after installation of concrete thrust blocking, unless otherwise approved by the Engineer.

Pressure test:
1. Subject the new water mains and service lines, including valves and fire hydrants, to a hydrostatic pressure of 150 psi.
2. Hold the test pressure for a duration of one hour without pressure loss or further pressure application.
   a. If a pressure drop is recorded, the test is to be continued the test will continue for a duration of two hours. Allowabel makeup water will be determined by the Village representative according to the AWWA standard for allowable leakage per 1,000 feet in gallons per hour (GPH).

If makeup water is less than the following allowable amounts, the test is complete with a passing result.

Pipe Size	3"	4"	6"	8"	12"	16"
GPH	.28	.37	.55	.74	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.

3. If the pressure test fails:
   a. Carefully examine exposed pipe, joints, fittings, and valves.
   b. Replace or remake joints showing visible leakage.
   c. Remove cracked pipe, defective pipe, and cracked or defective joints, fittings and valves. Replace with sound material and repeat the test until results are satisfactory.
   d. Make repair and replacement without additional cost to the Village.
   e. Use only solid stainless full-body repair clamps as approved by the Engineer.

Leakage test:

1. Conduct a metered leakage test after the pressure test has been satisfactorily completed.
2. Duration of each leakage test: At least 24 hours.
3. During the test, subject water lines to the normal water pressure of the Village's water system.
4. Install water meter approved by the Engineer. Provide double check valve assembly between water meter and existing water main.
5. Maximum allowable leakage: As recorded by a meter approved by the Engineer, with leakage to not exceed the number of gallons per hour (gph) as determined by the following formula:

   $$gph = LD\,(P^{1/2})/133{,}200$$

   in which: L = Length of pipe tested, in feet
   D = Diameter of water main, in inches
   P = Average pressure, in pounds per square inch (gage)
6. 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.

Time for making test:

1. Except for joint material setting, pipelines jointed with rubber gaskets, mechanical, or push-on joints, or couplings may be subjected to hydrostatic pressure, inspected, and tested for leakage any time after partial completion of backfill.
2. Perform the pressure and leakage tests satisfactorily prior to requesting the Engineer to witness the official tests.
3. Notify the Engineer at least 48 hours prior to the time of the requested official tests.
4. Depending on traffic conditions, public hazard, or other reasons, the Engineer may direct when to conduct the tests, and may order the tests to be made in relatively short sections of water mains.

PRELIMINARY FLUSHING:

1. Prior to disinfection, flush main as thoroughly as possible.
   a. Flush main until water runs clear.
   b. Provide a minimum flushing velocity of 2.5 feet per second in the water main.
   c. Where no fire hydrant exists on the end of the main, the plug (or cap) on the end of the main must be tapped with opening in the end for flushing purposes. After acceptance, install threaded plug into tap.
      i. 8"-12" mains: 2 ½-inch tap.
      ii. 16" mains: 3-inch tap.
      iii. Larger than 16" use temporary fire hydrants.
   d. Contractor has the option to use temporary fire hydrants in lieu of taps. Temporary fire hydrants must be removed after testing is complete.
2. Coordinate time of flushing with Owner and Engineer, at least 72 hours in advance of flushing.
   a. Do not initiate flush without Owner's permission.

DISINFECTION:

After the water main work has been satisfactorily completed and tested, disinfect the work in accordance with AWWA C651, and "Standard Specifications for Water and Sewer Main Construction in Illinois".

Forms of applied chlorine:

1. Apply chlorine by gas feed or solution feed chlorinator, as approved by the Owner.
   a. Provide effective diffusion of the gas or solution into the water within the water main.
   b. Provide means for preventing the backflow of water into the feeder.
2. Chlorine solution.
   a. Apply solution of sodium hypochlorite into one end of the section of main to be disinfected while filling the main with water.

Requirement of chlorine:
1. Initial chlorine solution in pipe: At least 50 mg/l, but not more than 100 mg/l.
2. Retain the disinfecting solutions in the work for at least 24 hours
3. Chlorine residual after the retention period: At least 25 mg/l.

Flushing and testing:
1. Following chlorination, flush treated water thoroughly from the water mains until the chlorine concentration in the water flowing from the main is no higher than generally prevailing in the Village's system, or less than 1 mg/l.
2. After flushing, collect two water samples on successive days at least 24 hours apart in sterile bottles treated with sodium thiosulfate. Notify the Engineer and the Village to witness sample collection.
3. Deliver the samples to a State approved laboratory for bacteriological analysis.
4. Should the initial disinfection result in an unsatisfactory bacterial test, repeat the chlorination procedure until satisfactory results are obtained.
5. The Village will provide the water for initial flushing and testing only. Compensate the Village for water used in subsequent flushing and testing.

Swabbing:
1. Flush and swab the piping, valves, and fittings that must be placed in service immediately and cannot be disinfected by the above specified methods, with 5 percent solution of calcium hypochlorite prior to assembly.
   a. Secure the Engineer's approval before applying this method of disinfection.

ABANDONMENT OF EXISTING WATER MAINS AND APPURTENANCES:

1. Abandon water mains indicated on the Plans as "to be abandoned" only after all requirements for testing and disinfection have been satisfied and all existing services have been connected to new water mains.

2. Provide concrete plugs in all water main pipes to be abandoned at the limits of the trench excavations, or at other locations if so indicated by the Plans.
3. Provide ductile iron plugs, caps, or other necessary fittings, and thrust blocking, on ends of portions of existing water mains to remain in service.
4. Close existing water valves only with the permission of the Engineer.
5. Close valves, and remove valve boxes to the top of the existing valve, and fill excavation with compacted granular material.
6. Close valves, and remove valve vaults to top of pipe, and backfill with compacted granular backfill material.
7. Remove fire hydrants in total, including auxiliary box, and backfill excavation with compacted granular backfill material.
8. Deliver valves, valve boxes, fire hydrants, and frames and grates to the Village's Public Works Department.
9. Removal of existing water mains being replaced by new water mains in the same location is considered incidental to the installation of the new water main and no additional compensation will be allowed.

ADJUSTING WATER MAIN:

This work shall be done in accordance with Section 561 of the Standard Specifications, the WATER DISTRIBUTION SYSTEM special provision, the "Standard Specifications for Water and Sewer Main Construction in Illinois" and the details on the plans except as modified herein.

561.01 Description. Revise this Article to read:

"**561.01 Description.** This work shall consist of adjusting existing water main. Proposed water main installed in conflict with proposed storm sewer shall be adjusted at no additional cost to the Village. This work shall include removal and disposal of material, all pipe and fittings, joint materials, tests, disinfection, casing pipe, and excavation."

561.05 Basis of Payment. Revise this Article to read:

"**561.05 Basis of Payment.** This work will be paid for at the contract unit price per foot for ADJUSTING WATER MAIN, of the diameter specified.

Trench backfill shall be paid for separately."

WATER MAIN TO BE ABANDONED:

Description. This work shall be in accordance with the Special Provision for WATER DISTRIBUTION SYSTEM, and shall consist of the abandonment of existing water main pipe, water valves, valve vaults, valve boxes and fire hydrants. This work shall include pavement removal and disposal; excavation; removing valve vaults, water valves and fire hydrants; plugging open water main pipe to be abandoned with concrete; and backfilling with and compacting of trench backfill material.

Basis of Payment. This work will be paid for at the lump sum price for WATER MAIN TO BE ABANDONED.

CONNECTION TO EXISTING WATER MAIN (NON-PRESSURE):

Description. This work shall be done in accordance with the Special Provision for WATER DISTRIBUTION SYSTEM and shall consist of non-pressure connections to existing water mains complete in place, including saw cutting, and removal and disposal of existing pavements; excavation; removal and disposal of waste excavated materials; trench dewatering, including erosion and sedimentation control for discharge resulting from all pumping operations; protection, replacement, or repair of utilities; removal of existing plugs or caps; cutting and removal of the pipe if necessary; bracing; polyethylene wrapping of pipe and valves; bedding and covering of pipe; testing; disinfection; flushing; finish grading; including backfilling and compacting excavated material or trench backfill material; but not including the pipe, valve vault/box or fittings.

The maximum time allowable per each connection for water pressure shut off is two (2) hours. Each connection must be made within two (2) hours.

Basis of Payment. This work will be paid for at the contract unit price per each for CONNECTION TO EXISTING WATER MAIN, of the pipe size shown.

DUCTILE IRON WATER MAIN FITTINGS:

Description. This work shall be done in accordance with the Special Provision for the WATER DISTRIBUTION SYSTEM and shall consist of furnishing and installing restrained joint type water main fittings complete in place in the new water main, at locations indicated on the plans.

Basis of Payment. This work will be paid for at the contract unit price per pound for DUCTILE IRON WATER MAIN FITTINGS as shown on the Drawings.

PVC CASING PIPE 30":

Description. This work consists of installing PVC, HDPE, or steel casing pipe in an open cut trench as shown on the Plans, as specified herein, as needed for a complete installation, and in accordance with the latest edition of the "Standard Specifications for Water and Sewer Construction in Illinois", except as revised herein. This work shall include tight-sheeting where required to protect adjacent utilities, roadways, properties, or to provide protection to the public; protection, repair or replacement of utilities; fencing of work site to provide protection to public; excavation; removal and disposal of waste excavated materials; bracing; dewatering, including erosion and sedimentation control methods and devices to provide protection to the environment from all pumping operations; providing and installing casing and carrier pipe; casing spacers if necessary; end seals; backfilling with and compaction of excavated materials or trench backfill materials; cleanup; and finish grading.

Method of Measurement. This work will be measured for payment in feet along the centerline of the casing pipe.

Basis of Payment. This work will be paid for at the contract unit price per foot for PVC CASING PIPE 30".

CASING PIPE, OPEN CUT, 24" STEEL:

Description. This work consists of installing steel casing pipe in an open cut trench as shown on the Plans, as specified herein, as needed for a complete installation, and in accordance with the latest edition of the "Standard Specifications for Water and Sewer Construction in Illinois", except as revised herein. This work shall include tight-sheeting where required to protect adjacent utilities, roadways, properties, or to provide protection to the public; protection, repair or replacement of utilities; fencing of work site to provide protection to public; excavation; removal and disposal of waste excavated materials; bracing; dewatering, including erosion and sedimentation control methods and devices to provide protection to the environment from all pumping operations; providing and installing casing and carrier pipe; casing spacers if necessary; end seals; backfilling with and compaction of trench backfill materials; cleanup; and finish grading.

Method of Measurement. This work will be measured for payment in feet along the centerline of the casing pipe.

Basis of Payment. This work will be paid for at the contract unit price per foot for CASING PIPE, OPEN CUT, 24" STEEL.

DUCTILE IRON WATER MAIN:

Description: This work shall be done in accordance with the Special Provision for WATER DISTRIBUTION SYSTEM, and "TRENCHING, BACKFILLING AND COMPACTING FOR WATER MAIN AND SANITARY SEWERS", and shall consist of ductile iron water main pipe complete in place, including excavation; removal and disposal of waste excavated materials; protection, replacement, or repair of utilities; trench dewatering, including erosion and sedimentation control methods and devices to provide protection to environment from all pumping operations; installation of pipe; polyethylene wrapping of all pipe; bracing; bedding and covering of pipe; trench backfilling with and compaction of excavated materials; testing; disinfection; flushing; and finish grading; but not including backfilling with trench backfill material.

This pay item includes the pipe within tree tunnels.

Installing new water mains in excess of 6 feet of cover to cross existing water mains, to provide for future improvements, or to cross below sewer pipes or service lines is to be included in the cost of installation of the water main, and no addition to the contract will be allowed.

Where the water main trench is located under existing pavement outside of the reconstruction limits, the trench shall be patched with hot mix asphalt. The pavement sawing, removal and disposal of existing pavement, and the pavement patch shall be paid for separately as CLASS D PATCHES, TYPE IV, 8-INCH.

Method of Measurement. This work will be measured for payment in feet along the centerline of the pipe, and the measurement shall extend through fittings and valves.

Basis of Payment. This work will be paid for at the contract unit price per foot for DUCTILE IRON WATER MAIN of the pipe sizes and joint type, regardless of depth.

4-inch restrained joint water main pipe shall be paid for as DUCTILE IRON WATER MAIN 6" RESTRAINED JOINT TYPE.

Trench backfill with granular backfill materials will be paid for according to the Special Provision TRENCH BACKFILL, WATER MAIN, SPECIAL.

FIRE HYDRANT WITH 6" VALVE AND VALVE BOX:

Description: The work of this pay item shall be in accordance with the Special Provision for

WATER DISTRIBUTION SYSTEM and shall consist of furnishing and installing a new fire hydrant with five (5) feet of 6-inch ductile iron leader pipe, new auxiliary valve, valve box and cover, extension stem, and restrained joint fittings, valve and fire hydrant with concrete thrust block, complete in place at the locations shown on the Plans, including saw cutting, removal and disposal of existing pavements; excavation; removal and disposal of waste excavated materials; trench dewatering; and backfilling with and compacting of trench backfill material around the fire hydrant and auxiliary valve and valve box.

Method of Measurement. This work will be measured for payment per each fire hydrant installed.

Fire hydrant barrel section extensions and auxiliary valve box extensions will be measured for payment in feet of the barrel or box extension, measured to the nearest 0.5 foot.

Basis of Payment. This work will be paid for at the contract unit price per each for FIRE HYDRANT WITH 6" VALVE AND VALVE BOX.

Fire hydrant barrel section extensions will be paid for at the contract unit price per foot for FIRE HYDRANT EXTENSION.

Auxiliary valve box extensions will be paid for at the contract unit price per foot for AUXILIARY VALVE BOX EXTENSION.

Additional fire hydrant leader pipe will be paid for at the contract unit price per foot for DUCTILE IRON WATER MAIN 6" RESTRAINED JOINT TYPE.

PLUG EXISTING WATER MAIN:

Description: This work shall be done in accordance with the Special Provisions for WATER DISTRIBUTION SYSTEM and shall consist of installing plugs or caps on the end of a water main or at a valve or fitting where the water main will remain in service, including excavation; removal and disposal of waste excavated materials; protection, repair, or replacement of utilities; dewatering; erosion and sedimentation control devices; removal of valve and/or pipe necessary to install plug or cap; restrained joint plug or cap; swabbing or other required disinfection; installation of plug or cap; concrete thrust blocks; coordination with Village Water Department on times of excavating and plugging of water main; and backfilling with and compacting of trench backfill material.

Concrete plugs installed in water main pipes to be abandoned at the limits of

excavations will not be paid for and are included in the cost of existing water main abandonment.

Basis of Payment. This work will be paid for at the contract unit price per each for PLUG EX WATER MAIN.

GATE VALVE:

Description. This work shall be done in accordance with the Special Provision for WATER DISTRIBUTION SYSTEM and shall consist of the installation of a gate valve, complete in place, installed as a part of the water main installation, at locations indicated on the Plans. The valve shall be of ductile iron body, bronze fitted, modified wedge disc, resilient seat type with non-rising stem and O-ring packing and conform to the latest revised requirements of AWWA Specification C515.

Basis of Payment. This work will be paid for at the contract unit price per each for GATE VALVES of the size indicated.

Fire hydrant auxiliary valves will be paid for according to the Special Provision for FIRE HYDRANT WITH 6" VALVE AND VALVE BOX.

PRESSURE VALVE INSERT, 8 INCH:

Description. This work shall be done in accordance with the Special Provisions for WATER DISTRIBUTION SYSTEM, "GATE VALVE" and "VALVE VAULT", except as modified in this section. The work shall consist of the installation of a pressure reducing/pressure sustaining and check valve, a gate valve, piping/plumbing, gauges, and fittings installed in a 72-inch diameter precast concrete valve vault with connections to the proposed water main complete in place, installed as a part of the water main installation with testing, disinfection, and flushing; at the location shown and in accordance with the Detail in the Plans.

The pressure reducing/pressure sustaining/check valve shall be of ductile iron body and bronze fitted, with a solid, one piece bronze seat insert. Two piece seats are not acceptable. The valve shall be a Cla-Val Model 92-01YCBDPKC, with a diaphragm valve for outlet pressure control with a range of 15 to 75 pounds per square inch, and a diaphragm valve for inlet pressure control with a range of 20 to 200 pounds per square inch. The valve shall include a "Y" strainer with a fine mesh monel screen and bronze housing; and stainless needle valve, adjustable to regulate the closing speed of the main valve; pilot system isolation valves with bronze bodies and stainless steel trim, copper tubing and brass fittings.

- Cla-Val is the accepted manufacturer of the Village of Carpentersville. Substitutions are not acceptable.

The gate valve shall match the other gate valves specified, provided and installed as part of this project. The gate valve shall be furnished by a manufacturer considered standard by the Village. The gate valve shall include a hand wheel and a restrained joint flange adapter.

The valve vault shall match other precast concrete valve vault structures specified, provided and installed as part of this project.

The work of this Pay Item shall include removal of the existing pressure control valve in the vault at the intersection of Maple Avenue and Carpenter Boulevard, and delivery of the existing pressure control valve to the Village's Public Works Facility.

Submittals:

A. Shop drawings, including:
   1. Full size, 24" by 36" drawings showing equipment and piping layout, dimensions, and details specific to the Work of this Section.
   2. Manufacturer's detailed specifications.

B. Installation, Inspection, Testing and Operator Instructions:
   1. Provide the services of a qualified serviceman from the manufacturer of the pressure reducing valve to:
      a. Inspect the valve installation including alignment and clearances.
      b. Determine the installation is properly completed.
      c. Instruct the Owner's personnel in the proper operation and maintenance of the pressure reducing valve in accordance with the manufacturer's recommendations.

   2. Make all changes or adjustments that may be required for a complete and proper installation and operation.

   3. After the installation has been completed in accordance with the manufacturer's instructions and in the presence of the manufacturer's serviceman, test the equipment and its appurtenances for proper operating condition and for performance in accordance with these Special Provisions, subject to the Engineer's approval.

4. Provide three (3) copies of the manufacturer's certificate of inspection and the Contractor's verification of equipment inspection to the Engineer certifying and verifying the equipment and all appurtenances supplied with it have been installed in accordance with the manufacturer's recommendations and that the test operation was satisfactory.

C. Equipment Guarantee:

1. Guarantee all equipment and other mechanical devices operate in accordance with the requirements of these Special Provisions and replace and repair guaranteed items found to be defective within two years from the date of the Owner's acceptance for use of the equipment without additional expense to the Owner for labor or materials.
   a. After obtaining Owner Authorized Representative's signature, provide three (3) copies of a Contractor's equipment guarantee to the Engineer,

D. Operation and Maintenance Manual:

1. Provide front and back covers for each manual, using durable material, and clearly identified on or through the cover with at least the following information:

   OPERATION AND MAINTENANCE MANUAL
   (Name and address of Work _____)
   (Name of Contractor _____)
   (General subject of the Manual _____)
   (Engineer, and approval date _____)

2. Contents: Include at least the following:
   a. Neatly typewritten index near the front of the manual, giving immediate information as to location within the manual of all emergency information regarding the installation.
   b. Complete instructions regarding operation and maintenance of the pressure reducing valve, gate valve, gauges and any other equipment.
   c. Complete nomenclature of all parts of the equipment.
   d. Complete nomenclature and part number of all replaceable parts, name and address of nearest vendor, and all other data pertinent to procurement procedures.

e. Manufacturers' bulletins, cuts, and descriptive data clearly indicating the precise items included in this installation.

3. Submit five (5) copies of the required manuals to the Engineer no later than 30 days following the Engineer's approval of shop drawings for said item of equipment.

Installation:

Piping and Valve Supports:

A. General:
1. Design and provide complete system of supports and anchors for all piping, fittings, valves, fixtures and appurtenances.
2. Absence of pipe supports and details on the Drawings shall not relieve the vault manufacturer or Contractor of responsibility for providing them.
3. Design pipe support system to withstand dead loads imposed by weight of pipes filled with water plus test pressure, with a minimum safety factor of 5.

B. Types of support:
1. Floor pipe supports: Adjustable with floor flanges, pipe stanchion, and saddle where they do not obstruct passage.
2. Provide a minimum of one pressure reducing valve pipe support.

Valve Installation:

A. Install valves in accordance with manufacturer's recommendations.

Gauge Installation:

A. Install gauges and accessories in accordance with manufacturer's recommendations.

Field Measurements:

A. Make necessary measurements in the field to assure precise fit of items in accordance with the Plans.

Excavation and Backfilling:

A. Comply with the Special Provision for TRENCHING, BACKFILLING AND COMPACTING FOR WATER MAIN AND SANITARY SEWER.

Testing and Inspecting:

A. General:
   1. The pressure reducing valve and vault piping shall be considered an appurtenance of the water main and shall be included in the water main testing.
      a. Perform hydrostatic pressure and leakage tests in accordance with applicable portions of the Special Provisions for WATER DISTRIBUTION SYSTEM.

Basis of Payment. This work will be paid for at the contract unit price per each for PRESSURE VALVE INSERT, 8 INCH which includes the pressure reducing/sustaining and check valve, the gate valve, the 72-inch diameter valve vault and all other items shown in the Detail included in the Plans.

WATER MAIN LINE STOP:

Description. This work shall be done in accordance with the Special Provision for WATER DISTRIBUTION SYSTEM and shall consist of the installation of water main line stops or temporary valves (insertion valves), complete in place, installed for water main construction, at locations indicated on the Plans.

This work consists of locating of existing water mains or service pipes; sawcutting, and removal and disposal of existing pavements; installing line stops or temporary/insertion valves on existing water mains to allow the installation of new/replacement water mains at side streets or water service pipes larger than 2" diameter, including excavation; removal and disposal of waste excavated materials; protection, repair, or replacement of utilities; dewatering; erosion and sedimentation control devices; swabbing or other required disinfection; concrete thrust blocks or other means of pipe restraint as required; coordination with Village Water Department on times of temporary stoppage or plugging of water main; and backfilling with and compacting of trench backfill material. The work of this Pay Item includes removal of the line stop bladder and capping of the tapping sleeve/tee once the existing water main or service pipe has been connected to the new water main.

Basis of Payment. This work will be paid for at the contract unit price per each for WATER MAIN LINE STOP of the size indicated.

PIPE INSULATION SYSTEM:

Description. This work shall be done in accordance with the Special Provision for WATER DISTRIBUTION SYSTEM and shall consist of the installation of rigid pipe insulation at locations indicated on the Plans, and as shown in the Detail on the Plans.

Rigid Pipe Insulation:

3. Provide extruded polystyrene sheathing conforming to ASTM C578, Type IV.
4. Thickness: 2 inches.
5. R-Value: 10.
6. Water absorption: No greater than 0.10% by volume per ASTM C272.
7. Acceptable product:
   a. Formular Rigid Foam Insulation, Owens-Corning.
   b. Or approved equal.

Installation:

1. Place rigid insulation board against the sides of the trench and outside the pipe bedding material.
2. Place rigid insulation board above the pipe bedding material to the width of the trench.
3. Place rigid insulation board to the required thickness and in the locations as shown on the Plans and Detail.

Method of Measurement. The work will be measured for payment in feet along the centerline of the pipe, for the length of the insulation.

Basis of Payment. This work will be paid for at the contract unit price per foot for PIPE INSULATION SYSTEM.

VALVE VAULTS:

This work shall be done in accordance with Section 602 of the Standard Specifications, the Special Provision for WATER DISTRIBUTION SYSTEM and the detail shown on the Plans.

602.07 Precast Reinforced Concrete Sections. Add the following to the end of this article:

"Valve vault work shall include additional vault structure riser sections to establish frame adjusting ring heights of 8 inches or less."

602.16 Basis of Payment. Add the following to the end of this article:

"Valve vault extensions will not be paid for separately but will be included in the cost of the VALVE VAULTS."

VALVE BOX:

Description. This work shall be done in accordance with the Special Provision for WATER DISTRIBUTION SYSTEM and shall consist of installing a valve box complete in place, as shown in the detail on the Plans. This work shall include excavation; removal and disposal of waste excavated materials; protection, repair, or replacement of utilities; trench dewatering; erosion and sedimentation control methods and devices to protect the environment; backfilling with and compacting trench backfill material around the new box; and finish grading.

Basis of Payment. This work will be paid for at the contract unit price per each for VALVE BOX.

WATER SERVICE CONNECTION:

Description: This work shall be done in accordance with the Special Provision for WATER DISTRIBUTION SYSTEM and shall consist of connecting water service lines to the new water main and existing service lines complete in place, including service saddles, corporation stops; curb stops, and service boxes. This work also includes all required fittings or adaptors necessary to connect to existing service lines, and backfilling with and compacting of trench backfill material.

Basis of Payment. This work will be paid for at the contract unit price per each for WATER SERVICE CONNECTION of the size indicated.

WATER SERVICE LINE:

Description. This work shall be done in accordance with the Special Provision for WATER DISTRIBUTION SYSTEM and shall consist of water service pipe complete in place by open cut methods or by moling, directional drilling or hammering; including excavation, shoring, bracing; protection repair, or replacement of utilities; installation of service pipe; bedding and covering of pipe; and backfilling with and compacting of trench backfill material.

Water service pipe shall be installed by the moling, directional drilling, or hammering method for all service lines 2" and smaller in diameter installed across the Maple Avenue pavement.

Method of Measurement. This work will be measured for payment in feet along the centerline of the pipe, from the centerline of the water main to the termination of the service pipe at the curb stop.

Basis of Payment. This work will be paid for at the contract unit price per foot for WATER SERVICE LINE of the size indicated.

WATER MAIN (DIRECTIONAL BORE):

Description. This work shall consist of furnishing all labor, materials and equipment necessary to install water main by the horizontal directional drilling (HDD) method of pipe installation, of the size and pipe material specified to the alignment, grade and locations shown on the Plans.

CONSTRUCTION REQUIREMENTS

SUMMARY: Provide Ductile Iron restrained joint water main pipe and install by the trenchless horizontal directional drilling method as shown on the Plans; as specified in this section of the Special Provisions herein; in accordance with Section 561 of the Standard Specifications; in accordance with the latest edition of the "Standard Specifications for Water and Sewer Main Construction in Illinois"; and as needed for a complete installation.

Provide labor, materials, tools, equipment and chemicals necessary to perform all work and testing specified in this Section.

SUBMITTALS: Provide detailed plan of means and methods to maintain clean and safe conditions in the event drilling material escapes to surface or adjacent storm sewers, including list of material and equipment that will be on-site during drilling and pipe insertion.

GENERAL CONSTRUCTION REQUIREMENTS: Provide all excavation, pits, installation and removal of tight sheeting, backfilling of pits, and providing and compacting granular backfill materials where necessary. Use an adequate number of workmen who are thoroughly trained and experienced in the necessary crafts, and who are completely familiar with the specified requirements and methods needed for proper performance of the work of this Section.

DIRECTIONAL DRILLING SYSTEM: Provide hydraulically or pneumatically operated, fluid-assisted, remote guided drilling system capable of installing pipe indicated on the Drawings by trenchless methods.

1. Provide compressors, pumps, apparatus, tools, and all devices certified as suitable by the system manufacturer to install the new pipe without damaging or stressing the pipe.
2. Provide recovery system that will recover bentonite slurries or other drilling fluids without releasing the slurry onto the surrounding ground or water surfaces.
3. Provide certification from pipe manufacturer that the proposed material and strength classification is appropriate for application.

INSTALLATION AND RECEIVING PITS: Comply with OSHA requirements and install sheeting and fencing as required to protect the public.

1. Although most horizontal directional drilling is done without the use of pits, if pits are required, comply with the following criteria.
2. Provide pits as required to install and receive pipes.
   a. Provide tight sheeting where required to provide protection to public, permitting agency and public property, and adjacent utilities.
   b. Comply with OSHA requirements for type, installation, and removal of sheeting.
   c. Provide fencing around pits to secure the area and to provide protection to the public.
3. Provide pits of length and width as necessary to install pipes and sized to fit area available for Work.
4. Provide dewatering as required to allow excavation of pits and installation of pipes.
   a. Provide protection to environment from erosion or sedimentation resulting from all pumping operations.
5. Backfilling of pits:
   a. Backfill with compacted granular backfill materials where required.
   b. Remove all construction debris, materials, excess excavated material, and sheeting from construction area upon completion of the Work.

LOCATOR WIRE: Provide TRACE-SAFE Water Blocking Tracer Wire with TRACE-SAFE Connectors as manufactured by NEPTCO, Pawtucket, RI www.trace-safe.com.

POLYETHYLENE WRAPPING OF DUCTILE IRON PIPE: Comply with requirements of ANSI/AWWA C105/A21.5-99.

1. Place polyethylene sheet around the entire circumference of the pipe, tie or tape sheet securely to prevent displacement during backfilling.
2. Utilize spiral wrapping that extends for the entire length of the pipe or circumferential wrapping at 2-foot intervals.
3. Provide double wrap at first two pipe sections at pull head end of pipe that consists of one layer of 8 mil LLDPE and a second layer of HDCLPE with a minimum of 4 mils thickness for the outer wrap.
4. Comply with recommendations of DIPRA's article for "Horizontal Directional Drilling with Ductile Iron Pipe" in installation and wrapping of polyethylene film.

SURFACE CONDITIONS: Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

1. Protect existing utilities indicated or made known.
2. Protect trees and shrubs by plank wrappers securely wired in place or by providing a fence around the tree or shrub of sufficient distance away and of sufficient height so trees and shrubs will not be damaged in any way as part of this Work.
   a. Do not permit any equipment to operate within 5 feet of any trees or shrubs that are to remain or in a manner as to harm overhanging branches.
3. Protection of persons and property:
   a. Barricade open depressions and holes occurring as part of this Work, and post warning lights on property adjacent to or with public access.
   b. Operate warning lights during hours from dusk to dawn each day and as otherwise required.
   c. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by operations under this Section.
4. Use means necessary to prevent dust from becoming a nuisance to the public, to neighbors, and to other work being performed on or near the work areas.
5. Maintain access to the work areas at all times.

6. Provide protection to environment, public and private property, and public or private utilities from drilling mud that is utilized as lubricant or hole support during drilling and pipe insertion.
   a. Provide vacuum trucks and apparatus of sufficient size and quantity to reclaim all drilling mud discharged during operations.
   b. Provide trucks, end loaders, and any other equipment and manpower necessary to maintain a clean and safe work site during operation.

PIPE INSTALLATION: Install pipe by pulling the pipe into place.

1. Provide winch systems designed to protect structures, provide directional stability, and pull pipe from insertion point to exit point without causing damage to the pipe.
2. Insert pipe in a continuous operation from pullback point to drilling point.
3. Provide silencers, mufflers, or other devices required to reduce noise from compressors and other equipment to meet limits as outlined by Owner's local ordinances.
4. Provide locator wire at each boring location for the total length of pipe, plus additional wire/cable to leave a 10 foot loop of cable in the adjacent valve vault and through any casing pipe.
   a. Connect locator wire to locator wire installed with water main in open cut trenches.
   b. Hang loop of cable inside valve vault on a stainless steel eye hook with expansion anchor.

TESTING: Comply with testing requirements outlined in the DUCTILE IRON WATER MAIN Special Provision.

1. Repair any defects or leaks in the pipe discovered during testing.
2. Retest all repaired sections until they meet all testing and inspection requirements.

Method of Measurement. This work will be measured for payment in feet along the centerline of the pipe, and the measurement shall extend from the end of the drilling and pullback pads located adjacent to ductile iron water main pipe installed in open cut trench.

Basis of Payment. This work will be paid for at the contract unit price per foot for WATER MAIN, of the size specified (DIRECTIONAL BORE) regardless of depth. Price shall include

excavation for drilling and receiving pits, bedding and initial pipe covering in the drilling and receiving pits, testing and disinfection.

All trench backfill with granular backfill materials above the granular pipe bedding and cover material shall be included in the cost of the drilling and receiving pits, which are included in the cost of the WATER MAIN 16" (DIRECTIONAL BORE).

Water main fittings shall be paid for according to the Special Provision for DUCTILE IRON WATER MAIN FITTINGS.

PIPE DRAINS (SPECIAL):

This work shall be done in accordance with Section 601 of the Standard Specifications except as modified herein.

601.01 Description. Add the following to the first paragraph of this Article:

"This pay item is intended to connect existing roof drains and sump pump lines to the existing or proposed storm sewer or pipe underdrains. This work shall be constructed in accordance with the Detail provided in the Plans, and shall include sump pump line or roof downspout connections; connections to existing or proposed drainage structures or pipes; excavation and trench backfill; all necessary pipe, fittings, connectors, transition couplings, bends, saddles, and tees to connect the pipe drain to existing pipes, drainage structures, sump pump lines, or roof downspouts; and a cast iron clean-out plug with an adaptor."

601.02 Materials. Revise this Article to read:

"**601.02 Materials.** The pipe drains shall be polyvinyl chloride (PVC) pipe in accordance with Section 1040.03, or approved other by the Engineer."

601.03 Pipe Drain Installation. Add the following paragraph to the end of this Article:

"Pipe drains shall be installed between the sump pump line or roof downspout connection and the storm sewer or drainage structure as determined by the Engineer. The connection to the storm sewer or drainage structure shall consist of a machine-cored circular hole in the pipe or structure and a flexible boot or collar fitting to prevent the pipe drain from protruding into the storm sewer."

601.07 Method of Measurement. Revise this article to read:

"**601.07 Method of Measurement.** Pipe drains will be measured for payment in feet measured horizontally from the existing discharge pipe to the storm sewer or storm structure wall. Any vertical distance shall be included in the cost of this item."

601.08 Basis of Payment. Revise the first paragraph of this Article to read:

"**601.08 Basis of Payment.** This work will be paid for at the contract unit price per foot for PIPE DRAINS, of the diameter specified (SPECIAL)."

DRAINAGE & UTILITY STRUCTURES TO BE ADJUSTED:

This work shall be done in accordance with Section 602 of the Standard Specifications except as modified herein.

602.01 Description. Revise this Article to read:

"**602.01 Description.** This work shall consist of adjusting existing catch basins, manholes, inlets, or valve vaults."

602.02 Materials. Revise Note 3 at the end of this Article to read:

Note 3. Riser rings fabricated from recycled rubber must be used to adjust the frames and grates of drainage and utility structures up to a maximum of 50 mm (2 in.). They shall be installed and sealed underneath the frames according to the manufacturer's specifications.

Recycled rubber products shall consist of no less than 80 percent by weight recycled rubber. The riser shall meet or exceed the following when maintained at 23 ± 2°C (73 ± 3°F) for at least 24 hours prior to and during testing.

Physical Property	Test Standard	Value
Density	ASTM C 642-90	1.10 ± 0.034 g/cu cm (68.63 ± 2.11 lb/cu ft)
Durometer Hardness	ASTM D 2240-97 Shore A	72 ± 6[1]
Compression Deformation	ASTM D 575 –Test Method B	9 ± 4 %

under 1000 kPa (145 psi)	Test of Specified Force	
Compression Set	ASTM D 395 – Illinois Modified Test Method B Compression Set under Constant Deflection in Air	5 ± 3 %[2]
Weathering (70 hrs at 70 °C (158 °F)) Hardness retained	ASTM D 573	98 %, minimum
Freeze/thaw when exposed to deicing chemicals	ASTM C 672-91	3 % loss, maximum

[1] Average of three tests over a 28 mm (1.12") diameter sample.
[2] Samples compressed to 75 percent of initial height.
Recycled rubber adjusting rings shall have no void areas, cracks, or tears, and have no effects due to exposure to ultraviolet light. The actual diameter or length shall not vary more than 3 mm (0.125") from the specified diameter or length. Variations in height are limited to ± 1.6 mm (0.063") for parts up to 50 mm (2")."

602.11 Furnishing and Placing Castings. Revise the last three sentences of the second paragraph of part (c) of this Article to read:

"Castings shall be set to the finished pavement elevation so that no subsequent adjustment will be necessary, and the space around the casting shall be filled with Class SI concrete to the elevation of the surface of the base course or binder course. The Class SI concrete shall be cured for a period of 72 hours. HMA materials will not be allowed to backfill around an adjusted casting."

602.16 Basis of Payment. Revise the second paragraph of this Article to read:

"This work shall be paid for at the Contract Unit Price each for DRAINAGE & UTILITY STRUCTURES TO BE ADJUSTED, which price shall include the adjustment of existing catch basins, manholes, inlets or valve vaults, resetting the frame and grate or lid, removing and resetting the existing external chimney seal, and excavation and backfilling."

INLETS, SPECIAL:

This work shall be performed in accordance with Section 602 of the Standard Specifications and the detail shown on the plans. This work shall include all excavation, backfilling, class SI concrete, concrete blocks, manhole frames & lids, and reinforcement bars as detailed in the

plans.

Basis of Payment. This work will be paid for at the contract unit price per each for INLETS, SPECIAL, of the number specified.

TRAFFIC CONTROL AND PROTECTION (ARTERIALS):
Effective: February 1, 1996
Revised: March 1, 2011

Specific traffic control plan details and Special Provisions have been prepared for this contract. This work shall include all labor, materials, transportation, handling and incidental work necessary to furnish, install, maintain and remove all traffic control devices required as indicated in the plans and as approved by the Engineer.

When traffic is to be directed over a detour route, the Contractor shall furnish, erect, maintain and remove all applicable traffic control devices along the detour route according to the details shown in the plans.

Method of Measurement: All traffic control (except Traffic Control and Protection (Expressways)) and temporary pavement markings) indicated on the traffic control plan details and specified in the Special Provisions will be measured for payment on a lump sum basis.

Basis of Payment: All traffic control and protection will be paid for at the contract lump sum price for TRAFFIC CONTROL AND PROTECTION (SPECIAL).

Temporary pavement markings will be paid for separately unless shown on a Standard.

UNIT DUCT:
Effective: January 1, 2012

Revise the first paragraph of Article 810.04 to read:

> "The unit duct shall be installed at a minimum depth of 30-inches (760 mm) unless otherwise directed by the Engineer."

Revise Article 1088.01(c) to read:

> "(c) Coilable Nonmetallic Conduit.

General:

The duct shall be a plastic duct which is intended for underground use and which can be manufactured and coiled or reeled in continuous transportable lengths and uncoiled for further processing and/or installation without adversely affecting its properties of performance. The duct shall be a plastic duct which is intended for underground use and can be manufactured and coiled or reeled in continuous transportable lengths and uncoiled for further processing and/or installation without adversely affecting its properties of performance.

The duct shall be made of high density polyethylene which shall meet the requirements of ASTM D 2447, for schedule 40. The duct shall be composed of black high density polyethylene meeting the requirements of ASTM D 3350, Class C, Grade P33. The wall thickness shall be in accordance with Table 2 for ASTM D 2447.

The duct shall be UL Listed per 651-B for continuous length HDPE coiled conduit. The duct shall also comply with NEC Article 354.100 and 354.120.

Submittal information shall demonstrate compliance with the details of these requirements.

Dimensions:

Duct dimensions shall conform to the standards listed in ASTM D2447. Submittal information shall demonstrate compliance with these requirements.

Nominal Size		Nominal I.D.		Nominal O.D.		Minimum Wall	
mm	in	mm	in	mm	in	mm	in
31.75	1.25	35.05	1.380	42.16	1.660	3.556 +0.51	0.140 +0.020
38.1	1.50	40.89	1.610	48.26	1.900	3.683 +0.51	0.145 +0.020

Nominal Size		Pulled Tensile	
mm	in	N	lbs
31.75	1.25	3322	747
38.1	1.50	3972	893

Marking:

As specified in NEMA Standard Publication No. TC-7, the duct shall be clearly and durably marked at least every 3.05 meters (10 feet) with the material designation (HDPE for high density polyethylene), nominal size of the duct and the name and/or trademark of the manufacturer.

Performance Tests:

Polyethylene Duct testing procedures and test results shall meet the requirements of UL 651. Certified copies of the test report shall be submitted to the Engineer prior to the installation of the duct. Duct crush test results shall meet or exceed the following requirements:

Duct Diameter		**Min. force required to deform sample 50%**	
mm	in	N	lbs
35	1.25	4937	1110
41	1.5	4559	1025

UNDERGROUND RACEWAYS:
Effective: January 1, 2012

Revise Article 810.04 of the Standard Specifications to read:

"Installation. All underground conduit shall have a minimum depth of 30-inches (700 mm) below the finished grade."

Add the following to Article 810.04 of the Standard Specifications:

"All metal conduit installed underground shall be Rigid Steel Conduit unless otherwise indicated on the plans."

Add the following to Article 810.04 of the Standard Specifications:

"All raceways which extend outside of a structure or duct bank but are not terminated in a cabinet, junction box, pull box, handhole, post, pole, or pedestal shall extend a minimum or 300 mm (12") or the length shown on the plans beyond the structure or duct bank. The end of this extension shall be capped and sealed with a cap designed for the conduit to be capped. The ends of rigid metal conduit to be capped shall be threaded, the threads protected with full

galvanizing, and capped with a threaded galvanized steel cap. The ends of rigid nonmetallic conduit and coilable nonmetallic conduit shall be capped with a rigid PVC cap of not less than 3 mm (0.125") thick. The cap shall be sealed to the conduit using a room-temperature-vulcanizing (RTV) sealant compatible with the material of both the cap and the conduit. A washer or similar metal ring shall be glued to the inside center of the cap with epoxy, and the pull cord shall be tied to this ring."

Add the following to Article 810.04(c) of the Standard Specifications:

"Coilable non-metallic conduit shall be machine straightened to remove the longitudinal curvature caused by coiling the conduit onto reels prior to installing in trench, encasing in concrete or embedding in structure. The straightening shall not deform the cross-section of the conduit such that any two measured outside diameters, each from any location and at any orientation around the longitudinal axis along the conduit differ by more than 6 mm (0.25")." The longitudinal axis of the straightened conduit shall not deviate by more than 20 mm per meter (0.25" per foot" from a straight line. The HDPE and straightening mechanism manufacturer operating temperatures shall be followed.

LUMINAIRE, SODIUM VAPOR, HORIZONTAL MOUNT, 150 WATT:

This work shall be performed in accordance with Section 821 of the Standard Specifications insofar as applicable and as detailed on the plans, except as modified herein.

This work shall consist of furnishing luminaire with horizontal mount 150 watt high pressure sodium (HPS) lamp, and 240 volt ballast as detailed on the Plans.

The luminaire shall have a gray powder coat finish.

The luminaire shall be as manufactured by GE Lighting Systems, Catalog No. M2AR15S0A1GMS31UF or approved equal.

Basis of Payment: This work will be paid for at the contract unit price per each for LUMINAIRE, SODIUM VAPOR, HORIZONTAL MOUNT, 150 WATT, which price shall include all labor, equipment, materials, and incidental expenses as necessary to furnish the luminaire including lamp.

LIGHTING CONTROLLER, BASE MOUNTED, 240VOLT, 100AMP:

This work shall be done in accordance with Section 825 of the Standard Specifications insofar as applicable, except as modified herein.

This work shall consist of furnishing a lighting controller and foundation as detailed on the Plans.

The exterior finish of the controller shall be baked alkali enamel over cleaned and phosphatized surfaces. The finish paint shall be ANSI Standard No. 70, Sky Gray. A color sample shall be submitted for approval.

The conduit used in the foundation shall be Schedule 40 PVC conduit as detailed on the Plans.

Basis of Payment: This work will be paid for at the contract unit price per each for LIGHTING CONTROLLER, BASE MOUNTED, 240VOLT, 100AMP, which price shall include all labor, equipment, materials, and incidental expenses as necessary to furnish the controller.

LIGHT POLE, ALUMINUM, 30 FT. M.H., 8 FT. MAST ARM:

This work shall be performed in accordance with Section 830 of the Standard Specifications insofar as applicable and as detailed on the Plans, except as modified herein.

This work shall consist of furnishing an aluminum light pole with accessories as detailed on the Plans.

POLE - round tapered spun aluminum pole with flush covered 4" x 6" handhole, cast aluminum anchor base circumferentially welded to the shaft, aluminum nut covers, ground connector, as manufactured by Valmont, Catalog No. 2708-40705T4--DNASBF or approved equal.

TRUSS ARM – clamp-on double 8 foot long aluminum arms, as manufactured by Valmont, Catalog No. 1TA0832C or approved equal.

Light poles 15

The light pole and accessories shall have a natural finish.

Basis of Payment: This work will be paid for at the contract unit price per each for LIGHT POLE, ALUMINUM, 30 FT. M.H., 8 FT. MAST ARM, which price shall include all labor, equipment,

materials, and incidental expenses as necessary to furnish the pole, pole wire, ballast, fuse holders, fusing, luminaire arms, base, bolts, nuts, and washers, etc.

LIGHT POLE, SPECIAL:

(2) LUMINAIRE, HORIZONTAL MOUNT, HPS, 150 WATT:

This work shall be performed in accordance with Section 821 of the Standard Specifications insofar as applicable and as detailed on the plans, except as modified herein.

This work shall consist of furnishing luminaire with horizontal mount 150 watt high pressure sodium (HPS) lamp, and 240 volt ballast as detailed on the Plans.

The luminaire shall have a gray powder coat finish.

The luminaire shall be as manufactured by GE Lighting Systems, Catalog No. M2AR15S0A1GMS31UF or approved equal.

LIGHT POLE, ALUMINUM, DOUBLE 8' TRUSS ARMS, CLAMP ON, 30' M.H.

This work shall be performed in accordance with Section 830 of the Standard Specifications insofar as applicable and as detailed on the Plans, except as modified herein.

This work shall consist of furnishing an aluminum light pole with accessories as detailed on the Plans and as follows;

POLE - round tapered spun aluminum pole with flush covered 4" x 6" handhole, cast aluminum anchor base circumferentially welded to the shaft, aluminum nut covers, ground connector, as manufactured by Valmont, Catalog No. 2708-45805T4--DNASBF or approved equal.

TRUSS ARM – clamp-on double 8 foot long aluminum arms, as manufactured by Valmont, Catalog No. 2TA0832C or approved equal.

Light poles shall be UL classified and designed to current AASHTO standards for 90 mph wind, 3 second gusts, and minimum 50 year life.

The light pole and accessories shall have a natural finish.

Basis of Payment: This work will be paid for at the contract unit price each for LIGHT POLE, SPECIAL, which price shall include all labor, equipment, materials, and incidental expenses as necessary to furnish the luminaire and pole including lamps, pole wire, ballast, fuse holders, fusing, davit arm, bolts, nuts, and washers.

LIGHT POLE FOUNDATION, 24" DIAMETER, OFFSET

This work shall be performed in accordance with Section 836 of the Standard Specifications insofar as applicable, except as modified herein.

The conduit used in the foundation shall be Schedule 40 PVC conduit as detailed on the Plans.

Basis of Payment: This work will be paid for at the contract unit price per foot for LIGHT POLE FOUNDATION, 24" DIAMETER, OFFSET, which price shall include all labor, equipment, materials, and incidental expenses as necessary to complete the work as specified and as indicated on the Plans.

ELECTRIC SERVICE INSTALLATION:
Effective: January 1, 2012

Description. This item shall consist of all material and labor required to extend, connect or modify the electric services, as indicated or specified, which is over and above the work performed by the utility. Unless otherwise indicated, the cost for the utility work, if any, will be reimbursed to the Contractor separately under ELECTRIC UTILITY SERVICE CONNECTION. This item may apply to the work at more than one service location and each will be paid separately.

Materials. Materials shall be in accordance with the Standard Specifications.

CONSTRUCTION REQUIREMENTS

General. The Contractor shall ascertain the work being provided by the electric utility and shall provide all additional material and work not included by other contract pay items required to complete the electric service work in complete compliance with the requirements of the utility.

No additional compensation will be allowed for work required for the electric service, even though not explicitly shown on the Drawings or specified herein

Method Of Measurement. Electric Service Installation shall be counted, each.

Basis Of Payment. This work will be paid for at the contract unit price each for ELECTRIC SERVICE INSTALLATION which shall be payment in full for the work specified herein.

ELECTRIC UTILITY SERVICE CONNECTION (ComEd):

Description. This item shall consist of payment for work performed by ComEd in providing or modifying electric service as indicated. THIS MAY INVOLVE WORK AT MORE THAN ONE ELECTRIC SERVICE. For summary of the Electrical Service Drop Locations see the schedule contained elsewhere herein.

CONSTRUCTION REQUIREMENTS

General. It shall be the Contractor's responsibility to contact ComEd. The Contractor shall coordinate his work fully with the ComEd both as to the work required and the timing of the installation. No additional compensation will be granted under this or any other item for extra work caused by failure to meet this requirement. **Please contact ComEd, New Business Center Call Center, at 866 NEW ELECTRIC (1-866-639-3532) to begin the service connection process. The Call Center Representatives will create a work order for the service connection. The representative will ask the requestor for information specific to the request. The representative will assign the request based upon the location of project.**

The Contractor should make particular note of the need for the earliest attention to arrangements with ComEd for service. In the event of delay by ComEd, no extension of time will be considered applicable for the delay unless the Contractor can produce written evidence of a request for electric service within 30 days of execution.

Method Of Payment. The Contractor will be reimbursed to the exact amount of money as billed by ComEd for its services. Work provided by the Contractor for electric service will be paid separately as described under ELECTRIC SERVICE INSTALLATION. No extra compensation shall be paid to the Contractor for any incidental materials and labor required to fulfill the requirements as shown on the plans and specified herein.

For bidding purposes, this item shall be estimated at $2,000.00.

Basis Of Payment. This work will be paid for at the contract lump sum price for ELECTRIC UTILITY SERVICE CONNECTION which shall be reimbursement in full for electric utility service charges.

PEDESTRIAN ACTIVATED CROSSWALK WARNING SYSTEM:

Description: This work shall be performed in accordance with the applicable portions of Sections 702, 801, and 806 of the Standard Specifications insofar as applicable, and the latest edition of the MUTCD except as modified herein. This works consists of furnished and installing a photovoltaic (solar) powered Rectangular Rapid Flashing Beacon system complete in place.

Solar Electric System Design The solar electric system shall be designed to act as a standalone power source for the system. It shall be designed for a flashing output for 25 seconds with a duty cycle of 50 calls per day at the location shown in the plans in the month with the lowest solar radiation. Loading shall be calculated based on the maximum power consumption of each individual component. . If a manufacturer provides a range of power consumption for an item, the largest possible value of the load shall be used for design purposes. The projected days of autonomy shall be no less than 5 days. The projected battery state-of-charge (SOC) shall be no less than 85% throughout the year. The minimum acceptable array to load ratio shall be 1.1 in the month with the lowest solar radiation.

System deratings shall be accounted for in the design to cover any losses from module output mismatch loss, dirt/dust accumulation losses and wiring losses.

Solar Electric Modules and Mounting Structures: The module cells shall feature an antireflective coating and a low iron glass covering. Cells shall be encapsulated to protect them from the environment. Each module shall feature a weather tight junction box for connecting the array output cable to the module terminals. Modules shall feature a minimum manufactures warranty of 15 years for power output. All modules shall feature an anodized aluminum frame for mechanical support. Modules shall be from an established manufacturer/supplier with at least a 15 year history of production.

Solar modules shall be securely mounted to a suitable top of pole or side of pole mount structure that has been specifically designed to hold solar modules. All hardware used to install the modules to the mounts and the mount to the pole and all security hardware shall be stainless steel. Any specialty tools required for the security hardware shall be furnished to the Village. Mounts shall be powder coated or hot dip galvanized steel. Mill finished or powder coated aluminum mounts are considered acceptable alternates for smaller solar arrays (40W or less).

Solar/Flasher Controls: The system shall feature an integrated control unit. The controller shall be a solid-state unit capable of managing battery charging and load/flasher control in a single unit. Charge control/flasher circuitry built from multiple components will not be allowed.

The charge control portion shall be designed such that it draws low power to minimize the parasitic load on the system. The unit shall use an ambient temperature sensor to adjust the charge termination point thus prolonging battery life (temperature compensated charging). The charge circuit shall also employ a pulse-width-modulation algorithm for charging the batteries and be a solid-state series switch type configuration.

Load/flasher control shall be accomplished using a low-voltage-disconnect (LVD) circuit to disconnect power to the flasher control circuit when battery voltage falls to a low state-of-charge (typically 20%). The flasher circuitry shall be all solid-state and provide two complimentary drive outputs. When flashing, the unit shall have an output duty cycle of 50% per circuit and shall be capable of 50-60 flashes per minute for each lamp. On board short circuit protection shall be provided.

An 8-position terminal block with all positions labeled for ease of maintenance shall be included. Manual switches shall be provided to select the lamp activation source as either manual On or control from an external source. A status LED for charging and LVD shall be included on the face of the controller. The controller shall include an integral heat sink.

Spread Spectrum Radio Link: The crosswalk flasher units shall be linked to each other using a spread spectrum radio link (900-930Mhz operating frequency). The radio shall have an output of no less than 4-milliwatt and shall not require a license for operation. The radio shall operate from a nominal 12VDC source and include a status LED lamp to indicate power on. The radio shall also include transmit-receive status LED lamps to show message traffic between units. The radio shall use a Frequency Hopping Spread Spectrum (FHSS) radio protocol. The minimum antenna configuration shall be an omni directional whip with a stainless steel mounting bracket. A data cable between the radio and the logic control unit shall be included. In the event that multiple systems are collocated, the radio hop sequence shall be field adjustable with programming software, straight data cable and a laptop computer. Changing hop sequences between collocated systems shall ensure that all can function without cross interference. Additionally the radio shall be capable of using up to two additional levels of encryption including DT address settings to further encrypt data transfer.

Logic Control Unit: The system shall be equipped with a logic control device consisting of a PLC type device. The logic control device shall include input status indicators consisting of LED lamps. The device shall also include status indicators consisting of LED lamps showing run,

power and error status indicators. The control device shall include a data cable to allow connection between its communications port and the radio. The logic device shall have a minimum of 4 dry contact output relays with a minimum output rating of .5A.

The software for the logic control device shall allow the user to adjust the run time of the flashers from a minimum run time of 10 seconds to a maximum of 80 seconds. A set of toggle switches on the electronics panel shall allow the user to set the time. Toggle switches in the ON position shall be indicated by an input status LED lamp. A TEST button shall also be included with the time selection switches to allow each flasher unit to be tested individually. The software shall include a communications fault routine that causes the lamps to flash intermittently in the event that the radios lose link with each other. The controller shall also have an input dedicated to monitoring the battery. The logic devices shall be configured as a master-slave system using a MODBUS protocol for operation.

PED Push Button: The PED push button shall be a vandal resistant unit. It shall have minimal travel and include both a visible and audible feedback to indicate when the button is pressed. Visible feedback shall be a high intensity LED built into the unit and the audible feedback shall be a piezo beeper. The button assembly shall include a minimum of a 5"x 7" adjustable push button station assembly with an international crossing sign mounted on it showing the direction of travel desired. The Polara Bulldog button is considered an acceptable device.

System Batteries: The system shall come equipped with the number and type of batteries required for loading. The battery type shall be a sealed-maintenance free valve-regulated design. The battery shall use an Absorbed Glass Mat (AGM) to suspend the electrolyte making it immobile. Alternately the battery may be a gel type that employs a thixotropic gel to immobilize the electrolyte. Acceptable battery sizes shall be group U1, 22, 24, 27 and group 31. Capacity of the batteries at 25^{o}C shall be 36Ah to 115Ah, respectively, at the C/100 rate depending on battery size. Batteries shall use a copolymer polypropylene case and cover. Non-removable pressure regulated flame arresting safety valves shall be standard. Rated operating temperature shall be from –40^{o}C to 72^{o}C. Batteries shall also feature a low self-discharge rate of approximately 1% per month at 25^{o}C.

System Enclosure: The system shall include a single pre-wired enclosure for ease of installation. The unit shall be an aluminum enclosure with a minimum material thickness of 0.125". The cabinet shall have a mill finish. Mounts shall be included as part of the enclosure and shall be suitable for mounting to a 4.5" outer diameter pole. The enclosure shall also be

capable of accepting band style mounts if needed. The enclosure shall feature a minimum of one police lock with key. The keyhole for the lock shall have a cover attached to the door with a rivet. The door shall be attached to the unit using a continuous stainless steel hinge that is riveted to the door and the enclosure body. The hinges shall be installed such that the rivets are not exposed when the door is closed. An integral rigid door stop shall be included in the unit so that the door can be fixed in the open position. The door shall cover the entire front side of the cabinet and be constructed of a single piece of aluminum. It shall have a neoprene gasket around the entire edge of the door and have three screened louvered vents on each side of each compartment. The louver screening shall be aluminum for longevity. An integral rain lip shall also be provided at the top of the main cabinet body to minimize entry of rain. An adjustable latch striker shall be included in the side of the main cabinet body to allow the user to adjust the pressure between the door gasket and the body of the cabinet.

The battery compartment shall have a minimum of ½" of styrofoam sheeting around the battery to minimize heat transfer between the battery and the wall of the enclosure. The name of the system manufacturer shall be stamped on the inside of the enclosure door along with a phone number for troubleshooting assistance.

System Wiring: All systems shall feature a color coded wiring harness for both the lamps and the solar array output. The lamp harness shall consist of a wiring assembly suitable for use with a two lamp system to be installed on a 15' pole. The harness shall be color coded for ease of connection to the lamps. A seven pin keyed locking connector shall be included in the harness to allow the lamps to be disconnected from the control electronics. An integral fuse assembly shall be included in the Lamp positive wire of the harness. All connections shall be terminated with a crimped spade terminal for easy installation. Wire for the harness shall be TEW or MTW.

The solar array output harness shall consist of a jacketed pair of conductors suitable for the solar array output current. The jacket shall be a UV resistant PVC or XLP material. Spade terminals shall be included for ease of installation.

Systems using solar arrays over 225-watts shall include supplemental harnesses for any additional electronics needed for power control. Supplemental harness assemblies shall also be keyed to prevent confusion in the connector orientation.

RRFB LED Lamp Assemblies: The RRFB assembly shall be constructed on an aluminum frame with a minimum cross section of 2x4" and a width of 24" facing traffic. The lamp assembly shall contain 2 2x5" lamps. All lamps shall operate from a nominal 12VDC supply and employ high intensity LED elements. All lamp elements used in the RRFB beacon kits shall comply with

SAE J845 and J1889. The frame shall have a black finish on the faces that feature RRFB lamps and non-lamp faces shall be mill finished aluminum. Assemblies featuring pedestrian confirmation lamps on the end cap shall use a high bright LED lamp assembly with a minimum of at least 1 high intensity lamp. The end caps shall be recessed a minimum of 0.75" from the end of the frame to act as a protective shroud for the end cap lamp(s). Standard units shall include a saddle style mount for a pole of 4.5" O.D and shall be adaptable to round pole mounts as small as 3" O.D. The RRFB lamp assembly shall have two lamps on the front and rear face of the RRFB frame facing traffic, and dual pedestrian end cap lamps

All units shall include a color-coded wiring harness to connect into the main harness coming from the system enclosure. The RRFB side of the harness shall be terminated in a keyed connector with six male pins. Hardware to install the RRFB shall be stainless steel.

Posts: Posts shall be UL classified and designed to current AASHTO standards for 90 mph wind, 3 second gusts, and minimum 50 year life with all attached components and shall come with a shroud or aluminum nut covers and ground connector.. Post length shall be in accordance with the MUTCD for proper RRFB and sign mounting height and the manufacturer's recommendations.

Foundations: 24" diameter concrete foundations shall be constructed in accordance with the lighting foundation detail in the plans.

Signs: Each post shall have a pedestrian/bicycle crossing sign (W11-15, 36" x 36") and a diagonal arrow plaque (W16-7P, 24" x 12") mounted on both sides of the post facing traffic.

Acceptable Manufactures: Solar Traffic Controls – RRFB Type 5 – 2x5" lamps front/back with end cap lamp, or approved equal.

Warranty: The entire installation shall come with a three year warranty including labor, equipment and materials, unless otherwise specified longer in this special provision. The warranty period will begin on the date of Final Acceptance of the work. Contractor shall provide the Village with a hard copy of the warranty.

Documentation: Each system shall come with a complete installation and user's guide. Minimum information to be covered shall be as follows:

1. Description of all the system components and their basic function.

2. Installation of a typical system including sections specifically covering pole

installation, all aspects of installation of the solar power system and LED lamp installation.

3. Troubleshooting and maintenance of the system.
4. Complete appendices on all of the components used in the system.
5. Quick start timer programming instructions.
6. Complete drawings or illustrations throughout to support and clarify the text.
7. Phone/FAX numbers for technical support of the system

Method of Measurement: This work will be measured for payment for each crosswalk system installed.

Basis of Payment: This work will be paid for at the contract unit price per each for PEDESTRIAN ACTIVATED CROSSWALK WARNING SYSTEM which price shall include all labor, equipment, materials, and incidental expenses necessary to furnish the components, signs, posts, foundations hardware, cables, connectors, and brackets necessary for installation of the system on both sides of the road.

DECORATIVE CROSSWALK

DESCRIPTION: The work will be described as hot-applied stamped synthetic crosswalk pavement material. The stamped patterned treatment shall be applied according to the manufacturer's specifications, as amended in these specifications and as shown on the plans. For the purpose of this specification, patterns are defined as palpable surface markings. Joint openings shall not exceed three quarters of one inch in width.

MATERIALS: Hot-applied stamped synthetic crosswalk pavement material consists of stamping a hot resin-based compound to create the appearance of hand-laid decorative paving products. The hot applied polymer modified synthetic asphalt surface treatment incorporates polymers, binder resin, aggregates and fibers laid at approx 3/4 inch thick with integral color throughout.

Acceptable manufacturers include:

Traffic Management USA, LLC

110 Thompson Rd, Suite 102-A
Hiram, Georgia USA 30141
Office: 770-505-4044
http://www.trafficmgmtusa.com/

Color and pattern to be used will be identified in the plans or by the Village.

Meet manufacturer's specifications for all pattern/texture templates, coating and coloring materials. Use only material that is delivered to the job site in sealed containers bearing the manufacturer's original labels. The manufacturer should certify that they have tested the material in place in accordance with ASTM E-274, Skid Resistance of Paved Surfaces Using a standard ribbed full Scale Tire at a speed of 40 mph (FN40R) and has a minimum FN40R value of 35.

MATERIAL ACCEPTANCE: The Contractor must provide a Manufacturer's written certification that the material complies with these specifications.

CONSTRUCTION REQUIREMENTS: When installing onto asphalt, the surface shall be compacted by traffic and the asphalt oils dispersed to avoid transmission to the decorative crosswalk surface.

Saw cut area to be imprinted along border of entire application area. Remove a depth of 0.75" or as required per manufacturer's specifications, of HMA surface in application area.

Site conditions shall be dry before installing decorative crosswalk. The surface may be dried with propane to ensure dry conditions. After placing and while the material is still molten, a specially designed stamp is placed into the material to form a pattern. Pattern shall be consistent with design shown in the plans or approved equal. Engineer shall approve custom stamp prior to installation. Finish grade of decorative crosswalk shall be flush with adjacent paving surfaces.

Protect treated surfaces from traffic and environmental effects until the area is completely coated/imprinted, and material has dried or cured according to the manufacturer's instructions.

Complete all utility, traffic loop detector, and other items requiring a cut and installation under the finished surface, prior to pattern installation.

At crosswalk locations with handicap access, application must be placed to ensure the transition between the textured pavement and curb and gutter meet current local, state and federal guidelines. Failure to comply, as determined by the Engineer, will result in removal and replacement of the entire textured area at no additional cost.

Upon completion of the installation, the Engineer will check the area at random locations for geometric accuracy, as specified in the plans. If any of the chosen areas have an imprint depth that is less than the manufacturer's specifications, correct the entire textured area, at no additional cost.

Supply the specified color chips for the Engineer's use to visually determine that the material matches the color specified in the plans or by the Village. For any continuous or touching area, i.e. all treated areas of an intersection, color materials must be from the same lot/batch.

WARRANTY: Manufacturer must provide warranty that material will maintain a depth of at least 50% of the original installed depth and width, and that the color will be maintained with normal use for period of two (2) years. The warranty period will begin on the date of Final Acceptance of the work. Contractor shall provide Owner with a hard copy of warrantee.

MEASUREMENT: The quantity to be paid will be the area in square feet of DECORATIVE CROSSWALK, measured in place, completed and accepted. No deduction will be made for the area(s) occupied by manholes, inlets, drainage structures, or by any public utility appurtenances within the asphalt area. Asphalt or concrete materials placed prior to treatment will be paid separately under the appropriate pay items. Milling required for the placement of patterned/textured pavement will be included in the cost of the patterned/textured pavement.

BASIS OF PAYMENT: This work will be paid for at the contract unit price per square foot for DECORATIVE CROSSWALK which price will be payment in full for completing the work as described herein including milling required for placement and surface materials including colors, sealers, and/or resins.

FINE AGGREGATE FOR HOT- MIX ASPHALT (HMA) (D-1):
Effective: May 1, 2007
Revised: January 1, 2012

Revise Article 1003.03 (c) of the Standard Specifications to read:

"(c) Gradation. The fine aggregate gradation for all HMA shall be FA1, FA 2, FA 20, FA 21

or FA 22. When Reclaimed Asphalt Pavement (RAP) is incorporated in the HMA design, the use of FA 21 Gradation will not be permitted.

FRICTION SURFACE AGGREGATE (D1):

Effective: January 1, 2011
Revised: January 24, 2013

Revise Article 1004.01(a)(4) of the Standard Specifications to read:

"(4) Crushed Stone. Crushed stone shall be the angular fragments resulting from crushing undisturbed, consolidated deposits of rock by mechanical means. Crushed stone shall be divided into the following, when specified.

a. Carbonate Crushed Stone. Carbonate crushed stone shall be either dolomite or limestone. Dolomite shall contain 11.0 percent or more magnesium oxide (MgO). Limestone shall contain less than 11.0 percent magnesium oxide (MgO).

b. Crystalline Crushed Stone. Crystalline crushed stone shall be either metamorphic or igneous stone, including but is not limited to, quartzite, granite, rhyolite and diabase."

Revise Article 1004.03(a) of the Standard Specifications to read:

"1004.03 **Coarse Aggregate for Hot-Mix Asphalt (HMA).** The aggregate shall be according to Article 1004.01 and the following revisions.

(a) Description. The coarse aggregate for HMA shall be according to the following table.

Use	Mixture	Aggregates Allowed

Use	Mixture	Aggregates Allowed
Class A	Seal or Cover	Allowed Alone or in Combination: Gravel Crushed Gravel Carbonate Crushed Stone Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Steel Slag Crushed Concrete
HMA All Other	Shoulders	Allowed Alone or in Combination: Gravel Crushed Gravel Carbonate Crushed Stone Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) 1/ Crushed Steel Slag 1/ Crushed Concrete
HMA High ESAL Low ESAL	C Surface IL-12.5,IL-9.5, or IL-9.5L	Allowed Alone or in Combination: Crushed Gravel Carbonate Crushed Stone Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) 1/ Crushed Steel Slag 1/ Crushed Concrete

<table>
<tr><th>Use</th><th>Mixture</th><th colspan="2">Aggregates Allowed</th></tr>
<tr><td rowspan="5">HMA
High ESAL</td><td rowspan="5">D Surface
IL-12.5 or
IL-9.5</td><td colspan="2"><u>Allowed Alone or in Combination:</u>
Crushed Gravel
Carbonate Crushed Stone (other than Limestone)
Crystalline Crushed Stone
Crushed Sandstone
Crushed Slag (ACBF) 1/
Crushed Steel Slag 1/
Crushed Concrete</td></tr>
<tr><td colspan="2"><u>Other Combinations Allowed:</u></td></tr>
<tr><td>Up to...</td><td>With...</td></tr>
<tr><td>25% Limestone</td><td>Dolomite</td></tr>
<tr><td>50% Limestone</td><td>Any Mixture D aggregate other than Dolomite</td></tr>
<tr><td></td><td></td><td>75% Limestone</td><td>Crushed Slag (ACBF) 1/ or Crushed Sandstone</td></tr>
</table>

<table>
<tr><th>Use</th><th>Mixture</th><th>Aggregates Allowed</th></tr>
<tr><td rowspan="4">HMA
High ESAL</td><td rowspan="4">F Surface
IL-12.5 or
IL-9.5</td><td><u>Allowed Alone or in Combination:</u>

Crystalline Crushed Stone
Crushed Sandstone
Crushed Slag (ACBF)[1/]
Crushed Steel Slag[1/]

No Limestone or no Crushed Gravel alone.</td></tr>
<tr><td><u>Other Combinations Allowed:</u></td></tr>
<tr><td>Up to...</td><td>With...</td></tr>
<tr><td>50% Crushed Gravel, or Dolomite</td><td>Crushed Sandstone, Crushed Slag (ACBF)[1/], Crushed Steel Slag[1/], or Crystalline Crushed Stone</td></tr>
<tr><td>HMA
High ESAL</td><td>SMA
Ndesign 80
Surface</td><td>Crystalline Crushed Stone
Crushed Sandstone
Crushed Steel Slag[1/]</td></tr>
</table>

1/ When either slag is used, the blend percentages listed shall be by volume.

Add to Article 1004.03 (b) of the Standard Specifications to read:

" When using Crushed Concrete, the quality shall be determined as follows. The Contractor shall obtain a representative sample from the stockpile, witnessed by the Engineer, at a frequency of 2500 tons (2300 metric tons). The sample shall be a minimum of 50 lb (25 kg). The Contractor shall submit the sample to the District Office. The District will forward the sample to the BMPR Aggregate Lab for MicroDeval Testing, according to Illinois Modified AASHTO T 327. A maximum loss of 15.0 percent by weight will be applied for acceptance. The stockpile shall be sealed until test results are complete and found to meet the specifications above."

RECLAIMED ASPHALT PAVEMENT AND SHINGLES (D-1):

Effective: November 1, 2012
Revise: January 1, 2013

Revise Section 1031 of the Standard Specifications to read:

"SECTION 1031. RECLAIMED ASPHALT PAVEMENT AND RECLAIMED ASPHALT SHINGLES

1031.01 Description. Reclaimed asphalt pavement and reclaimed asphalt shingles shall be according to the following.

(a) Reclaimed Asphalt Pavement (RAP). RAP is the material resulting by cold milling or crushing an existing hot-mix asphalt (HMA) pavement. RAP will be considered processed FRAP after completion of both crushing and screening to size. The Contractor shall supply written documentation that the RAP originated from routes or airfields under federal, state, or local agency jurisdiction.

(b) Reclaimed Asphalt Shingles (RAS). Reclaimed asphalt shingles (RAS). RAS is from the processing and grinding of preconsumer or post-consumer shingles. RAS shall be a clean and uniform material with a maximum of 0.5 percent unacceptable material, as defined in Bureau of Materials and Physical Research Policy Memorandum "Reclaimed Asphalt Shingle (RAS) Sources", by weight of RAS. All RAS used shall come from a Bureau of Materials and Physical Research approved processing facility where it shall be ground and processed to 100 percent passing the 3/8 in. (9.5 mm) sieve and 90 percent passing the #4 (4.75 mm) sieve . RAS shall meet the testing requirements specified herein. In addition, RAS shall meet the following Type 1 or Type 2 requirements.

(1) Type 1. Type 1 RAS shall be processed, preconsumer asphalt shingles salvaged from the manufacture of residential asphalt roofing shingles.

(2) Type 2. Type 2 RAS shall be processed post-consumer shingles only, salvaged from residential, or four unit or less dwellings not subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP).

1031.02 Stockpiles. RAP and RAS stockpiles shall be according to the following.

(a) RAP Stockpiles. The Contractor shall construct individual, sealed RAP stockpiles meeting one of the following definitions. No additional RAP shall be added to the pile after the pile has been sealed. Stockpiles shall be sufficiently separated to prevent intermingling at the base. All stockpiles (including unprocessed RAP and Processed FRAP) shall be identified by signs indicating the type as listed below (i.e. "Non- Quality, FRAP -#4 or Type 2 RAS", etc...).

(1) Fractionated RAP (FRAP). FRAP shall consist of RAP from Class I, Superpave HMA (High and Low ESAL) or equivalent mixtures. The coarse aggregate in FRAP shall be crushed aggregate and may represent more than one aggregate type and/or quality but shall be at least C quality. All FRAP shall be processed prior to testing sized into fractions with the separation occurring on or between the #4 (4.75 mm) and 1/2 in. (12.5 mm) sieves. Agglomerations shall be minimized such that 100 percent of the RAP in the coarse fraction shall pass the maximum sieve size specified for the mix the RAP will be used in.

(2) Restricted FRAP (B quality) stockpiles shall consist of RAP from Class I, Superpave (High ESAL), or HMA (High ESAL). If approved by the Engineer, the aggregate from a maximum 3.0 inch single combined pass of surface/binder milling will be classified as B quality. All millings from this application will be processed into FRAP as described previously.

(3) Conglomerate. Conglomerate RAP stockpiles shall consist of RAP from Class I, Superpave HMA (High and Low ESAL) or equivalent mixtures. The coarse aggregate in this RAP shall be crushed aggregate and may represent more than one aggregate type and/or quality but shall be at least C quality. This RAP may have an inconsistent gradation and/or asphalt binder content prior to processing. All conglomerate RAP shall be processed (FRAP) prior to testing. Conglomerate RAP stockpiles shall not contain steel slag or other expansive material as determined by

the Department.

(4) Conglomerate "D" Quality (DQ). Conglomerate DQ RAP stockpiles shall consist of RAP from from HMA shoulders, bituminous stabilized subbases or Superpave (Low ESAL)/HMA (Low ESAL) IL-19.0L binder mixture. The coarse aggregate in this RAP may be crushed or round but shall be at least D quality. This RAP may have an inconsistent gradation and/or asphalt binder content. Conglomerate DQ RAP stockpiles shall not contain steel slag or other expansive material as determined by the Department.

(5) Non-Quality. RAP stockpiles that do not meet the requirements of the stockpile categories listed above shall be classified as "Non-Quality".

RAP/FRAP containing contaminants, such as earth, brick, sand, concrete, sheet asphalt, bituminous surface treatment (i.e. chip seal), pavement fabric, joint sealants, plant cleanout etc., will be unacceptable unless the contaminants are removed to the satisfaction of the Engineer. Sheet asphalt shall be stockpiled separately.

(b) RAS Stockpiles. The Contractor shall construct individual, sealed RAS stockpiles meeting one of the following definitions. No additional RAS shall be added to the pile after the pile has been sealed. Type 1 and Type 2 RAS shall be stockpiled separately and shall be sufficiently separated to prevent intermingling at the base. Each stockpile shall be signed indicating what type of RAS is present.
However, a RAS source may submit a written request to the Department for approval to blend mechanically a specified ratio of type 1 RAS with type 2 RAS. The source will not be permitted to change the ratio of the blend without the Department prior written approval. The Engineer's written approval will be required, to mechanically blend RAS with any fine aggregate produced under the AGCS, up to an equal weight of RAS, to improve workability. The fine aggregate shall be "B Quality" or better from an approved Aggregate Gradation Control System source. The fine aggregate shall be one that is approved for use in the HMA mixture and accounted for in the mix design and during HMA production.

Records identifying the shingle processing facility supplying the RAS, RAS type and lot number shall be maintained by project contract number and kept for a minimum of three years.

1031.03 Testing. RAP/FRAP and RAS testing shall be according to the following.

(a) RAP/FRAP Testing. When used in HMA, the RAP/FRAP shall be sampled and tested either during processing or after stockpiling.

(1) During Stockpiling. For testing during stockpiling, washed extraction samples shall be run at the minimum frequency of one sample per 500 tons (450 metric tons) for the first 2000 tons (1800 metric tons) and one sample per 2000 tons (1800 metric tons) thereafter. A minimum of five tests shall be required for stockpiles less than 4000 tons (3600 metric tons).

(2) After Stockpiling. For testing after stockpiling, the Contractor shall submit a plan for approval to the District proposing a satisfactory method of sampling and testing the RAP/FRAP pile either in-situ or by restockpiling. The sampling plan shall meet the minimum frequency required above and detail the procedure used to obtain representative samples throughout the pile for testing.

Before extraction, each field sample whether RAP or FRAP, shall be split to obtain two samples of test sample size. One of the two test samples from the final split shall be labeled and stored for Department use. The Contractor shall extract the other test sample according to Department procedure. The Engineer reserves the right to test any sample (split or Department-taken) to verify Contractor test results.

(b) RAS Testing. RAS shall be sampled and tested either during or after stockpiling.

During stockpiling, washed extraction, and testing for unacceptable materials shall be run at the minimum frequency of one sample per 200 tons (180 metric tons) for the first 1000 tons (900 metric tons) and one sample per 1000 tons (900 metric tons) thereafter. A minimum of five samples are required for stockpiles less than 1000 tons (900 metric tons). Once a ≤ 1000 ton (900 metric ton), five-sample/test stockpile has been established it shall be sealed. Additional incoming RAS shall be stockpiled in a separate working pile as designated in the Quality Control plan and only added to the sealed stockpile when the test results of the working pile are complete and are found to meet the tolerances specified herein for the original sealed RAS stockpile.

Before extraction, each field sample shall be split to obtain two samples of test sample size. One of the two test samples from the final split shall be labeled and stored for Department use. The Contractor shall extract the other test sample according to Department procedures. The Engineer reserves the right to test any sample (split or Department-taken) to verify Contractor test results.

1031.04 Evaluation of Tests. Evaluation of tests results shall be according to the following.

(a) Evaluation of RAP/FRAP Test Results. All of the extraction results shall be compiled and averaged for asphalt binder content and gradation and, when applicable (for slag) G_{mm}. Individual extraction test results, when compared to the averages, will be accepted if within the tolerances listed below.

Parameter	RAP or FRAP	Conglomerate "D" Quality RAP
1 in. (25 mm)		± 5 %
1/2 in. (12.5 mm)	± 8 %	± 15 %
No. 4 (4.75 mm)	± 6 %	± 13 %
No. 8 (2.36 mm)	± 5 %	
No. 16 (1.18 mm)		± 15 %
No. 30 (600 µm)	± 5 %	
No. 200 (75 µm)	± 2.0 %	± 4.0 %
Asphalt Binder	± 0.4 % 1/	± 0.5 %
G_{mm}	± 0.03 2/	

1/ The tolerance for FRAP shall be ± 0.3 %.
2/ For slag and steel slag

If more than 20 percent of the individual sieves and/or asphalt binder content tests are out of the above tolerances, the RAP/FRAP shall not be used in HMA unless the RAP/FRAP representing the failing tests is removed from the stockpile. All test data and acceptance ranges shall be sent to the District for evaluation.

With the approval of the Engineer, the ignition oven may be substituted for extractions according to the Illinois Test Procedure, "Calibration of the Ignition Oven for the Purpose of Characterizing Reclaimed Asphalt Pavement (RAP)".

(b) Evaluation of RAS Test Results. All of the test results, with the exception of percent unacceptable materials, shall be compiled and averaged for asphalt binder content and gradation. Individual test results, when compared to the averages, will be accepted if within the tolerances listed below.

Parameter	RAS
No. 8 (2.36 mm)	± 5 %
No. 16 (1.18 mm)	± 5 %
No. 30 (600 µm)	± 4 %
No. 200 (75 µm)	± 2.0 %
Asphalt Binder Content	± 1.5 %

If more than 20 percent of the individual sieves and/or asphalt binder content tests are out of the above tolerances, the RAS shall not be used in Department projects unless the RAS, RAP or FRAP representing the failing tests is removed from the stockpile. All test data and acceptance ranges shall be sent to the District for evaluation.

1031.05 Quality Designation of Aggregate in RAP/FRAP.

(a) RAP. The aggregate quality of the RAP for homogenous, conglomerate, and conglomerate "D" quality stockpiles shall be set by the lowest quality of coarse aggregate in the RAP stockpile and are designated as follows.

(1) RAP from Class I, Superpave (High ESAL)/HMA (High ESAL), or (Low ESAL) IL-9.5L surface mixtures are designated as containing Class B quality coarse aggregate.

(2) RAP from Superpave (High ESAL)/HMA (Low ESAL) IL-19.0L binder mixture is designated as Class D quality coarse aggregate.

(3) RAP from Class I, Superpave (High ESAL)/HMA (High ESAL) binder mixtures, bituminous base course mixtures, and bituminous base course widening mixtures are designated as containing Class C quality coarse aggregate.

(4) RAP from bituminous stabilized subbase and BAM shoulders are designated as containing Class D quality coarse aggregate.

(b) FRAP. If the Engineer has documentation of the quality of the FRAP aggregate, the Contractor shall use the assigned quality provided by the Engineer.

If the quality is not known, the quality shall be determined as follows. Fractionated RAP stockpiles containing plus #4 (4.75 mm) sieve coarse aggregate shall have a maximum

tonnage of 5,000 tons (4,500 metric tons). The Contractor shall obtain a representative sample witnessed by the Engineer. The sample shall be a minimum of 50 lb (25 kg). The sample shall be extracted according to Illinois Modified AASHTO T 164 by a consultant prequalified by the Department for the specified testing. The consultant shall submit the test results along with the recovered aggregate to the District Office. The cost for this testing shall be paid by the Contractor. The District will forward the sample to the BMPR Aggregate Lab for MicroDeval Testing, according to Illinois Modified AASHTO T 327. A maximum loss of 15.0 percent will be applied for all HMA applications. The fine aggregate portion of the fractionated RAP shall not be used in any HMA mixtures that require a minimum of "B" quality aggregate or better, until the coarse aggregate fraction has been determined to be acceptable thru a MicroDeval Testing.

1031.06 Use of RAS, RAP or FRAP in HMA. The use of RAS, RAP or FRAP shall be a Contractor's option when constructing HMA in all contracts.

(a) RAP/FRAP. The use of RAP/FRAP in HMA shall be as follows.

(1) Coarse Aggregate Size (after extraction). The coarse aggregate in all RAP shall be equal to or less than the nominal maximum size requirement for the HMA mixture to be produced.

(2) Steel Slag Stockpiles. RAP/FRAP stockpiles containing steel slag or other expansive material, as determined by the Department, shall be homogeneous and will be approved for use in HMA (High ESAL and Low ESAL) mixtures regardless of lift or mix type.

(3) Use in HMA Surface Mixtures (High and Low ESAL). RAP/FRAP stockpiles for use in HMA surface mixtures (High and Low ESAL) shall have coarse aggregate that is Class B quality or better. RAP/FRAP shall be considered equivalent to limestone for frictional considerations unless produced/screened to minus 3/8 inch.

(4) Use in HMA Binder Mixtures (High and Low ESAL), HMA Base Course, and HMA Base Course Widening. RAP/FRAP stockpiles for use in HMA binder mixtures (High and Low ESAL), HMA base course, and HMA base course widening shall be FRAP in which the coarse aggregate is Class C quality or better.

(5) Use in Shoulders and Subbase. RAP/FRAP stockpiles for use in HMA shoulders and stabilized subbase (HMA) shall be RAP, Restricted FRAP, conglomerate, or conglomerate DQ.

(b) RAS. RAS meeting Type 1 or Type 2 requirements will be permitted in all HMA applications as specified herein.

(c) RAP/FRAP and/or RAS Usage Limits. Type 1 or Type 2 RAS may be used alone or in conjunction with RAP or FRAP in HMA mixtures up to a maximum of 5.0% by weight of the total mix.

When the Contractor chooses the RAP option, the percentage of the percentage of virgin asphalt binder replaced by the asphalt binder from the RAP shall not exceed the percentages indicated in the table below for a given N Design:

Max Asphalt Binder Replacement RAP Only
Table 1

HMA Mixtures [1/, 2/]	Maximum % Asphpalt Binder replacement (ABR)		
Ndesign	Binder/Leveling Binder	Surface	Polymer Modified
30L	25	15	10
50	25	15	10
70	15	10	10
90	10	10	10
105	10	10	10
4.75 mm N-50			15
SMA N-80			10

1/ For HMA "All Other" (shoulder and stabilized subbase) N-30, the percent asphalt binder replacement shall not exceed 50% of the total asphalt binder in the mixture.

2/ When the asphalt binder replacement exceeds 15 percent, the high and low virgin asphalt binder grades shall each be reduced by one grade (i.e. 25 percent binder replacement would require a virgin asphalt binder grade of PG64-22 to be reduced to a PG58-28). When constructing full depth HMA and the ABR is less than 15 percent,

the required virgin asphalt binder grade shall be PG64-28.

When the Contractor chooses either the RAS or FRAP option, the percent binder replacement shall not exceed the amounts indicated in the tables below for a given N Design.

Max Asphalt Binder Replacement RAS or FRAP
Table 2

HMA Mixtures [1/, 2/]	Level 1 - Maximum % ABR		
Ndesign	Binder/Leveling Binder	Surface	Polymer [3/, 4/] Modified
30L	35	30	15
50	30	25	15
70	30	20	15
90	20	15	15
105	20	15	15
4.75 mm N-50			25
SMA N-80			15

1/ For HMA "All Other" (shoulder and stabilized subbase) N-30, the percent asphalt bider replacement shall not exceed 50% of the total asphalt binder in the mixture.

2/ When the asphalt binder replacement exceeds 15 percent for all mixes, except for SMA and IL-4.75, the high and low virgin asphalt binder grades shall each be reduced by one grade (i.e. 25 percent binder replacement will require a virgin asphalt binder grade of PG64-22 to be reduced to a PG58-28). When constructing full depth HMA and the ABR is less than 15 percent, the required virgin asphalt binder grade shall be PG64-28.

3/ When the ABR for SMA is 15 percent or less, the required virgin asphalt binder grade shall be SBS PG76-22.

4/ When the ABR for IL-4.75 mix is 15 percent or less, the required virgin asphalt binder grade shall be SBS PG76-22. When the ABR for the IL-4.75 mix exceeds 15 percent, the virgin asphalt binder grade shall be SBS PG70-28.

When the Contractor chooses the RAS with FRAP combination, the percent asphalt binder replacement shall split equally between the RAS and the FRAP, and the total replacement shall not exceed the amounts indicated in the tables below for a given N Design.

Max Asphalt Binder Replacement RAS and FRAP Combination
Table 3

HMA Mixtures [1/, 2/]	Level 2 - Maximum % ABR		
Ndesign	Binder/Leveling Binder	Surface	Polymer Modified [3/, 4/]
30L	50	40	30
50	40	35	30
70	40	30	30
90	40	30	30
105	40	30	30
4.75 mm N-50			40
SMA N-80			30

1/ For HMA "All Other" (shoulder and stabilized subbase) N-30, the percent asphalt binder replacement shall not exceed 50% of the total asphalt binder in the mixture.

2/ When the binder replacement exceeds 15 percent for all mixes, except for SMA and IL-4.75, the high and low virgin asphalt binder grades shall each be reduced by one grade (i.e. 25 percent binder replacement will require a virgin asphalt binder grade of PG64-22 to be reduced to a PG58-28).
3/ When the ABR for SMA is 15 percent or less, the required virgin asphalt binder shall be SBS PG76-22. When the ABR for SMA exceeds 15%, the virgin asphalt binder grade shall be SBS PG70-28.

4/ When the ABR for IL-4.75 mix is 15 percent or less, the required virgin asphalt binder grade shall be SBS PG76-22. When the ABR for the IL-4.75 mix exceeds 15 percent, the virgin asphalt binder grade shall be SBS PG70-28.

1031.07 HMA Mix Designs. At the Contractor's option, HMA mixtures may be constructed utilizing RAP/FRAP and/or RAS material meeting the above detailed requirements.

All HMA mixtures will be required to be tested, prior to submittal for Department verification,

according to Illinois Modified AASHTO T324 (Hamburg Wheel) and shall meet the following requirements:

Asphalt Binder Grade	# Repetitions	Max Rut Depth (mm)
PG76-XX	20,000	12.5
PG70-XX	20,000	12.5
PG64-XX	10,000	12.5
PG58-XX	10,000	12.5
PG52-XX	10,000	12.5
PG46-XX	10,000	12.5

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

1031.08 HMA Production. All HMA mixtures shall be sampled 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.

To remove or reduce agglomerated material, a scalping screen, gator, crushing unit, or comparable sizing device approved by the Engineer shall be used in the RAS, RAP and FRAP feed system to remove or reduce oversized material. If material passing the sizing device adversely affects the mix production or quality of the mix, the sizing device shall be set at a size specified by the Engineer.

If the RAS, RAP and FRAP control tolerances or QC/QA test results require corrective action, the Contractor shall cease production of the mixture containing RAs, RAP or FRAP and either switch to the virgin aggregate design or submit a new RAS, RAP or FRAP design.

(a) RAP/FRAP. The coarse aggregate in all RAP/FRAP used shall be equal to or less than the maximum size requirement for the HMA mixture being produced.

(b) RAS. RAS shall be incorporated into the HMA mixture either by a separate weight depletion system or by using the RAP weigh belt. Either feed system shall be

interlocked with the aggregate feed or weigh system to maintain correct proportions for all rates of production and batch sizes. The portion of RAS shall be controlled accurately to within ± 0.5 percent of the amount of RAS utilized. When using the weight depletion system, flow indicators or sensing devices shall be provided and interlocked with the plant controls such that the mixture production is halted when RAS flow is interrupted.

(c) RAS, RAP and FRAP. HMA plants utilizing RAS, RAP and FRAP shall be capable of automatically recording and printing the following information.

(1) Dryer Drum Plants.

a. Date, month, year, and time to the nearest minute for each print.

b. HMA mix number assigned by the Department.

c. Accumulated weight of dry aggregate (combined or individual) in tons (metric tons) to the nearest 0.1 ton (0.1 metric ton).

d. Accumulated dry weight of RAS, RAP and FRAP in tons (metric tons) to the nearest 0.1 ton (0.1 metric ton).

e. Accumulated mineral filler in revolutions, tons (metric tons), etc. to the nearest 0.1 unit.

f. Accumulated asphalt binder in gallons (liters), tons (metric tons), etc. to the nearest 0.1 unit.

g. Residual asphalt binder in the RAS, RAP and FRAP material as a percent of the total mix to the nearest 0.1 percent.

h. Aggregate RAS, RAP and FRAP moisture compensators in percent as set on the control panel. (Required when accumulated or individual aggregate and RAS, RAP and FRAP are printed in wet condition.)

i. When producing mixtures with FRAP and/or RAS, a positive dust control system shall be utilized.

j. Accumulated mixture tonnage.

k. Dust Removed (accumulated to the nearest 0.1 ton)

(2) Batch Plants.

a. Date, month, year, and time to the nearest minute for each print.

b. HMA mix number assigned by the Department.

c. Individual virgin aggregate hot bin batch weights to the nearest pound (kilogram).

d. Mineral filler weight to the nearest pound (kilogram).

f. RAS, RAP and FRAP weight to the nearest pound (kilogram).

g. Virgin asphalt binder weight to the nearest pound (kilogram).

h. Residual asphalt binder in the RAS, RAP and FRAP material as a percent of the total mix to the nearest 0.1 percent.

The printouts shall be maintained in a file at the plant for a minimum of one year or as directed by the Engineer and shall be made available upon request. The printing system will be inspected by the Engineer prior to production and verified at the beginning of each construction season thereafter.

1031.09 RAP in Aggregate Surface Course and Aggregate Shoulders. The use of RAP or FRAP in aggregate surface course and aggregate shoulders shall be as follows.

(a) Stockpiles and Testing. RAP stockpiles may be any of those listed in Article 1031.02, except "Non-Quality" and "FRAP". The testing requirements of Article 1031.03 shall not apply.

(b) Gradation. One hundred percent of the RAP material shall pass the 1 1/2 in. (37.5mm) sieve. The RAP material shall be reasonably well graded from coarse to fine. RAP material that is gap-graded, FRAP, or single sized will not be accepted for use as Aggregate Surface Course and Aggregate Shoulders."

HMA MIXTURE DESIGN REQUIREMENTS (D-1):

Effective: January 1, 2013.
Revised: January 16, 2013

1) Design Composition and Volumetric Requirements

Revise Article 1030.04(a)(1) of the Standard 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-25.0 mm		IL-19.0 mm		IL-12.5 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)		100								
1 in. (25 mm)	90	100		100						
3/4 in. (19 mm)		90	82	100		100				
1/2 in. (12.5 mm)	45	75	50	85	90	100		100		100
3/8 in. (9.5 mm)						89	90	100		100
#4 (4.75 mm)	24	42 [2/]	24	50 [2/]	28	65	28	65	90	100
#8 (2.36 mm)	16	31	20	36	28	48 [3/]	32	52 [3/]	70	90
#16 (1.18 mm)	10	22	10	25	10	32	10	32	50	65
#50 (300 µm)	4	12	4	12	4	15	4	15	15	30
#100 (150 µm)	3	9	3	9	3	10	3	10	10	18
#200 (75 µm)	3	6	3	6	4	6	4	6	7	9
Ratio Dust/Asphalt Binder		1.0		1.0		1.0		1.0		1.0 [4]

1/ Based on percent of total aggregate weight.

2/ The mixture composition shall not exceed 40 percent passing the #4 (4.75 mm) sieve for binder courses with Ndesign ≥ 90.

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

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

Delete Article 1030.04(a)(4) of the Standard Specifications.

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.

VOLUMETRIC REQUIREMENTS High ESAL						
	Voids in the Mineral Aggregate (VMA), % minimum					Voids Filled with Asphalt Binder (VFA), %
Ndesign	IL-25.0	IL-19.0	IL-12.5	IL-9.5	IL-4.75 1/	
50	12.0	13.0	14.0	15	18.5	65 – 78 2/
70						65 - 75
90						
105						

1/ Maximum Draindown for IL-4.75 shall be 0.3%
2/ VFA for IL-4.75 shall be 72-85%"

Delete Article 1030.04(b)(4) of the Standard Specifications.

Revise the Control Limits Table in Article 1030.05(d)(4) of the Standard Specifications to read.

"CONTROL LIMITS					
Parameter	High ESAL Low ESAL Individual Test	High ESAL Low ESAL Moving Avg. of 4	All Other Individual Test	IL-4.75 Individual Test	IL-4.75 Moving Avg. of 4
% Passing: 1/					

1/2 in. (12.5 mm)	± 6 %	± 4 %	± 15 %		
No. 4 (4.75 mm)	± 5 %	± 4 %	± 10 %		
No. 8 (2.36 mm)	± 5 %	± 3 %			
No. 16 (1.18 mm)				± 4 %	± 3 %
No. 30 (600 µm)	± 4 %	± 2.5 %			
Total Dust Content No. 200 (75 µm)	± 1.5 %	± 1.0 %	± 2.5 %	± 1.5 %	± 1.0 %
Asphalt Binder Content	± 0.3 %	± 0.2 %	± 0.5 %	± 0.3 %	± 0.2 %
Voids	± 1.2 %	± 1.0 %	± 1.2 %	± 1.2 %	± 1.0 %
VMA	-0.7 % 2/	-0.5 % 2/		-0.7 % 2/	-0.5 % 2/

1/ Based on washed ignition oven
2/ Allowable limit below minimum design VMA requirement"

2) Design Verification and Production

Description. The following states the requirements for Hamburg Wheel and Tensile Strength testing for High ESAL, IL-4.75, and SMA hot mix asphalt (HMA) mixes during mix design verification and production.

When the options of Warm Mix Asphalt, Reclaimed Asphalt Shingles, or Reclaimed Asphalt Pavement are used by the Contractor, the Hamburg Wheel and tensile strength requirements in this special provision will be superseded by the special provisions for Warm Mix Asphalt, Reclaimed Asphalt Shingles, or Reclaimed Asphalt Pavement as applicable.

Mix Design Testing. Add the following to Article 1030.04 of the Standard Specifications:

"(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 meeting the following requirements:

(1)Hamburg Wheel Test criteria.

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

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

Production Testing. Add the following to Article 1030.06 of the Standard Specifications:

"(c) Hamburg Wheel Test. All HMA mixtures shall be sampled 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.
The Department may conduct additional Hamburg Wheel Tests on production material as determined by the Engineer. 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"

Basis of Payment. Revise the seventh paragraph of Article 406.14 of the Standard Specifications to read:

"For all mixes designed and verified under the Hamburg Wheel criteria, the cost of furnishing and introducing anti-stripping additives in the HMA will not be paid for separately, but shall be considered as included in the contract unit price of the HMA item involved.

No additional compensation will be awarded to the Contractor because of reduced production rates associated with the addition of the anti-stripping additive."

IDOT TRAINING PROGRAM GRADUATE ON-THE-JOB TRAINING SPECIAL PROVISION (TPG):

Effective: August 1, 2012

In addition to the Contractor's equal employment opportunity affirmative action efforts undertaken as elsewhere required by this Contract, the Contractor is encouraged to participate in the incentive program to provide additional on-the-job training to certified graduates of IDOT's community college pre-apprenticeship programs outlined by this Special Provision.

It is the policy of IDOT to fund IDOT pre-apprenticeship training programs based at Illinois Community Colleges throughout Illinois, by Intergovernmental Agreement with the Illinois community College Board, to provide training and skill-improvement opportunities to assure the increased participation of minority groups, disadvantaged persons and women in all phases of the highway construction industry. The intent of this IDOT Training Program Graduate (TPG) Special Provision is to place certified graduates of these IDOT funded pre-apprentice training programs on IDOT project sites when feasible, and provide the graduates with meaningful on- the-job training intended to lead to journey-level employment. IDOT and its sub-recipients, in carrying out the responsibilities of a state contract, shall determine which state funded construction contracts shall include "Training Program Graduate (TPG) Special Provisions." To benefit from the incentives to encourage the participation in the additional on-the-job training under this Training Program Graduate (TPG) Special Provision, the Contractor shall make every reasonable effort to employ certified graduates of the IDOT funded Pre-apprenticeship Training Program to the extent such persons are available within a reasonable recruitment area.

Participation pursuant to IDOT's requirements by the Contractor or subcontractor in this Training Program Graduate (TPG) Special Provision entitles the Contractor or subcontractor to be reimbursed at $10.00 per hour for training given a certified graduate trainee on this contract. As approved by the Department, reimbursement will be made for training persons as specified herein. This reimbursement will be made even though the Contractor or subcontractor may receive additional training program funds from other sources for other trainees, provided such other source does not specifically prohibit the Contractor or subcontractor from receiving other reimbursement. For purposes of this Special Provision the Contractor is not relieved of requirements under the Illinois Prevailing Wage Act and is not eligible for other training fund

reimbursements in addition to the Training Program Graduate (TPG) Special Provision reimbursement.

No payment shall be made to the Contractor if the Contractor or subcontractor fails to provide the required training. It is normally expected that a TPG will begin training on the project as soon as feasible after start of work utilizing the skill involved and remain on the project through completion of the contract, so long as training opportunities exist in his work classification or until he has completed his training program. Should the TPG's employment end in advance of the completion of the contract, the Contractor shall promptly notify the designated IDOT staff member under this Special Provision that the TPG's involvement in the contract has ended and supply a written report of the reason for the end of the involvement, the hours completed by the TPG under the Contract and the number of hours the incentive payment provided under this Special Provision will be or has been claimed for the TPG.

The Contractor will provide for the maintenance of records and furnish periodic reports documenting its performance under this Special Provision.

METHOD OF MEASUREMENT: The unit measurement is in hours.

BASIS OF PAYMENT: This work will be paid for at the contract unit price of $10.00 per hour for TRAINEES TRAINING PROGRAM GRADUATE. The estimated total number of hours, unit price and total price have been include in the schedule of prices.

The Contractor shall provide training opportunities aimed at developing full journeyworker in the type of trade or job classification involved. The initial number of TPGs for which the incentive is under this contract is one. During the course of performance of the Contract the Contractor may seek approval from the Department for additional incentive eligible TPGs. In the event the Contractor subcontracts a portion of the contract work, it shall determine how many, if any, of the TPGs are to be trained by the subcontractor, provided however, that the Contractor shall retain the primary responsibility for meeting the training requirements imposed by this Special Provision. The Contractor shall also insure that this Training Program Graduate Special Provision is made applicable to such subcontract if the TPGs are to be trained by a subcontractor and that the incentive payment is passed on to each subcontractor.

For the Contractor to meet the obligations for participation in this TPG incentive program under this Special Provision, the Department has contracted by Intergovernmental Agreement with the Illinois Community College Board to provide screening, tutoring and pre-training to individuals interested in working in the applicable construction classification and has certified those students who have successfully completed the program and are eligible to be TPGs. A

Illinois Department of Transportation

Storm Water Pollution Prevention Plan

Route	Maple Avenue	Marked Rte.	FAU 4006
Section	95-00049-00-PV	Project No.	M-8003 (095)
County	Kane	Contract No.	63745

This plan has been prepared to comply with the provisions of the NPDES Permit Number ILR10, issued by the Illinois Environmental Protection Agency for storm water discharges from Construction Site Activities.

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

ED SZYDLOWSKI
Print Name

ENGINEERING MANAGER
Title

Village of Carpentersville
Agency

Signature

DEC 11, 2012
Date

I. Site Description:

A. The following is a description of the project location:

Maple Avenue from Washington Street to L. W. Besinger Drive.

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

Storm Sewer Excavation, Water main excavation, Strip Topsoil, Roadway Reconstruction Excavation, Structure excavation, Creek grading, and Parkway Restoration

C. The following is a description of the intended sequence of major activities which will disturb soils for major portions of the construction site, such as grubbing, excavation and grading:

1. *Tree Removal*
2. *Strip Topsoil*
3. *Excavate for Structures*
4. *Excavate for Storm Sewers and Water main*
5. *Excavate for Roadway Reconstruction*
6. *Excavate for Roadway Widening*
7. *Grading Stone*
8. *Parkway Restoration*

D. The total area of the construction site is estimated to be *12.1* acres.

The total area of the site that is estimated will be disturbed by excavation, grading or other activities is *12.1* acres.

E. The following is a weighted average of the runoff coefficient for this project after construction activities are completed:

0.65

F. The following is a description of the soil types found at the project site followed by information regarding their erosivity:

Topsoil, clay, and aggregate. Topsoil and clay very erosive, aggregate moderately erosive

G. The following is a description of potentially erosive areas associated with this project:

Excavations, parkways

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

After stripping topsoil and beginning excavations, exposed clay materials will be susceptible to erosion from storm events – most areas drain to the road at slopes 6:1 or less, some specific areas may have slopes of up to 3:1 away from the road.

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

J. The following is a list of receiving water(s) and the ultimate receiving water(s), and areal extent of wetland acreage at the site. The location of the receiving waters can be found on the erosion and sediment control plans:

Two wetlands are adjacent to the project: Wetland C (0.25 acres) and Wetland B (3.30 acres). The ultimate receiving water is Carpenter Creek.

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

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

II. Controls:

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

A. Erosion and Sediment Controls

1. **Stabilized Practices:** Provided below is a description of interim and permanent stabilization practices, including site specific scheduling of the implementation of the practices. Site plans will ensure that existing vegetation is preserved where attainable and disturbed portions of the site will be stabilized. Stabilization practices may include but are not limited to: temporary seeding, permanent seeding, mulching, geotextiles, sodding, vegetative buffer strips, protection of trees, preservation of mature vegetation, and other appropriate measures. Except as provided below in II(A)(1)(a) and II(A)(3), stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or

permanently ceased, but in no case more than 7 days after the construction activity in that portion of the site has temporarily or permanently ceases on all disturbed portions of the site where construction will not occur for a period of 14 or more calendar days.

a. Where the initiation of stabilization measures by the 7th day after construction activity temporarily or permanently ceases is precluded by snow cover, stabilization measures shall be initiated as soon as practicable thereafter.

The following Stabilization Practices will be used for this project:

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

Describe how the Stabilization Practices listed above will be utilized:

Existing vegetation not effected by on-going construction will be preserved. Protecting numerous parkway trees is a requirement of the contract. Temporary Erosion control seeding will placed whenever disturbed areas will be left idle for more than 7 days. Areas outside pavement will be permanently stabilized with seed and erosion blanket.

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

The following Structural Practices will be used for this project:

- ☒ Perimeter Erosion Barrier
- ☒ Temporary Ditch Check
- ☒ Storm Drain Inlet Protection
- ☒ Sediment Trap
- ☐ Temporary Pipe Slope Drain
- ☐ Temporary Sediment Basin
- ☐ Temporary Stream Crossing
- ☐ Stabilized Construction Exits
- ☐ Turf Reinforcement Mats
- ☐ Permanent Check Dams
- ☐ Permanent Sediment Basin
- ☐ Aggregate Ditch
- ☐ Paved Ditch
- ☐ Rock Outlet Protection
- ☒ Riprap
- ☐ Gabions
- ☐ Slope Mattress
- ☒ Retaining Walls
- ☐ Slope Walls
- ☐ Concrete Revetment Mats
- ☐ Level Spreaders
- ☐ Other (specify)
- ☐ Other (specify)
- ☐ Other (specify)
- ☐ Other (specify)
- ☐ Other (specify)

Describe how the Structural Practices listed above will be utilized:

Perimeter Erosion Barrier (Silt Fence) will be placed along all areas that slope away from the project. Storm Drain Inlet Protection and Sediment Traps will be installed on all open-lidded structures (existing and proposed) to prevent sediment from entering the storm sewer.

3. **Storm Water Management:** Provided below is a description of measures that will be installed during the construction process to control pollutants in storm water discharges that will occur after construction operations have been completed. The installation of these devices may be subject to Section 404 of the Clean Water Act.

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

The practices selected for implementation were determined on the basis of the technical guidance in Section 59-8 (Erosion and Sediment Control) in Chapter 59 (Landscape Design and Erosion Control) of the Illinois Department of Transportation Bureau of Design and Environment Manual. If practices other than those discussed in Section 59-8 are selected for implementation or if practices are applied to situations different from those covered in Section 59-8, the technical basis for such decisions will be explained below.

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

Description of Storm Water Management Controls.

Erosive factors should not be significant after establishment of permanent stabilization.

4. Other Controls:

a. Vehicle Entrances and Exits – Stabilized construction entrances and exits must be constructed to prevent tracking of sediments onto roadways.

The contractor will provide the resident engineer with a written plan identifying the location of stabilized entrances and exits and the procedures (s)he will use to construct and maintain them.

b. Material Delivery, Storage, and Use – The following BMPs shall be implemented to help prevent discharges of construction materials during delivery, storage, and use:
- All products delivered to the project site must be properly labeled.
- Water tight shipping containers and/or semi trailers shall be used to store hand tools, small parts, and most construction materials that can be carried by hand, such as paint cans, solvents, and grease.
- A storage/containment facility should be chosen for larger items such as drums and items shipped or stored on pallets. Such material is to be covered by a tin roof or large sheets of plastic to prevent precipitation from coming in contact with the products being stored.
- Large items such as light stands, framing materials and lumber shall be stored in the open in a general storage area. Such material shall be elevated with wood blocks to minimize contact with storm water runoff.
- Spill clean-up materials, material safety data sheets, an inventory of materials, and emergency contact numbers shall be maintained and stored in one designated area and each Contractor is to inform his/her employees and the resident engineer of this location.

c. Stockpile Management – BMPs shall be implemented to reduce or eliminate pollution of storm water from stockpiles of soil and paving materials such as but not limited to portland cement concrete rubble, asphalt concrete, asphalt concrete rubble, aggregate base, aggregate sub base, and pre-mixed aggregate. The following BMPs may be considered:
- Perimeter Erosion Barrier
- Temporary Seeding
- Temporary Mulch
- Plastic Covers
- Soil Binders
- Storm Drain Inlet Protection

The contractor will provide the resident engineer with a written plan of the procedures (s)he will use on the project and how they will be maintained.

d. Waste Disposal. No materials, including building materials, shall be discharged into Waters of the State, except as authorized by a Section 404 permit.

e. The provisions of this plan shall ensure and demonstrate compliance with applicable State and/or local waste disposal, sanitary sewer or septic system regulations.

f. The contractor shall provide a written and graphic plan to the resident engineer identifying where each of the above areas will be located and how they are to be managed.

5. Approved State or Local Laws

The management practices, controls and provisions contained in this plan will be in accordance with IDOT specifications, which are at least as protective as the requirements contained in the Illinois Environmental Protection Agency's Illinois Urban Manual, 1995. Procedures and requirements specified in applicable sediment and erosion site plans or storm water management plans approved by local officials shall be described or incorporated by reference in the space provided below. Requirements specified in sediment and erosion site plans, site permits, storm water management site plans or site permits approved by local officials that are applicable to protecting surface water resources are, upon submittal of an NOI, to be authorized to discharge under permit ILR10 incorporated by reference and are enforceable under this permit even if they are not specifically included in the plan.

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

Sediment and Erosion control practices shall meet all Village and Kane County ordinance requirements, which are at least as protective as the IEPA Illinois Urban Manual, 1995.

III. Maintenance:

The following is a description of procedures that will be used to maintain, in good and effective operating conditions, the vegetation, erosion and sediment control measures and other protective measures identified in this plan. The resident engineer will provide maintenance guides to the contractor for the practices associated with this project.

Maintaining silt fence and cleaning inlet protection sediment traps every two weeks or after a ½" or more rainfall event is a requirement of the contract.

IV. Inspections:

Qualified personnel shall inspect disturbed areas of the construction site which have not yet been finally stabilized, structural control measures, and locations where vehicles and equipment enter and exit the site. Such inspections shall be conducted at least once every seven (7) calendar days and within 24 hours of the end of a storm that is 0.5 inches or greater or equivalent snowfall.

A. Disturbed areas, use areas (storage of materials, stockpiles, machine maintenance, fueling, etc.), borrow sites, and waste sites shall be inspected for evidence of, or the potential for, pollutants entering the drainage system. Erosion and sediment control measures identified in the plan shall be observed to ensure that they are operating correctly. Discharge locations or points that are accessible, shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters. Locations where vehicles enter or exit the site shall be inspected for evidence of off site sediment tracking.

B. Based on the results of the inspection, the description of potential pollutant sources identified in section I above and pollution prevention measures identified in section II above shall be revised as appropriate as soon as practicable after such inspection. Any changes to this plan resulting from the required inspections shall be implemented within ½ hour to 1 week based on the urgency of the situation. The resident engineer will notify the contractor of the time required to implement such actions through the weekly inspection report.

C. A report summarizing the scope of the inspection, name(s) and qualifications of personnel making the inspection, the date(s) of the inspection, major observations relating to the implementation of this storm water pollution prevention plan, and actions taken in accordance with section IV(B) shall be made and retained as part of the plan for at least three (3) years after the date of the inspection. The report shall be signed in accordance with Part VI. G of the general permit.

D. If any violation of the provisions of this plan is identified during the conduct of the construction work covered by this plan, the resident engineer shall notify the appropriate IEPA Field Operations Section office by email at:

epa.swnoncomp@illinois.gov, telephone or fax within 24 hours of the incident. The resident Engineer shall then complete and submit an "Incidence of Noncompliance" (ION) report for the identified violation within 5 days of the incident. The resident engineer shall use forms provided by the Illinois Environmental Protection Agency and shall include specific information on the cause of noncompliance, actions which were taken to prevent any further causes of noncompliance, and a statement detailing any environmental impact which may have resulted from the noncompliance. All reports of noncompliance shall be signed by a responsible authority in accordance with Part VI. G of the general permit.

The Incidence of Non-Compliance shall be mailed to the following address:

Illinois Environmental Protection Agency
Division of Water Pollution Control
Attn: Compliance Assurance Section
1021 North Grand East
Post Office Box 19276
Springfield, Illinois 62794-9276

V. Non-Storm Water Discharges:

Except for flows from fire fighting activities, sources of non-storm water that is combined with storm water discharges associated with the industrial activity addressed in this plan must be described below. Appropriate pollution prevention measures, as described below, will be implemented for the non-storm water component(s) of the discharge.

A. Spill Prevention and Control – BMPs shall be implemented to contain and clean-up spills and prevent material discharges to the storm drain system. The contractor shall produce a written plan stating how his/her company will prevent, report, and clean up spills and provide a copy to all of his/her employees and the resident engineer. The contractor shall notify all of his/her employees on the proper protocol for reporting spills. The contractor shall notify the resident engineer of any spills immediately.

B. Concrete Residuals and Washout Wastes – The following BMPs shall be implemented to control residual concrete, concrete sediments, and rinse water:
   - Temporary Concrete Washout Facilities shall be constructed for rinsing out concrete trucks. Signs shall be installed directing concrete truck drivers where designated washout facilities are located.
   - The contractor shall have the location of temporary concrete washout facilities approved by the resident engineer.
   - All temporary concrete washout facilities are to be inspected by the contractor after each use and all spills must be reported to the resident engineer and cleaned up immediately.
   - Concrete waste solids/liquids shall be disposed of properly.

C. Litter Management – A proper number of dumpsters shall be provided on site to handle debris and litter associated with the project. The Contractor is responsible for ensuring his/her employees place all litter including marking paint cans, soda cans, food wrappers, wood lathe, marking ribbon, construction string, and all other construction related litter in the proper dumpsters.

D. Vehicle and Equipment Cleaning – Vehicles and equipment are to be cleaned in designated areas only, preferably off site.

E. Vehicle and Equipment Fueling – A variety of BMPs can be implemented during fueling of vehicles and equipment to prevent pollution. The contractor shall inform the resident engineer as to which BMPs will be used on the project. The contractor shall inform the resident engineer how (s)he will be informing his/her employees of these BMPs (i.e. signs, training, etc.). Below are a few examples of these BMPs:
   - Containment
   - Spill Prevention and Control
   - Use of Drip Pans and Absorbents
   - Automatic Shut-Off Nozzles
   - Topping Off Restrictions
   - Leak Inspection and Repair

F. Vehicle and Equipment Maintenance – On site maintenance must be performed in accordance with all environmental laws such as proper storage and no dumping of old engine oil or other fluids on site.

VI. Failure to Comply:

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

Illinois Department of Transportation

Contractor Certification Statement

The Resident Engineer is to make copies of this form and every contractor and sub-contractor will be required to complete their own separate form.

Route	Maple Avenue	Marked Rt.	FAU 4006
Section	95-00049-00-PV	Project No.	M-8003 (095)
County	Kane	Contract No.	63745

This certification statement is part of the Storm Water Pollution Prevention Plan for the project described below, in accordance with General NPDES Permit No. ILR10 issued by the Illinois Environmental Protection Agency.

I certify under penalty of law that I understand the terms of the general National Pollutant Discharge Elimination System (NPDES) permit (ILR 10) that authorizes the storm water discharges associated with industrial activity from the construction site identified as part of this certification.

In addition, I have read and understand all of the information and requirements stated in the Storm Water Pollution Prevention Plan for the above mentioned project; I have provided all documentation required to be in compliance with the ILR10 and Storm Water Pollution Prevention Plan and will provide timely updates to these documents as necessary.

☐ Contractor

☐ Sub-Contractor

Print Name	Signature
Title	Date
Name of Firm	Telephone
Street Address	City/State/ZIP

Illinois Environmental Protection Agency

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

Division of Water Pollution Control
Notice of Intent (NOI) for General Permit
to Discharge Storm Water Associated with Construction Site Activities

This fillable form may be completed online, a copy saved locally, printed and signed before it is submitted to the Permit Section at the above address.

For Office Use Only

Permit No. ILR10 _____

OWNER INFORMATION

Company/Owner Name: Village if Carpentersville, Illinois

Mailing Address: 1200 L.W. Besinger Drive Phone: 847-551-3480

City: Carpentersville State: IL Zip: 60110 Fax: _____

Contact Person: Edward Szydlowski E-mail: eszydlowski@vi.carpentersville.il.us

Owner Type (select one) City

MS4 Community: ☑ Yes ☐ No

CONTRACTOR INFORMATION

Contractor Name: _____

Mailing Address: _____ Phone: _____

City: _____ State: ___ Zip: _____ Fax: _____

CONSTRUCTION SITE INFORMATION

Select One: ☐ New ☐ Change of information for: ILR10 _____

Project Name: Maple Avenue Improvements County: Kane

Street Address: Maple Ave-Washington to LW Besin City: Carpentersville IL Zip: 60110

Latitude: 42 (Deg) 06 (Min) 44 (Sec) Longitude: 88 (Deg) 16 (Min) 55 (Sec) 14&15 Section 42N Township **8E** Range

Approximate Construction Start Date May 2013 Approximate Construction End Date June 2014

Total size of construction site in acres: 12.1

If less than 1 acre, is the site part of a larger common plan of development?

☐ Yes ☑ No

Fee Schedule for Construction Sites:
Less than 5 acres - $250
5 or more acres - $750

STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

Has the SWPPP been submitted to the Agency? ☑ Yes ☐ No

(Submit SWPPP electronically to: epa.constilr10swppp@illinois.gov)

Location of SWPPP for viewing: Address: 1200 L.W. Besinger Drive City: Carpentersville

SWPPP contact information:

Inspector qualifications:

Contact Name: Robert W. Lenzini P.E.

Phone: 815-459-1260 Fax: 815-455-0450 E-mail: rlenzini@baxterwoodman.com

Project inspector, if different from above

Inspector qualifications:

Inspector's Name: _____ _____

Phone: _____ Fax: _____ E-mail: _____

IL 532 2104 WPC 623
Rev 5/10

This Agency is authorized to require this information under Section 4 and Title X of the Environmental Protection Act (415 ILCS 5/4, 5/39). Failure to disclose this information may result in: a civil penalty of not to exceed $50,000 for the violation and an additional civil penalty of not to exceed $10,000 for each day during which the violation continues (415 ILCS 5/42) and may also prevent this form from being processed and could result in your application being denied. This form has been approved by the Forms Management Center.

TYPE OF CONSTRUCTION (select one)

Construction Type Transportation

SIC Code: _____

Type a detailed description of the project:

Hot-mix asphalt and concrete pavement reconstruction of Maple Avenue from Washington Street to L.W. Besinger Drive in the Village of Carpentersville, Kane County, IL including water main, storm sewer, HMA bike path, street lighting, sanitary sewer, curb and gutter, 3-sided culvert replacement over Carpenter Creek, Creek grading (due to Culvert replacement) and parkway restoration.

HISTORIC PRESERVATION AND ENDANGERED SPECIES COMPLIANCE

Has the project been submitted to the following state agencies to satisfy applicable requirements for compliance with Illinois law on:

Historic Preservation Agency ☑ Yes ☐ No

Endangered Species ☑ Yes ☐ No

RECEIVING WATER INFORMATION

Does your storm water discharge directly to: ☑ Waters of the State or ☑ Storm Sewer

Owner of storm sewer system: Village of Carpentersville, Illinois

Name of closest receiving water body to which you discharge: Carpenter Creek to Fox River

Mail completed form to: Illinois Environmental Protection Agency
Division of Water Pollution Control
Attn: Permit Section
Post Office Box 19276
Springfield, Illinois 62794-9276
or call (217) 782-0610
FAX: (217) 782-9891

Or submit electronically to: epa.constilr10swppp@illinois.gov

I certify under penalty of law that this document and all attachments were prepared under my direction and supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage this system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. In addition, I certify that the provisions of the permit, including the development and implementation of a storm water pollution prevention plan and a monitoring program plan, will be complied with.

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))

_____
Owner Signature:

DEC 11, 2012
Date:

ED SZYDLOWSKI
Printed Name:

ENGINEERING MANAGER
Title:

INSTRUCTIONS FOR COMPLETION OF CONSTRUCTION ACTIVITY NOTICE OF INTENT (NOI) FORM

Submit original, electronic or facsimile copies. Facsimile and/or electronic copies should be followed-up with submission of an original signature copy as soon as possible. Please write "copy" under the "For Office Use Only" box in the upper right hand corner of the first page.

This fillable form may be completed online, a copy saved locally, printed and signed before it is submitted to the Permit Section at:

Illinois Environmental Protection Agency
Division of Water Pollution Control
Permit Section
Post Office Box 19276
Springfield, Illinois 62794-9276
or call (217) 782-0610
FAX: (217) 782-9891

Or submit electronically to: epa.constilr10swppp@illinois.gov

Reports must be typed or printed legibly and signed.

Any facility that is not presently covered by the General NPDES Permit for Storm Water Discharges From Construction Site Activities is considered a new facility.

If this is a change in your facility information, renewal, etc., please fill in your permit number on the appropriate line, changes of information or permit renewal notifications do not require a fee.

NOTE: FACILITY LOCATION IS NOT NECESSARILY THE FACILITY MAILING ADDRESS, BUT SHOULD DESCRIBE WHERE THE FACILITY IS LOCATED.

Use the formats given in the following examples for correct form completion.

	Example	Format
Section	12	1 or 2 numerical digits
Township	12N	1 or 2 numerical digits followed by "N" or "S"
Range	12W	1 or 2 numerical digits followed by "E" or "W"

For the Name of Closest Receiving Waters, do not use terms such as ditch or channel. For unnamed tributaries, use terms which include at least a named main tributary such as "Unnamed Tributary to Sugar Creek to Sangamon River."

Submission of initial fee and an electronic submission of Storm Water Pollution Prevention Plan (SWPPP) for Initial Permit prior to the Notice of Intent being considered complete for coverage by the ILR10 General Permits. Please make checks payable to: Illinois EPA at the above address.

Construction sites with less than 5 acres of land disturbance - fee is $250.

Construction sites with 5 or more acres of land disturbance - fee is $750.

SWPPP should be submitted electronically to: epa.constilr10swppp@illinois.gov When submitting electronically, use Project Name and City as indicated on NOI form.

TESTING SERVICE CORPORATION

Report of Geotechnical Investigation

Maple Avenue Improvements

Washington Street to Besinger Drive

Carpentersville, Illinois

Hampton, Lenzini and Renwick, Inc.

TSC

Subsurface Exploration
Geotechnical Engineering
Construction Materials Engineering & Testing
Environmental Engineering
Geosciences & Hydrogeologic Studies
Monitoring Wells

June 2, 1997
L - 40,955

REPORT OF GEOTECHNICAL INVESTIGATION
MAPLE AVENUE IMPROVEMENTS
WASHINGTON STREET TO BESINGER DRIVE
CARPENTERSVILLE, ILLINOIS

PREPARED FOR:
HAMPTON, LENZINI AND RENWICK, INC.
380 SHEPARD DRIVE
ELGIN, ILLINOIS 60123-7010

PREPARED BY:
TESTING SERVICE CORPORATION
457 EAST GUNDERSEN DRIVE
CAROL STREAM, ILLINOIS 60188
(630) 653-3920

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May 30, 1997
L - 40,955

REPORT OF GEOTECHNICAL INVESTIGATION
MAPLE AVENUE IMPROVEMENTS
WASHINGTON STREET TO BESINGER DRIVE
CARPENTERSVILLE, ILLINOIS

1.0 INTRODUCTION

This report presents results of the soils investigation performed for the Maple Avenue Improvements in Carpentersville, Illinois. These geotechnical services were provided in accordance with TSC Proposal No. 14,012 (Revision 3) dated June 3, 1996 and the attached General Conditions which are incorporated herein by reference.

The limits of the project extend from Sta. 10+050 to 12+140, or Washington Street to Besinger Drive, a total distance of about 2,090 meters (m). The majority of the existing 2-lane, 9-meter wide pavement consists of bituminous concrete, except for a P.C. concrete section between Sta. 11+259 and 11+927, or about Wilmette Avenue to Oak Ridge Road.

The proposed improvements include bituminous pavement reconstruction from about Washington Street to Wilmette Avenue. Bituminous pavement resurfacing or possible reconstruction is proposed from Sta. 11+927 to 12+140. The improvements also include possible rehabilitation or reconstruction of the P.C. concrete section.

Proposed centerline will remain the same as existing with little to no pavement widening. The profile grade line will also remain about the same as existing, with no areas of

significant cut or fill. The improvements will likely include combination curb and gutter along both sides of the roadway.

A stormwater detention basin is also planned on the existing front lawn of the McCanna industrial property located at the northeast corner of Maple Avenue and Carpenter Boulevard. According to preliminary information provided by Hampton, Lenzini and Renwick (HLR), the proposed detention basin will be approximately 150 x 46 m in plan view and about 1.5 to 3 m deep.

This geotechnical investigation included roadway soil borings drilled at approximate 90-m intervals in areas of proposed bituminous pavement reconstruction or resurfacing. Four borings were also performed in the proposed detention basin area. A pavement condition analysis was performed for the section of P.C. concrete pavement, including a visual pavement distress survey and pavement cores.

Tests for Illinois Bearing Ratio (IBR) and Standard Proctor moisture/density relationships were performed on two representative roadway subgrade samples. Additionally, Atterberg limits, particle size analyses and organic content tests were performed on various subgrade samples. This report presents results of all field and laboratory test data and provides recommendations with regard to treatment of unsuitable or unstable soil types, treatment of the P.C. concrete section, and other considerations for design and construction of the roadway and detention basin.

2.0 SITE DESCRIPTION AND GEOLOGY

The project site is located in the northeast corner of Kane County, within the Village of Carpentersville. The site is located within Sections 14 and 15 of Algonquin Township, defined as T 42 N, R 8 E. Land use adjacent to the roadway includes residential, industrial and municipal buildings as well as a park area and farmland.

Site topography from west to east is gently sloping, first downward from Sta. 10+050 at Washington Street to a low point at about Sta. 10+640, then upward to about Sta. 11+080 near Tamarac Street. East of Tamarac, grade rises steeply to about Rosewood Drive at Sta. 11+580 and thereafter returns to gently rolling to the end of the project at Besinger

Drive. Site elevations range from a low of Elevation 226.1 m at Sta. 10+640 to a high of Elevation 265.8 m at Sta. 12+000.

Geologically, the western portion of the project site lies within surficial soil deposits of primarily sand and gravel deposited as outwash in glacial rivers. Surficial soil deposits in the eastern portion of the site consist of cohesive glacial till, occasionally interbedded with granular outwash. The cohesive soils typically exhibit moderate to high shear strengths at relatively moderate moisture contents.

Uppermost soils across many portions of this area consist of wind-blown loess and fine sand which has been weathered, decomposed and otherwise modified such that it presently consists of clay loam of medium to high plasticity. Peat, organic clay and/or soft slopewash deposits may also be found in relatively low-lying areas associated with the moraine topography, particularly in the central portion of the site between Carpenter Boulevard and Tamarac Drive. Dolomitic limestone bedrock of Silurian age is expected to be overlain by about 30 m of overburden in the site vicinity.

A review of the Kane County Pedology map indicates the site to cross over several mapping units including silt loam with slopes up to 30 percent, silty clay loam and urban land. Lena muck, a very poorly drained organic soil, is indicated in the central portion of the site between Carpenter Boulevard and Tamarac Drive. The Soil Pedology Map for this project is included in the Appendix.

3.0 FIELD INVESTIGATION AND LABORATORY TESTING

This geotechnical study included twenty (20) roadway borings on the bituminous pavement where reconstruction or resurfacing is planned, four (4) detention basin borings, and eight (8) pavement cores for the section of P.C. concrete pavement. Supplemental Borings 7A, 7B and 7C were performed to better delineate organic clay deposits found in Boring 7. Reference is made to the Boring and Core Location Plan included in the Appendix for the approximate drilling layout. Ground surface elevations at roadway boring locations were interpolated from profile sheets provided vby HLR. Ground surface elevations at the detention basin borings were obtained by utilizing the existing centerline elevation at Sta. 10+600 as a benchmark.

A pavement condition analysis was conducted for the section of P.C. concrete pavement which extends from about Sta. 11+259 to 11+927. The analysis included a visual survey by an engineer, during which the location and relative degree of various forms of pavement distress were documented and photographed. The eight pavement core locations were based on the visual survey. Three cores to identify general pavement composition were located in areas considered to be in good condition. Five cores to determine pavement condition were located over distressed areas, including existing cracks and spalled areas containing asphalt patches.

Pavement cores with 100 mm diameter were obtained using an electric drill and core barrel containing diamond cutting bits. Granular base course materials were also sampled and measured for thickness. Additionally, thin-walled tube samples of the uppermost subgrade were obtained from each core location. The pavement and base course samples were examined by an engineer in the laboratory. A table summary of pavement thickness and the Report of Subgrade Test Data are provided in the Appendix.

Roadway borings were drilled to a depth of 3.0 m below existing grade. Soil sampling was generally performed to a depth of 1.2 m in conjunction with the Standard Penetration Test, for which driving resistance to a 2-inch split-spoon sampler (N value in blows per foot) provides an indication of the relative density of granular soils and the consistency of cohesive soils. Below 1.2 m, soil samples were obtained from the auger flights at maximum 0.6 m intervals in accordance with IDOT soil survey criteria. Groundwater observations were made during and following completion of drilling operations. The bore holes were then backfilled and patched with asphalt as appropriate to preclude potential hazards to the public.

The detention basin borings were extended to a depth of 9.1 m below existing grade. Split-spoon soil sampling in conjunction with the Standard Penetration Test was performed at 0.76 m intervals for the full depth of the borings. Groundwater observations were also made during and following completion of drilling operations.

Soil samples were examined in the laboratory to verify field descriptions and to classify them in accordance with the IDOT/AASHTO soil classification systems. Moisture content determinations were performed for all cohesive and intermediate (silty or loamy) soil

samples. Estimated unconfined compressive strengths were obtained for inorganic cohesive samples using a calibrated hand penetrometer. Dry unit weight tests were run on the thin-walled tube samples.

For classification purposes and to verify field identifications, eight (8) Atterberg limit tests and ten (10) grain size analyses were performed on representative subgrade specimens. Illinois Bearing Ratio and Standard Proctor (AASHTO T-99) tests were performed on bag samples obtained from Borings 10 and 13. Three (3) samples of black loam or sandy loam were tested for organic content in accordance with loss-on-ignition (AASHTO T-276) and wet combustion (AASHTO T-194) test procedures. Results of IBR, Standard Proctor and laboratory classification tests for the roadway and detention basin borings are presented in the Appendix under Soil Test Data. Gradation sheets for granular samples from Borings 18-21 are also included in the Appendix.

Reference is made to the boring logs included in the Appendix which indicate subsurface stratigraphy and soil descriptions, results of field and laboratory tests, and water level observations. Definitions of descriptive terminology are also included. While strata changes are shown as a definite line on the boring logs, the actual transition between soil layers will probably be more gradual. Pavement measurements reported on the boring logs should be considered approximate due to disturbance created by augering procedures.

4.0 PRECIPITATION SUMMARY

The soil borings and pavement cores were performed in April and May of 1997. Observations made of precipitation during the three months preceding our field work are summarized in the following table. These observations were obtained at O'Hare International Airport located approximately 34 kilometers southeast of the project site.

PRECIPITATION DATA

MONTH	TOTAL (mm)	DEPARTURE FROM NORMAL (mm)
February	141	+106
March	40	-28
April	42	-50

Because precipitation measurements were below normal for March through April, groundwater levels and soil moisture may have been below normal conditions during the field work.

5.0 DISCUSSION OF RESULTS

5.1 P.C. Concrete Pavement Composition [1]

5.1.1 Visual Survey

The visual pavement survey was conducted on April 18, 1997. The P.C. concrete (PCC) pavement is about 9 m wide and has gravel shoulders. It contains a longitudinal joint along the roadway centerline and transverse joints spaced at approximate 14 to 16 m intervals. The joints did not appear to be sealed.

Many areas of the PCC pavement were in relatively poor condition. Frequent transverse cracking and occasional longitudinal cracking of low to high severity were noted along the entire length of the PCC pavement. Low to high severity spalling was noted along nearly every transwerse joint and along several portions of the centerline longitudinal joint, particularly between Sta. 11+865 and 11+927. Asphalt concrete patches have been applied to most of the spalled areas and frequently exhibited medium to high severity levels of deterioration. About 6 saw-cut type asphalt concrete and PCC patches ranging in size from about 1 to 9 square meters were also noted at various locations on the pavement. Other types of pavement distress included occasional popouts, a corner break at about Sta. 11+260 and lane-to-shoulder dropoff at about Sta. 11+350 in the westbound lane.

The distress map included in the Appendix shows the approximate location of each distress type which was observed on the PCC pavement during the visual survey. A legend of distress map symbols and definitions of distress types and severity levels are also included.Several photographs of representative pavement distress types are included in the Appendix.

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1 Discussion based on Distress Identification Manual for the Long-Term Pavement Performance Project, Strategic Highway Research Program, Washington DC, 1993

5.1.2 Pavement Cores

The PCC thickness at C-1, 2, 4, 5 and 7 was between 170 and 190 mm. C-2 and 5 were located over existing minor cracks which continued through the full length of the cores. A horizontal fracture was noted at about 90 mm in C-4. The PCC cores were otherwise in relatively sound condition.

C-3, 6 and 8 encountered 30 to 70 mm of asphalt concrete patch overlying 0 to 100 mm of PCC. The asphalt concrete was in fair to very poor condition with frequent fractures. Steel rebar approximately 8 mm in diameter was encountered at about 80 to 100 mm in C-1, 3, 4 and 5. Steel rebar about 25 mm in diameter was present in C-3 at the interface of the asphalt patch and underlying PCC.

Underlying aggregate base course materials primarily consisted of crushed sand and gravel between 120 and 530 mm thickness. The aggregate base course in C-8 appeared to consist of crushed concrete but may represent severely fractured PCC pavement.

The Summary of PCC Pavement Thickness is included in the Appendix. Photographs of each core sample showing top views in the field and pavement section profiles are also included in the Appendix.

Core subgrade samples typically revealed relatively tough to hard clay and clay loam soils. Hand penetrometer estimates of unconfined compressive strength generally ranged between 144 and 432 kilopascals (kPa). The subgrade sample from C-1 had a hand penetrometer strength value of 48 kPa. Moisture contents were generally between 15 and 26 percent. The subgrade sample from C-2 included a layer of A-2-4 sandy loam with a moisture content of about 12 percent. Test results of core subgrade samples are summarized in Report of Subgrade Test Data included in the Appendix.

5.2 Roadway Boring Results

Roadway Borings 1-17 were located on asphalt pavement. The approximate thickness of bituminous concrete pavement was between 50 and 165 mm at Borings 1-14 and 180 mm at Borings 15-17. Underlying sand and gravel base course materials generally extended

to depths of 0.5 m or less. Exceptions occurred at Borings 7-9 where granular base course extended to depths of 0.6 to 0.8 m. Pavement measurements reported on the boring logs should be considered approximate due to disturbance created by augering procedures.

At Borings 7, 7A, 7B, and 7C, A-8 black organic clay and/or A-7-6 black silty clay (topsoil) underlie the pavement section, extending to depths of 1.0 to 2.0 m below existing grade. These compressible soils exhibited very high moisture contents ranging from 36 to 88 percent. Although proposed grade will remain about the same as existing and no pavement widening is planned, the potential for consolidation type settlement should still be considered in these areas.

At Borings 4, 6, 7B, 8 and 10-13, A-6/A-2-6/A-7-6 black loam or sandy loam (topsoil), occasionally described as fill, was encountered underlying pavement materials to depths of 0.5 to 2.0 m below existing grade. Moisture contents generally ranged from 18 to 28 percent. Organic content tests performed on A-6/A-7-6 black loam samples from Borings 4, 8 and 11 revealed Loss-On-Ignition (L.O.I.) values of 4.1 to 11.4 percent and Wet Combustion (O.W.C.) values of 2.7 to 4.7 percent. Fill materials described as black and brown clay loam extended to about 1.4 m in Boring 14.

Underlying soils at Borings 1-14 otherwise consisted of primarily A-6 clay loam and A-6/A-2-4 sandy loam. The clay loam soils exhibited variable hand penetrometer strength values, ranging from 48 to 287 kilopascals (kPa). Moisture contents of clay loam soils were generally between 15 and 20 percent at Borings 1-7C and were between 20 and 30 percent at Borings 8-14. Occasional layers of sand and gravel were encountered at Borings 3, 7A, 7B and 7C.

Underlying soils at Borings 15, 16 and 17 primarily consisted of A-4/A-6 clay and clay loam. Hand penetrometer strength estimates of these cohesive soils ranged from 192 to 431+ kPa at moisture contents of 11 to 18 percent.

Free groundwater was encountered at 2.6 m below existing grade at Boring 13. The remaining roadway borings were "dry" during and following completion of drilling operations.

5.3 Detention Basin Borings

Borings 18-21 for the proposed detention basin encountered 0.5 to 1.0 m of black loam or silty clay (topsoil) with variable moisture contents ranging from 11 percent at B-21 to 39 percent at B-19. Uppermost soils consisted of clay and clay loam with variable moisture contents between 13 and 30 percent. These cohesive soils extended to depths of 1.7 to 2.4 m at Borings 18-20 and to about 3.2 m at Boring 23. Underlying soils otherwise consisted of firm sand and gravel with occasional cobbles. These granular deposits extended to the bottom of the borings at 9.1 m.

Groundwater was encountered at a depth of 2.4 m while drilling at Borings 18-20, dropping to 2.7 to 3.7 m at the end of boring. At Boring 21, groundwater was measured at 3.2 m below existing grade, dropping to 4.9 m at the completion of drilling operations.

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 IBR Test Results

Two (2) representative subgrade samples were tested for Illinois Bearing Ratio (IBR) in order to determine a subgrade support value for pavement design. Upper subgrade samples from Borings 10 and 13 revealed IBR values of 5.2 and 4.8, respectively. Based on these test results and variable soil conditions encountered in the remaining borings, an IBR value of no greater than 3.0 is recommended for pavement design. This value represents a typical design bearing value for cohesive and loamy subgrade soils in the Chicago area. The Summary Report on Pavement, Base and Sub-base Design (Form BD-507A) is included in the Appendix.

6.2 Stripping Unsuitable Soils

Borings 7, 7A, 7B and 7C encountered black A-8 organic clay and/or A-7-6 black silty clay with moisture contents between 36 and 88 percent. Gradual settlement of these organic soils could cause damage to proposed storm sewers and result in ponding of water on the roadway. Furthermore, the organic soils represent unstable subgrade material for roadway construction and increase the risk of eventual pavement distress requiring maintenance and

repair at some future date. Removal and replacement of these unsuitable organic deposits is therefore recommended prior to roadway reconstruction.

Replacement fill should consist of Porous Granular Embankment - Subgrade (PGES). A specification sheet for PGES material is included in the Appendix. Summarized in the following table are the limits and excavation depth recommended for removal and replacement of organic soils as well as the estimated thickness of PGES materials which may be required.

REMOVAL OF ORGANIC SOILS AND ESTIMATED THICKNESS OF PGES REPLACEMENT MATERIALS

Boring(s)	Station Limits		Excavation Depth in Meters	PGES Thickness In Meters
	From	To		
7A	10+585	10+627	1.0	1.0
7, 7B	10+627	10+685	2.0	2.0
7C	10+685	10+715	1.0	1.0

As a minimum, the bottom of excavation should extend outward at 1H:1V from proposed outside edge of curb and then upward at 1H:1V to the ground surface. Accordingly, there should be no black organic deposits remaining within 1H:1V of proposed edge of curb.

The above estimates for PGES granular fill are for the determination of contract quantities only. Some areas may require greater or lesser amounts of replacement fill due to groundwater levels and/or subgrade stability. All quantities of PGES materials not required during construction should be deleted from the construction cost.

6.3 Subgrade Treatment

The subsurface study has revealed a significant number of borings where the moisture contents and unconfined compressive strength values indicate potentially unstable soil conditions for subgrade construction. These include relatively stiff to tough clay loam with moisture contents greater than 24 percent and intermediate "loamy" soil types which become relatively soft at much lower moisture contents. However, pavement construction during the summer may encounter more favorable soil conditions. Relatively hot and dry

weather may allow for the cohesive subgrade soils to be "dried out" and recompacted to a relatively firm and dense condition. Therefore, the need for undercutting and remedial subgrade treatment will be significantly influenced by the season of construction and prevailing temperature and precipitation.

Once initial stripping operations have been completed, exposed subgrade soils should be proof-rolled in order to detect the presence of unstable materials which require remedial treatment. The proof-roll should be performed using a loaded dump truck or other approved piece of heavy construction equipment. The proof-roll should demonstrate little or no deflection at top of subgrade level.

Remedial work for unstable subgrade should consist of discing, aerating, and recompacting exposed subgrade soils, as provided for in Art. 301.03 of the IDOT Standard Specifications. Compaction for subgrade materials should be to at least 95 percent of Standard Proctor density (AASHTO T-99). This compaction requirement should also be specified for any new fill placed within pavement subgrade. Solutions to a persistent pumping problem may include use of a geotextile fabric, removal of unsuitable soils and replacement with granular fill, or a combination thereof. Soft of loose areas may be tested with a Cone Penetrometer in accordance with the IDOT Subgrade Stability Manual to determine the remedial treatment depths.

The subgrade stability will be influenced by such factors as surface drainage provided by the contractor as well as the prevailing temperature and precipitation experienced during construction. The amount of trafficking and subgrade disturbance created by heavy construction vehicles will also have an influence on subgrade stability. The Contractor should try to make full use of inlets or ditches in order to maintain positive drainage for subgrade areas. Temporary drainage ditches or pumping from depressional areas should be provided as needed during construction in order to prevent ponded water from affecting the stability of the roadway.

Aggregate fill may be required for bridging over weak subgrade soils which demonstrate persistent stability problems. Aggregate materials needed for undercut areas may consist of PGES. Summarized in the following table are the estimated quantities for PGES

materials which may be required during construction. These quantities are in addition to the previous quantities given for the removal and replacement of unsuitable organic soils.

Estimated Quantities for Undercutting and Porous Granular Embankment -Subgrade (PGES) Replacement Fill

Boring Number(s)	Approximate Station Limits		Estimated Thickness PGES
	From	To	
2, 3,4,5	10+145	10+505	300 mm
6	10+505	10+585	450 mm
8-11	10+715	11+045	300 mm
13, 14	11+135	11+260	300 mm

The need for undercutting unstable subgrade and PGES replacement fill should be based on direct observations made during construction once the subgrade soils are exposed and proof-rolling procedures and cone penetrometer tests can be conducted. All quantities of PGES materials not required during construction should be deleted from the construction costs.

Borings 4, 6, 8 and 10-13 encountered black loam or black sandy loam with moderate to high moisture contents within the upper subgrade. Organic content tests performed on three representative samples indicate wet combustion (O.W.C.) results of no greater than 4.7 percent. These values are below the 10 percent stipulated by IDOT to classify the loamy soil as "unsuitable" subgrade. Based on these data and other test results, it is recommended that black loamy soil types encountered at subgrade level be considered as "suitable" subgrade soil providing they can be properly moisture conditioned and compacted to a firm and stable condition. Requirements for undercutting and replacement fill should be based solely on the stability characteristics of the existing soils. Areas of soft pumpy subgrade and/or very moist soil types will require undercutting and replacing with granular fill. Our estimated quantities of PGES replacement fill include removal of a significant amount of black loamy soils encountered in the borings.

6.4 Underdrain Placement

Wherever possible, it is best to install transverse underdrains at the low points of undercut areas where an open-graded coarse aggregate backfill is placed, such as the PGES materials. Maximum spacing between transverse underdrains should be about 100 meters within these materials.

All underdrains should be placed in such a manner to provide positive drainage to storm sewers or ditches. It is recommended that the underdrains be wrapped in a fabric envelope and that a sand backfill be used meeting IDOT FA-1 or FA-2 requirements.

6.5 Sewer Construction

It is our understanding that storm sewer construction will be part of the roadway improvements. However, TSC has not been furnished the locations or invert elevations of new sewer pipes. The subgrade soils are generally considered suitable for support of the sewer pipe and trench backfill. However, a thickened granular bedding layer may be required where sewer inverts lie within relatively soft to stiff cohesive soils or moisture sensitive loamy soils, which can become relatively unstable when exposed by excavation. Cohesive soils with strength values less than 144 kPa and layers of intermediate "loamy" type soils are suspect for needing undercutting below sewer inverts. If the trench bottom is considered unstable, 300 to 450 mm of additional granular bedding may be placed to provide a satisfactory base for pipe installation.

Although groundwater was not encountered in most of the borings, the accumulation of run-off or seepage at the base of excavations may still be expected to occur during sewer construction and site work. The contractor should be prepared to remove these accumulations by dewatering procedures; as a minimum to include pumping from strategically placed sumps.

Open excavations may require protective measures for laborers or adjacent structures which may be affected by sloughing soil conditions. Protective measures should include the use of safety trench boxes, sheeting and bracing, or other appropriate methods. In this

The borings encountered about 1.0 m or less of A-6/A-7-6 black loam or silty clay overlying clay or clay loam to depths of 1.7 to 3.2 m below existing grade. These clay soils are relatively impermeable and would provide relatively poor to very poor drainage.

A-1-a/A-1-b sand and gravel deposits which predominated below 1.7 to 3.2 m in the borings provide relatively good drainage. Although permeability tests were not performed, coefficient of permeability values for these granular soils are estimated to be in the range of $1x10^{-1}$ to $1x10^{-4}$ cm/sec based on grain size distributions. However, the groundwater table is relatively shallow, generally less than 3.0 m below existing grade. Percolation rates in these soil deposits would be expected to decrease when the groundwater level is reached.

The use of wet wells or natural seepage to drain the detention basin appears to be feasible. Construction procedures should include excavation of the upper horizon clay soils until the underlying sand and gravel deposits are exposed. Infiltration rates will be dependent upon depth and diameter of the wells and should be evaluated based on permeability values given above.

7.0 CLOSURE

The analysis and recommendations submitted in this report are based upon the data obtained from the twenty four (24) soil borings and eight (8) pavement cores performed at the locations indicated on the Boring and Core Location Plan. This report does not reflect any variations which may occur between these borings and cores, the nature and extent of which may not become evident until during the course of construction. If variations are then identified, recommendations contained in this report should be re-evaluated after performing on-site observations.

We are available to review this report with you at your convenience.

Prepared by,

Michael Bessell

Michael P. Bessell, E.I.T.
Staff Engineer

Mark L. Corbin

Mark L. Corbin
Registered Professional Engineer
Illinois No. 062-047916

MARK L. CORBIN
062-047916
REGISTERED
PROFESSIONAL
ENGINEER
STATE OF ILLINOIS

IMPORTANT INFORMATION ABOUT YOUR GEOTECHNICAL ENGINEERING REPORT

As the client of a consulting geotechnical engineer, you should know that site subsurface conditions cause more construction problems than any other factor. ASFE/The Association of Engineering Firms Practicing in the Geosciences offers the following suggestions and observations to help you manage your risks.

A GEOTECHNICAL ENGINEERING REPORT IS BASED ON A UNIQUE SET OF PROJECT-SPECIFIC FACTORS

Your geotechnical engineering report is based on a subsurface exploration plan designed to consider a unique set of project-specific factors. These factors typically include: the general nature of the structure involved, its size, and configuration; the location of the structure on the site; other improvements, such as access roads, parking lots, and underground utilities; and the additional risk created by scope-of-service limitations imposed by the client. To help avoid costly problems, ask your geotechnical engineer to evaluate how factors that change subsequent to the date of the report may affect the report's recommendations.

Unless your geotechnical engineer indicates otherwise, do not use your geotechnical engineering report:

- when the nature of the proposed structure is changed, for example, if an office building will be erected instead of a parking garage, or a refrigerated warehouse will be built instead of an unrefrigerated one;
- when the size, elevation, or configuration of the proposed structure is altered;
- when the location or orientation of the proposed structure is modified;
- when there is a change of ownership; or
- for application to an adjacent site.

Geotechnical engineers cannot accept responsibility for problems that may occur if they are not consulted after factors considered in their report's development have changed.

SUBSURFACE CONDITIONS CAN CHANGE

A geotechnical engineering report is based on conditions that existed at the time of subsurface exploration. Do not base construction decisions on a geotechnical engineering report whose adequacy may have been affected by time. Speak with your geotechnical consultant to learn if additional tests are advisable before construction starts.Note, too, that additional tests may be required when subsurface conditions are affected by construction operations at or adjacent to the site, or by natural events such as floods, earthquakes, or ground water fluctuations. Keep your geotechnical consultant apprised of any such events.

MOST GEOTECHNICAL FINDINGS ARE PROFESSIONAL JUDGMENTS

Site exploration identifies actual subsurface conditions only at those points where samples are taken. The data were extrapolated by your geotechnical engineer who then applied judgment to render an opinion about overall subsurface conditions. The actual interface between materials may be far more gradual or abrupt than your report indicates. Actual conditions in areas not sampled may differ from those predicted in your report. While nothing can be done to prevent such situations, you and your geotechnical engineer can work together to help minimize their impact. Retaining your geotechnical engineer to observe construction can be particularly beneficial in this respect.

A REPORT'S RECOMMENDATIONS CAN ONLY BE PRELIMINARY

The construction recommendations included in your geotechnical engineer's report are preliminary, because they must be based on the assumption that conditions revealed through selective exploratory sampling are indicative of actual conditions throughout a site. Because actual subsurface conditions can be discerned only during earthwork, you should retain your geotechnical engineer to observe actual conditions and to finalize recommendations. Only the geotechnical engineer who prepared the report is fully familiar with the background information needed to determine whether or not the report's recommendations are valid and whether or not the contractor is abiding by applicable recommendations. The geotechnical engineer who developed your report cannot assume responsibility or liability for the adequacy of the report's recommendations if another party is retained to observe construction.

GEOTECHNICAL SERVICES ARE PERFORMED FOR SPECIFIC PURPOSES AND PERSONS

Consulting geotechnical engineers prepare reports to meet the specific needs of specific individuals. A report prepared for a civil engineer may not be adequate for a construction contractor or even another civil engineer. Unless indicated otherwise, your geotechnical engineer prepared your report expressly for you and expressly for purposes you indicated. No one other than you should apply this report for its intended purpose without first conferring with the geotechnical engineer. No party should apply this report for any purpose other than that originally contemplated without first conferring with the geotechnical engineer.

GEOENVIRONMENTAL CONCERNS ARE NOT AT ISSUE

Your geotechnical engineering report is not likely to relate any findings, conclusions, or recommendations

about the potential for hazardous materials existing at the site. The equipment, techniques, and personnel used to perform a geoenvironmental exploration differ substantially from those applied in geotechnical engineering. Contamination can create major risks. If you have no information about the potential for your site being contaminated, you are advised to speak with your geotechnical consultant for information relating to geoenvironmental issues.

A GEOTECHNICAL ENGINEERING REPORT IS SUBJECT TO MISINTERPRETATION

Costly problems can occur when other design professionals develop their plans based on misinterpretations of a geotechnical engineering report. To help avoid misinterpretations, retain your geotechnical engineer to work with other project design professionals who are affected by the geotechnical report. Have your geotechnical engineer explain report implications to design professionals affected by them, and then review those design professionals' plans and specifications to see how they have incorporated geotechnical factors. Although certain other design professionals may be familiar with geotechnical concerns, none knows as much about them as a competent geotechnical engineer.

BORING LOGS SHOULD NOT BE SEPARATED FROM THE REPORT

Geotechnical engineers develop final boring logs based upon their interpretation of the field logs (assembled by site personnel) and laboratory evaluation of field samples. Geotechnical engineers customarily include only final boring logs in their reports. Final boring logs should not under any circumstances be redrawn for inclusion in architectural or other design drawings, because drafters may commit errors or omissions in the transfer process. Although photographic reproduction eliminates this problem, it does nothing to minimize the possibility of contractors misinterpreting the logs during bid preparation. When this occurs, delays, disputes, and unanticipated costs are the all-too-frequent result.

To minimize the likelihood of boring log misinterpretation, give contractors ready access to the complete geotechnical engineering report prepared or authorized for their use. (If access is provided only to the report prepared for you, you should advise contractors of the report's limitations, assuming that a contractor was not one of the specific persons for whom the report was prepared and that developing construction cost estimates was not one of the specific purposes for which it was prepared. In other words, while a contractor may gain important knowledge from a report prepared for another party, the contractor would be well-advised to discuss the report with your geotechnical engineer and to perform the additional or alternative work that the contractor believes may be needed to obtain the data specifically appropriate for construction cost estimating purposes.) Some clients believe that it is unwise or unnecessary to give contractors access to their geotechnical engineering reports because they hold the mistaken impression that simply disclaiming responsibility for the accuracy of subsurface information always insulates them from attendant liability. Providing the best available information to contractors helps prevent costly construction problems. It also helps reduce the adversarial attitudes that can aggravate problems to disproportionate scale.

READ RESPONSIBILITY CLAUSES CLOSELY

Because geotechnical engineering is based extensively on judgment and opinion, it is far less exact than other design disciplines. This situation has resulted in wholly unwarranted claims being lodged against geotechnical engineers. To help prevent this problem, geotechnical engineers have developed a number of clauses for use in their contracts, reports, and other documents. Responsibility clauses are not exculpatory clauses designed to transfer geotechnical engineers' liabilities to other parties. Instead, they are definitive clauses that identify where geotechnical engineers' responsibilities begin and end. Their use helps all parties involved recognize their individual responsibilities and take appropriate action. Some of these definitive clauses are likely to appear in your geotechnical engineering report. Read them closely. Your geotechnical engineer will be pleased to give full and frank answers to any questions.

RELY ON THE GEOTECHNICAL ENGINEER FOR ADDITIONAL ASSISTANCE

Most ASFE-member consulting geotechnical engineering firms are familiar with a variety of techniques and approaches that can be used to help reduce risks for all parties to a construction project, from design through construction. Speak with your geotechnical engineer not only about geotechnical issues, but others as well, to learn about approaches that may be of genuine benefit. You may also wish to obtain certain ASFE publications. Contact a member of ASFE or ASFE for a complimentary directory of ASFE publications.

ASFE PROFESSIONAL FIRMS PRACTICING IN THE GEOSCIENCES
8811 COLESVILLE ROAD/SUITE G106/SILVER SPRING, MD 20910
TELEPHONE: 301/565-2733 FACSIMILE: 301/589-2017

TSC

TESTING SERVICE CORPORATION

GENERAL CONDITIONS

Geotechnical and Construction Services

1. PARTIES AND SCOPE OF WORK: "This Agreement" consists of Testing Service Corporation's ("TSC") proposal, TSC's Schedule of Fees and Services, client's written acceptance thereof, if accepted by TSC, and these General Conditions. The terms contained in these General Conditions are intended to prevail over any conflicting terms in this Agreement. "Client" refers to the person or entity ordering the work to be done or professional services to be rendered by TSC (except where distinction is necessary, either work or professional services are referred to as "services" herein). If client is ordering the services on behalf of another, client represents and warrants that client is the duly authorized agent of said party for the purpose of ordering and directing said services, and in such case the term "client" shall also include the principal for whom the services are being performed. Prices quoted and charged by TSC for its services are predicated on the conditions and the allocations of risks and obligations expressed in these General Conditions. Unless otherwise stated in writing, client assumes sole responsibility for determining whether the quantity and the nature of the services ordered by client are adequate and sufficient for client's intended purpose. Client shall communicate these General Conditions to each and every third party to whom the client transmits any report prepared by TSC. Unless otherwise expressly assumed in writing, TSC shall have no duty to any third party, and in no event shall TSC have any duty or obligation other than those duties and obligations expressly set forth in this Agreement. Ordering services from TSC shall constitute acceptance of TSC's proposal and these General Conditions.

2. SCHEDULING OF SERVICES: The services set forth in this Agreement will be accomplished in a timely and workmanlike manner. If TSC is required to delay any part of its services to accommodate the requests or requirements of client, regulatory agencies, or third parties, or due to any cause beyond its reasonable control, client agrees to pay such additional charges, if any, as may be applicable.

3. ACCESS TO SITE: Client will arrange and provide such access to the site as is necessary for TSC to perform its services. TSC shall take reasonable measures and precautions to minimize damage to the site and any improvements located thereon as a result of its services or the use of its equipment; however, TSC has not included in its fee the cost of restoration of damage which may occur. If client desires or requires TSC to restore the site to its former condition, TSC will, upon written request, perform such additional work as is necessary to do so and client agrees to pay to TSC the cost thereof plus TSC's normal markup for overhead and profit.

4. CLIENT'S DUTY TO NOTIFY ENGINEER: Client represents and warrants that client has advised TSC of any known or suspected hazardous materials, utility lines and underground structures at any site at which TSC is to perform services under this Agreement.

5. DISCOVERY OF POLLUTANTS: TSC's services shall not include investigation for hazardous substances, materials or wastes or petroleum products. Hazardous materials, substances or wastes (all cumulatively referred to herein as "hazardous substances") includes those defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended, 42 U.S.C.§ 9601 et seq., ("CERCLA"), the Resource Conservation Recovery Act, 42 U.S.C. § 6901 et seq., as amended ("RCRA") or by a state or Federal Environmental Protection Agency ("EPA"), including but not limited to §§ 3.14 - 3.15 of the Illinois Environmental Protection Act, 415 ILCS 5/3.14 and 3.15 (West, 1994). In the event that hazardous substances are discovered and identified by TSC, TSC's sole duty shall be to notify client.

6. MONITORING: If this Agreement includes testing construction materials or observing any aspect of construction of improvements, TSC will report its test results and observations as more specifically set forth elsewhere in this Agreement. Client shall cause all tests and inspections of the site, materials and work to be timely and properly performed in accordance with the plans, specifications, contract documents, and TSC's recommendations. No claims for loss, damage or injury shall be brought against TSC unless all tests and inspections have been so performed and unless TSC's recommendations have been followed.

TSC's services shall not include determining or implementing the means, methods, techniques or procedures of work done by the contractor(s) being monitored or whose work is being tested. TSC's services shall not include the authority to accept or reject work or to in any manner supervise the work of any contractor. TSC's services or failure to perform same shall not in any way operate or excuse any contractor from the performance of its work in accordance with its contract. "Contractor" as used herein shall include subcontractors, suppliers, architects, engineers and construction managers.

7. ROOF INVESTIGATIONS: Should it be necessary to make roof cuts, Client agrees to provide a roofing contractor of client's choice to make such cuts, to remove samples as directed by TSC personnel and to promptly make necessary patches or repairs. In the event that a roof contractor is not so provided by client, client agrees that TSC may make and remove such cuts as TSC deems necessary in the course of the investigation and client assumes all risks of damage to the roof system and the building which may arise as a result thereof.

8. LIMITATIONS OF PROCEDURES, EQUIPMENT AND TESTS: Information obtained from borings, observations and analyses of sample materials shall be reported in formats considered appropriate by TSC unless directed otherwise by Client. Such information is considered evidence, but any inference or conclusion based thereon is, necessarily, an opinion also based on engineering judgment and shall not be construed as a representation of fact. Subsurface conditions may not be uniform throughout an entire site and ground water levels may fluctuate due to climatic and other variations. Construction materials may vary from the samples taken. Unless otherwise agreed in writing, the procedures employed by TSC are not designed to detect intentional concealment or misrepresentation of facts by others.

9. SAMPLE DISPOSAL: Unless otherwise agreed in writing, test specimens or samples will be disposed immediately upon completion of the test. All drilling samples or specimens will be disposed sixty (60) days after submission of TSC's report.

10. TERMINATION: This Agreement may be terminated by either party upon seven days prior written notice. In the event of termination, TSC shall be compensated by client for all services performed up to and including the termination date, including reimbursable expenses.

11. PAYMENT: Client shall be invoiced periodically for services performed. Client agrees to pay each invoice within thirty (30) days of its receipt. Client further agrees to pay interest on all amounts invoiced and not paid or objected to in writing for valid cause within sixty (60) days at the rate of twelve (12%) per annum (or the maximum interest rate permitted by applicable law, whichever is the lesser) until paid and TSC's costs of collection of such accounts, including court costs and reasonable attorney's fees.

12. WARRANTY: TSC's professional services will be performed, its findings obtained and its reports prepared in accordance with this Agreement and with generally accepted principles and practices. In performing its professional services, TSC will use that degree of care and skill ordinarily exercised under similar circumstances by members of its profession. In performing physical work in pursuit of its professional services, TSC will use that degree of care and skill ordinarily used under similar circumstances. This warranty is in lieu of all other warranties or representations, either express or implied. Statements made in TSC reports are opinions based upon engineering judgment and are not to be construed as representations of fact.

Should TSC or any of its employees be found to have been negligent in performing professional services or to have made and breached any express or implied warranty, representation or contract, client, all parties claiming through client and all parties claiming to have in any way relied upon TSC's services or work agree that the maximum aggregate amount of damages for which TSC, its officers, employees and agents shall be liable is limited to $50,000 or the total amount of the fee paid to TSC for its services performed with respect to the project whichever amount is greater.

In the event client is unwilling or unable to limit the damages for which TSC may be liable in accordance with the provisions set forth in the preceding paragraph, upon written request of client received within five days of client's acceptance of TSC's proposal together with payment of an additional fee in the amount of 5% of TSC's estimated cost for its services (to be adjusted to 5% of the amount actually billed by TSC for its services on the project at time of completion), the limit damages shall be increased to $500,000 or the amount of TSC's fee, whichever is the greater. This charge is not to be construed as being a charge for insurance of any type, but is increased consideration for the exposure to an award of greater damages.

13. INDEMNITY: Subject to the provisions set forth herein, TSC and client hereby agree to indemnify and hold harmless each other and their respective shareholders, directors, officers, partners, employees, agents, subsidiaries and division (and each of their heirs, successors, and assigns) from any and all claims, demands, liabilities, suites, causes of action, judgments, costs and expenses, including reasonable attorneys' fees, arising, or allegedly arising, from personal injury, including death, property damage, including loss of use thereof, due in any manner to the negligence of either of them or their agents or employees. In the event both are negligent or at fault, then any liability shall be apportioned between them pursuant to their pro rata share of negligence or fault. TSC and client further agree that their liability to any third party shall, to the extent permitted by law, be several and not joint. The indemnities provided hereunder shall not terminate upon the termination or expiration of this Agreement.

14. SUBPOENAS: TSC's employees shall not be retained as expert witnesses except by separate, written agreement. Client agrees to pay TSC pursuant to TSC's then current Fee Schedule for any TSC employee(s) subpoenaed by any party as an occurrence witness as a result of TSC's services.

15. OTHER AGREEMENTS: TSC shall not be bound by any provision or agreement requiring or providing for arbitration of disputes or controversies arising out of this Agreement or any provision wherein TSC waives any rights to a mechanics lien, or any provision that conditions TSC's right to receive payment for its services upon payment to client by any third party. These General Conditions are notice, where required, that TSC shall file a lien whenever necessary to collect past due amounts. This Agreement contains the entire understanding between the parties. Client acknowledges that no representations, warranties, undertakings or promises have been made other than and except those expressly contained herein. All understandings and agreements heretofore had among the parties respecting this transaction, are merged in this Agreement. Unless expressly accepted by TSC in writing prior to delivery of TSC's services, client shall not add any conditions other than those contained in this Agreement. TSC's offer to provide services is conditioned on client's acceptance of all the terms and conditions set forth in these General Conditions without alteration or modification of any kind. The unenforceability or invalidity of any provision or provisions shall not render any other provision or provisions unenforceable or invalid. This Agreement shall be construed and enforced in accordance with the laws of the State of Illinois. The parties hereto consent to jurisdiction and venue in an appropriate Illinois State Court in and for the County of DuPage, Wheaton, Illinois or the Federal District Court for the Northern District of Illinois. Paragraph headings are for convenience only and shall not be construed as limiting the meaning of the provisions contained in these General Conditions.

rev. 5/96

APPENDIX

SUMMARY OF PCC PAVEMENT THICKNESS
REPORT OF SUBGRADE TEST DATA

PCC PAVEMENT DISTRESS MAP

LEGEND DISTRESS MAP SYMBOLS

DISTRESS TYPE DEFINITIONS

PHOTOGRAPHS OF PAVEMENT DISTRESS TYPES

PHOTOGRAPHS OF CORE SAMPLES

IDOT TEXTURAL AND AASHTO
SOIL CLASSIFICATION SYSTEMS

POROUS GRANULAR EMBANKMENT,
SUBGRADE (PGES)

SOIL TEST DATA SHEETS

IBR DATA SHEETS

SUMMARY REPORT ON PAVEMENT, BASE AND
SUBBASE DESIGN (FORM BD-507A)

MOISTURE DENSITY RELATIONSHIPS

GRADATION SHEETS

LEGEND FOR BORING LOGS

BORING LOGS

PEDOLOGICAL MAP

BORING LOCATION PLAN

Maple Avenue Improvements
Carpentersville, Illinois
TSC Job No. 40,955

SUMMARY OF PCC PAVEMENT THICKNESS

Core No.	Station and Offset	Bituminous Concrete Patch (mm)	P.C. Concrete (mm)	Well-graded Crushed Sand and Gravel Base Course (mm)
1	11+280 3.0 m RT	-	180	530
2	11+367 3.0 m RT	-	180 [V]	200
3	11+454 2.0 m RT	30	100	380
4	11+550 2.0 m LT	-	170 [H]	250
5	11+639 3.0 m RT	-	180 [V]	120
6	11+725 3.0 m LT	70 [H]	0	440
7	11+824 3.0 m RT	-	190	330
8	11+908 3.0 m LT	60 [1]	0	290 [2]

[V] Contained vertical fracture.
[H] Contained horizontal fracture.
[1] Top 0.02 m was severely fractured.
[2] Appeared to be primarily crushed concrete.

TESTING SERVICE CORPORATION
457 EAST GUNDERSEN DRIVE
CAROL STREAM, ILLINOIS 60188

DATE SAMPLED: May 5, 1997 L - 40,955

CLIENT: Hampton, Lenzini and Renwick, Inc.
Elgin, Illinois

PROJECT: Maple Avenue Improvements
Carpentersville, Illinois

REPORT OF SUBGRADE TEST DATA

Core No.	Station and Offset	Sample Depth (meters)	W.C.[1]	Qu (kPa)[2]*	Dry Unit Weight (kN/m^3)	Soil Description
1	11+280 3.0 m RT	0.7-1.0	21.7	48	16.2	Soft dark brown CLAY LOAM, very moist A-6
2	11+367 3.0 m RT	0.4-0.9	T - 19.3	287	15.8	Very tough dark brown CLAY, Possible fill, moist A-6
			M - 12.1	-	-	Brown SANDY LOAM, moist A-2-4
			B - 26.2	144	14.9	Tough brown CLAY, very moist A-7-6
3	11+454 2.0 m RT	0.5-1.0	T - 19.7	144	17.1	FILL-brown and gray CLAY, moist A-6
			B - 17.9	263	17.1	Very tough brown CLAY, moist A-6
4	11+550 2.0 m LT	0.4-0.9	22.5	287	16.2	Very tough brown and gray CLAY, moist A-7-6
5	11+639 3.0 m RT	0.3-0.9	25.0	239	15.8	Very tough brown CLAY, moist A-7-6
6	11+725 3.0 m LT	0.5-1.0	18.6	168	17.6	Tough brown and gray CLAY, moist A-6
7	11+824 3.0 m RT	0.5-1.0	22.4	192	16.3	Tough brown and gray CLAY, moist A-6
8	11+908 3.0 m LT	0.4-0.7	T - 15.0	431+	18.8	FILL-brown and gray CLAY, moist A-6
			B - 10.9	431+	20.4	Hard brown CLAY LOAM, moist A-6/A-4

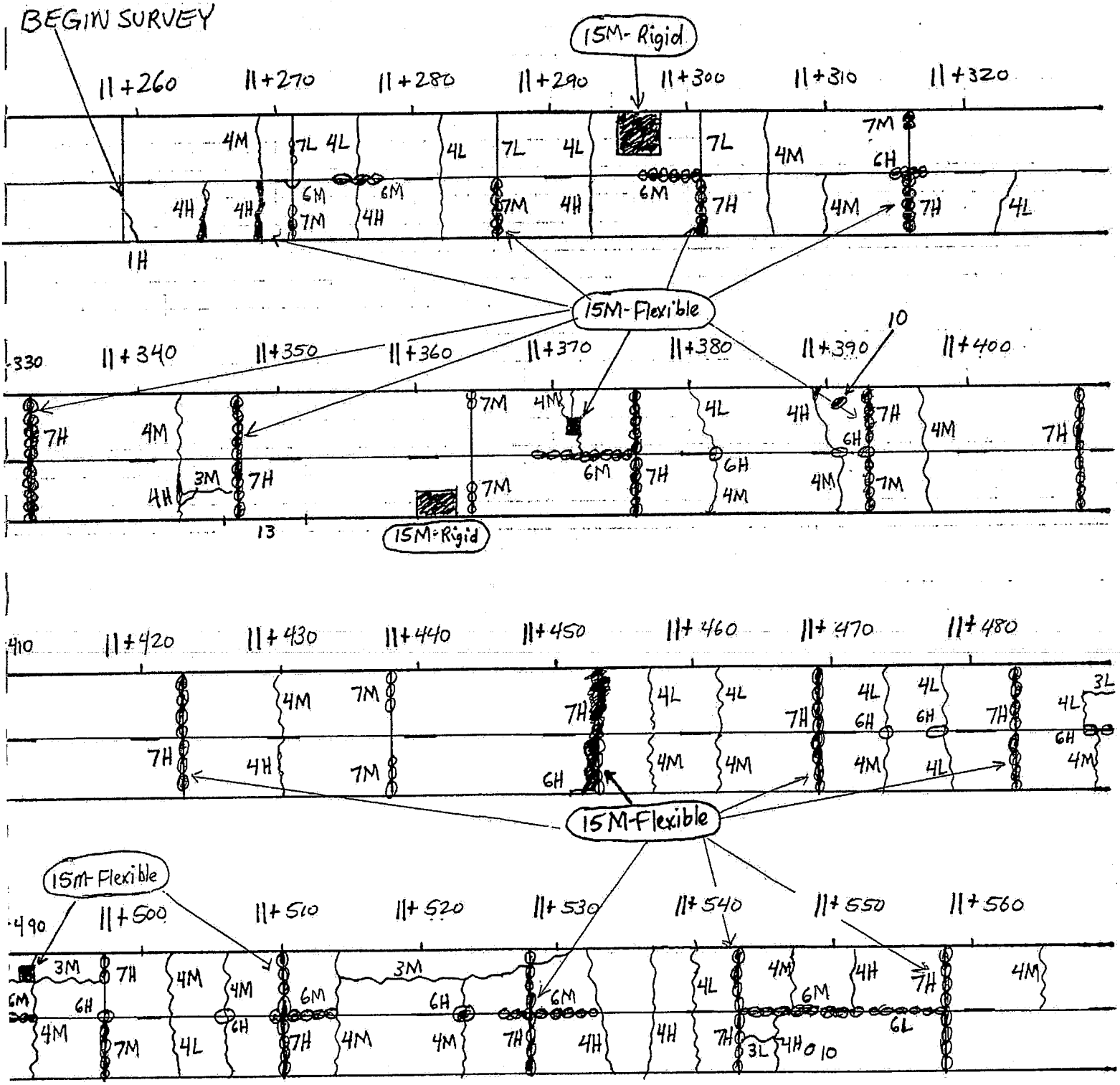
[1] Water Content
[2] Unconfined Compressive Strength in Kilopascals
* Based on readings made with a calibrated pocket penetrometer
T - Top of sample
M - Middle of sample
B - Bottom of sample

TESTING SERVICE CORPORATION
457 EAST GUNDERSEN DRIVE • CAROL STREAM, ILLINOIS 60188-2492
FAX: (708) 653-2726 • Telephone (708) 653-3920

Project No. 40,955 Sheet 1 of 3
Project Maple Ave. Improvements
Subject Jointed Concrete Pavement-Distress Survey Computed _____ Date _____ Checked _____

PCC PAVEMENT Distress Map

scale 1:400 metric



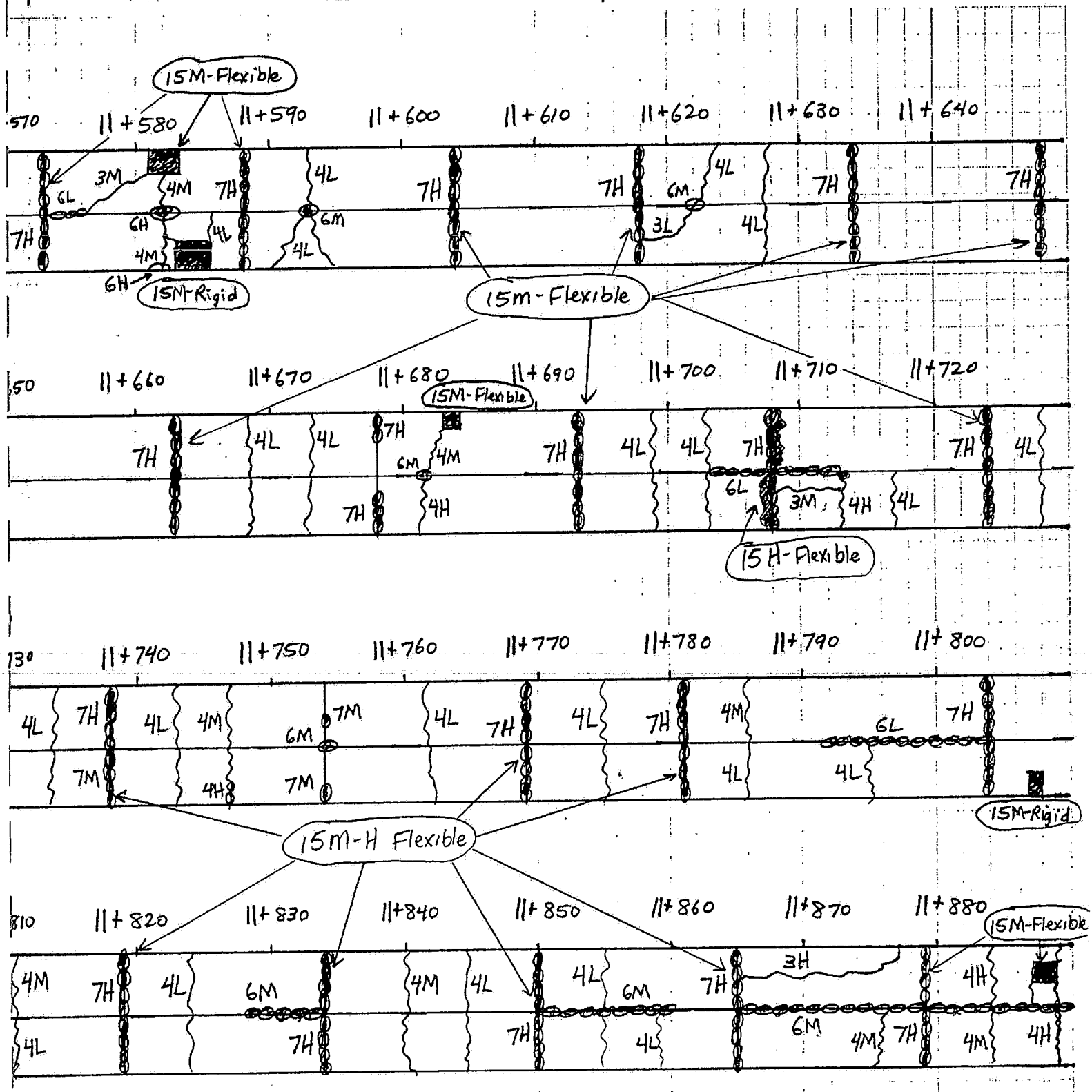
TESTING SERVICE CORPORATION
457 EAST GUNDERSEN DRIVE • CAROL STREAM, ILLINOIS 60188-2492
FAX: (708) 653-2726 • Telephone (708) 653-3920

Project No. 40,955 Sheet 2 of 3

Project Maple Ave. Improvements

Subject Jointed Concrete Pavement-Distress Survey Computed _____ Date _____ Checked _____

PCC PAVEMENT Distress Map



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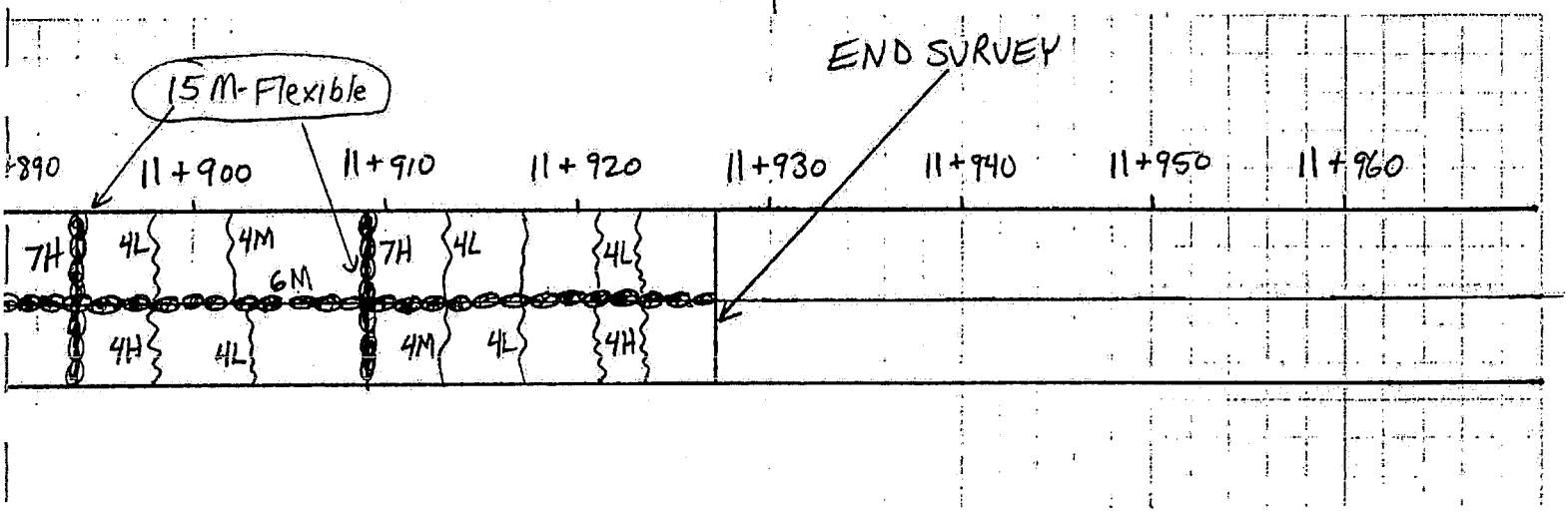
Project No. 40,955 Sheet 3 of 3

Project Maple Ave. Improvements

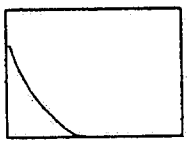
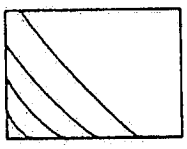
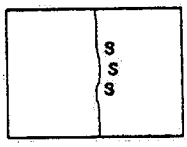
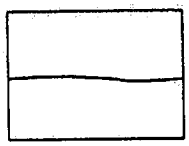
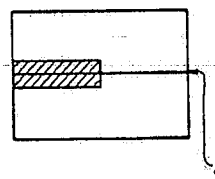
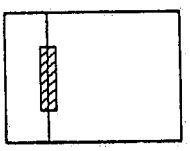
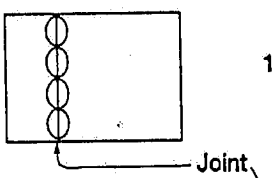
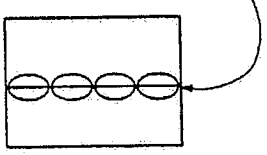
Subject Jointed Concrete Pavement-Distress Survey Computed _____ Date _____ Checked _____

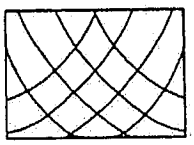
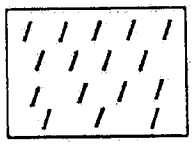
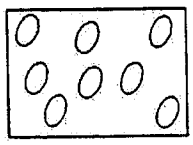
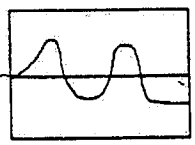
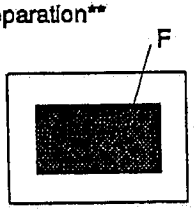
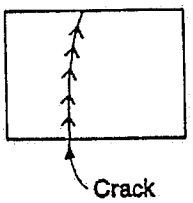
Distress Map



LEGEND

Distress Map Symbols

Distress Type	Symbol
1. Corner Breaks (Number) L, M, H*	
2. Durability "D" Cracking (Number of Affected Slabs) (Square Meters) L, M, H*	
3. Longitudinal Cracking (Meters) L, M, H* S - Sealed	
4. Transverse Cracking (No. of Cracks and Length (Meters)) L, M, H*	
5a. Joint Seal Damage of Transverse Joints (Number) L, M, H*	
5b. Joint Seal Damage of Longitudinal Joints (Meters)	
6. Spalling of Longitudinal Joints (Meters) L, M, H*	
7. Spalling of Transverse Joints (Number of Joints and Length (Meters)) L, M, H*	

Distress Type	Symbol
8a. Map Cracking 8b. Scaling (Square Meters)	
9. Polished Aggregate (Square Meters) No severity levels	
10. Popouts (Number) No severity levels	
11. Blowups (Number) No severity levels	
12. Faulting of Transverse Joints and Cracks**	
13. Lane - to - Shoulder Dropoff**	
14. Lane - to - Shoulder Separation**	
15. Patch/Patch Deterioration (Square Meters and Number) L, M, H* F - Flexible R - Rigid	
16. Water Bleeding and Pumping (Number of Occurences and Length of Affected Pavement (Meters)) No severity levels	

*Low, Moderate, and High severity levels.
**Not drawn on distress maps.

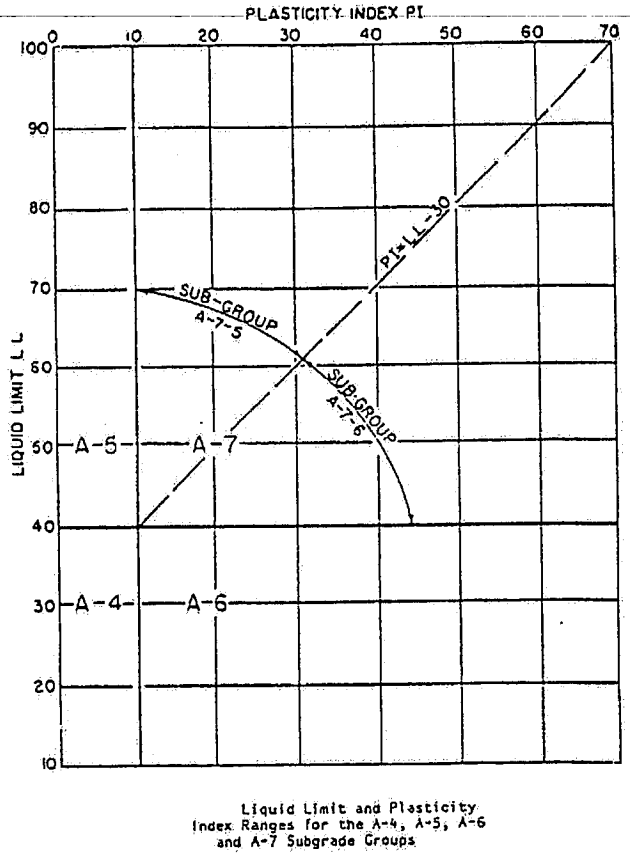
FIGURE 6

AASHTO CLASSIFICATION CHART

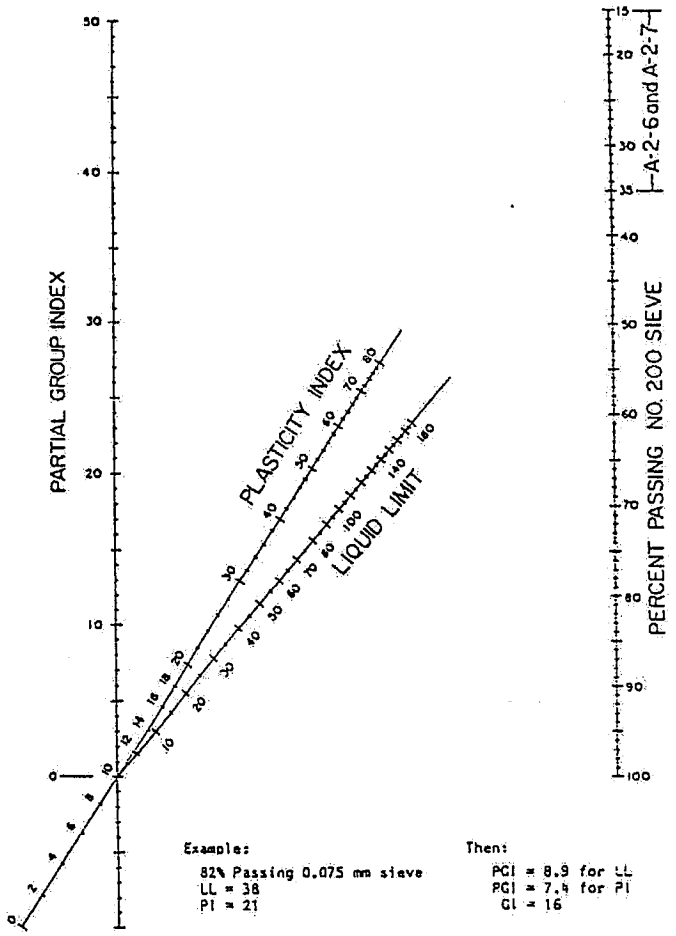
Group Index (GI) = (F-35)[0.2+0.005 (LL-40)]+0.01(F-15)(PI-10)
where F = % Passing 0.075 mm sieve, LL = Liquid Limit,
and PI = Plasticity Index

When working with A-2-6 and A-2-7 subgroups the Partial Group Index (PGI) is determined from the PI only.

When the combined Partial Group Indices are negative, the Group Index should be reported as zero.



Liquid Limit and Plasticity Index Ranges for the A-4, A-5, A-6 and A-7 Subgrade Groups



Example:
82% Passing 0.075 mm sieve
LL = 38
PI = 21

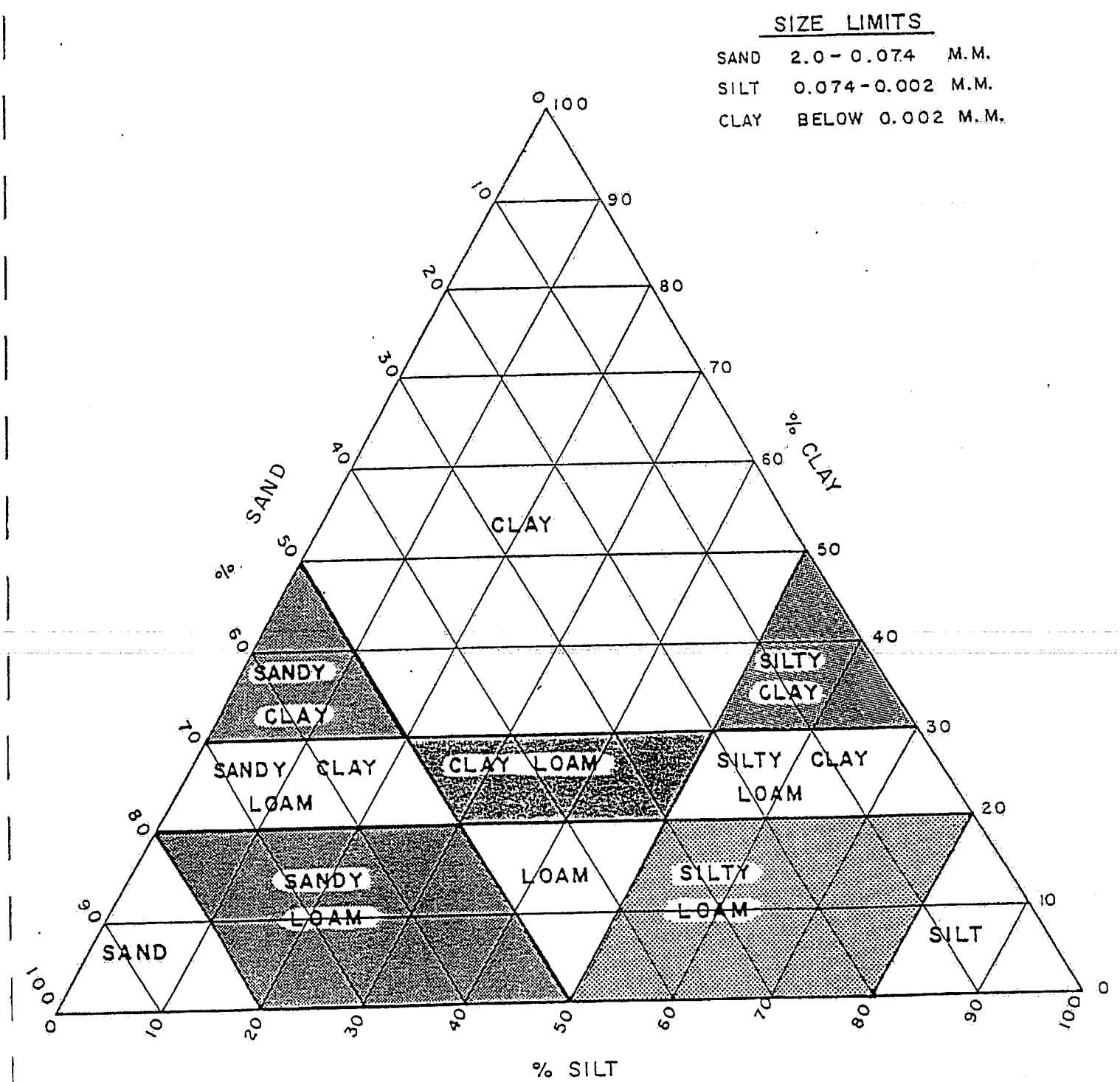
Then:
PGI = 8.9 for LL
PGI = 7.4 for PI
GI = 16

AASHTO SOIL CLASSIFICATION SYSTEM

General Classification	*Granular Materials (35% or less passing No. 200)*							*Silt-Clay Materials (more than 35% passing No. 200)*			
	A-1			*A-2*							*A-7*
Group Classification	*A-1-a*	*A-1-b*	*A-3*	*A-2-4*	*A-2-5*	*A-2-6*	*A-2-7*	*A-4*	*A-5*	*A-6*	*A-7-5, A-7-6*
Sieve analysis, % passing:											
No. 10	50 max	.....	.....	.....	.....	.....	.....	.....	.....	.....	
No. 40	30 max	50 max	51 min	.....	.....	.....	.....	.....	.....	.....	
No. 200	15 max	25 max	10 max	35 max	35 max	35 max	35 max	36 min	36 min	36 min	36 min
Characteristics of fraction passing No. 40:											
Liquid limit	.....		.....	40 max	41 min	40 max	41 min	40 max	41 min	40 max	41 min
Plasticity index	6 max		N.P.	10 max	10 max	11 min	11 min	10 max	10 max	11 min	11 min†
Usual types of significant constituent materials	Stone fragments, gravel and sand		Fine sand	Silty or clayey gravel and sand				Silty soils		Clayey soils	
General rating as subgrade	Excellent to good							Fair to poor			

† Plasticity index of A-7-5 subgroup is equal to or less than LL minus 30. Plasticity index of A-7-6 subgroup is greater than LL minus 30.

I D H TEXTURAL CLASSIFICATION CHART



TESTING SERVICE CORPORATION
457 East Gundersen Drive
Carol Stream, Illinois

TSC Job No. L - 40,955
May 27, 1997

CLIENT: Hampton, Lenzini and Renwick
380 Shepard Drive
Elgin, Illinois

PROJECT: Maple Avenue Improvements
Carpentersville, Illinois

SOIL TEST DATA

STATION AND OFFSET		10+190 3.0 m LT	10+370 3.0 m RT	10+730 2.0 m LT	10+830 2.0 m LT	10+910 2.0 m RT
BORING NUMBER		2	4	8	9	10
SAMPLE NUMBER		2	1	2	2	BAG
DEPTH IN METERS		0.8 - 1.2	0.3 - 0.8	0.8 - 1.2	0.8 - 1.2	0-.3 - 1.0
HRB CLASSIFICATION & GROUP INDEX		A-6(2)	A-6(3)	A-6	A-7-6	A-2-6
GRAIN SIZE CLASSIFICATION		Sandy Loam	Black Loam	Black Loam	Clay Loam	Black Sandy Loam
GRADATION - PASSING 1" SIEVE %						100
GRADATION - PASSING 3/4" SIEVE %			100			96
GRADATION - PASSING 3/8" SIEVE %			99			90
GRADATION - PASSING # 4 SIEVE %			97			84
GRADATION - PASSING # 10 SIEVE %		100	95			80
GRADATION - PASSING # 40 SIEVE %		89	80			65
GRADATION - PASSING # 100 SIEVE %		43	61			35
GRADATION - PASSING # 200 SIEVE %		38	58			27
SAND %		62	42			73
SILT %		25	45			21
CLAY % (<0.002 MM)		13	13			6
LIQUID LIMIT %		28	26	39	52	25
PLASTIC LIMIT %		9	15	18	14	12
PLASTICITY INDEX %		19	11	21	38	13
NATURAL MOISTURE CONTENT %						
LIQUIDITY INDEX %						
BEARING RATIO % (SOAKED IBR)						5.2
STANDARD DRY DENSITY AASHTO T-99 Kg/m^3						1964.7
OPTIMUM MOISTURE %						10.1
ORGANIC CONTENT	L-O-I %		4.1	11.4		
	WET COMBUSTION %		2.7	4.4		

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Carpentersville, Illinois

SOIL TEST DATA

STATION AND OFFSET		11+00 2.0 m LT	11+180 2.0 m LT	11+950 2.0 m RT	DETENTION BASIN	DETENTION BASIN
BORING NUMBER		11	13	15	18	19
SAMPLE NUMBER		1	BAG	1	3	4
DEPTH IN METERS		0.3 - 0.8	0.3 - 1.0	0.3 - 0.8	1.8 - 2.3	2.6 - 3.0
HRB CLASSIFICATION & GROUP INDEX		A-7-6(11)	A-2-7	A-6(4)	A-1-b	A-1-b
GRAIN SIZE CLASSIFICATION		Black Loam	Black Sandy Loam	Silty Loam	Sand and Gravel	Sand, little gravel
GRADATION - PASSING 1" SIEVE %					100	100
GRADATION - PASSING 3/4" SIEVE %		100	100	100	89	95
GRADATION - PASSING 3/8" SIEVE %		98	85	96	72	93
GRADATION - PASSING # 4 SIEVE %		98	74	94	66	82
GRADATION - PASSING # 10 SIEVE %		98	61	91	59	69
GRADATION - PASSING # 40 SIEVE %		93	44	82	43	40
GRADATION - PASSING # 100 SIEVE %		66	32	73	17	14
GRADATION - PASSING # 200 SIEVE %		58	29	68	11	9
SAND %		42	71	32		
SILT %		39	23	52		
CLAY % (<0.002 MM)		19	6	16		
LIQUID LIMIT %		42	53	24		
PLASTIC LIMIT %		17	26	13		
PLASTICITY INDEX %		25	27	11		
NATURAL MOISTURE CONTENT %						
LIQUIDITY INDEX %						
BEARING RATIO % (SOAKED IBR)			4.8			
STANDARD DRY DENSITY AASHTO T-99 Kg/m^3			1923.1			
OPTIMUM MOISTURE %			11.8			
ORGANIC CONTENT	L-O-I %	8.9				
	WET COMBUSTION %	4.7				

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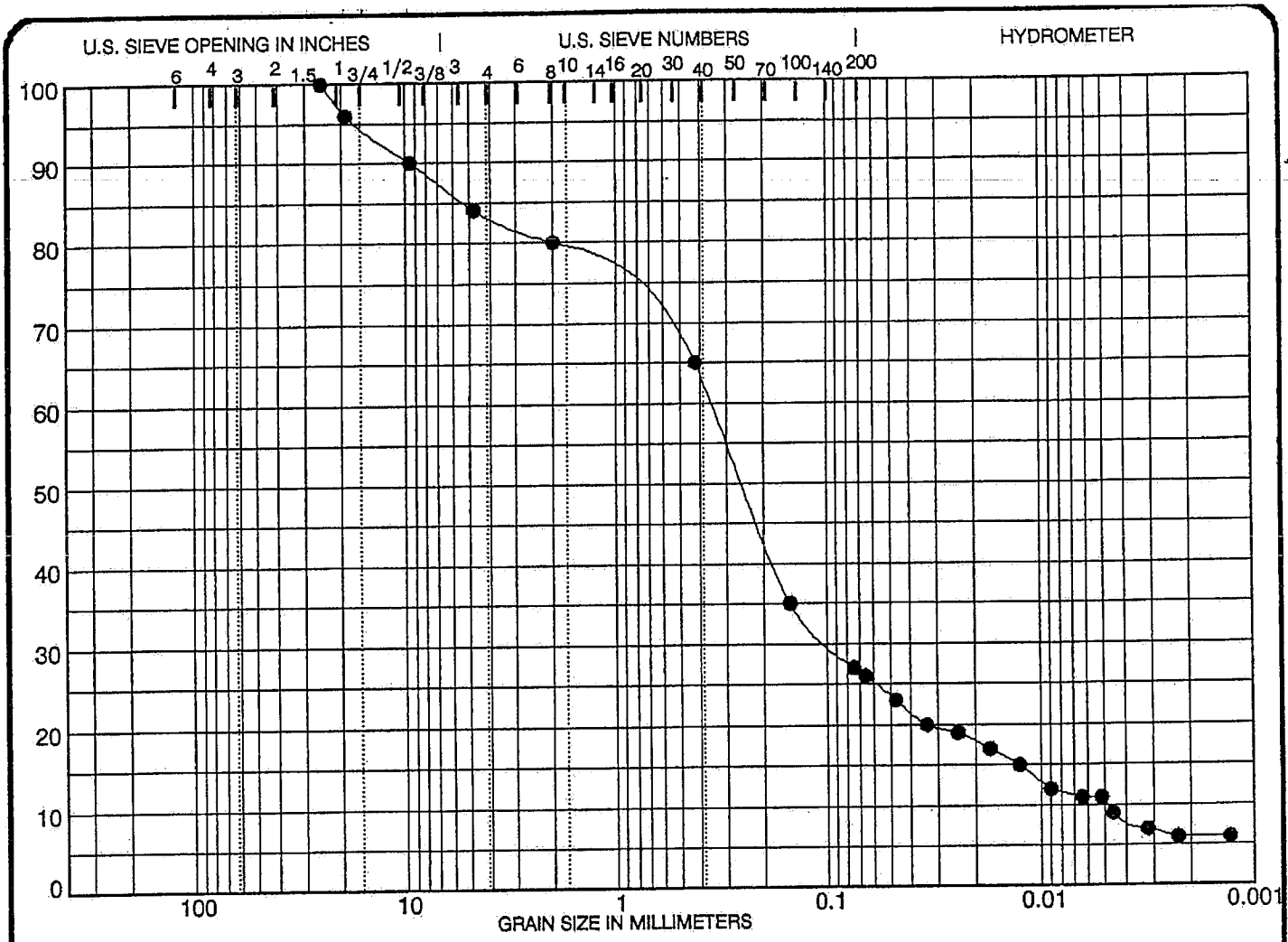
Carpentersville, Illinois

SOIL TEST DATA

STATION AND OFFSET		DETENTION BASIN	DETENTION BASIN			
BORING NUMBER		20	21			
SAMPLE NUMBER		4	6			
DEPTH IN METERS		2.6 I - 3.0	4.1 - 4.46			
HRB CLASSIFICATION & GROUP INDEX		A-1-a	A-1-a			
GRAIN SIZE CLASSIFICATION		Sand and Gravel	Sand and Gravel			
GRADATION - PASSING 1" SIEVE %		89	86			
GRADATION - PASSING 3/4" SIEVE %		76	86			
GRADATION - PASSING 3/8" SIEVE %		63	71			
GRADATION - PASSING # 4 SIEVE %		48	58			
GRADATION - PASSING # 10 SIEVE %		35	48			
GRADATION - PASSING # 40 SIEVE %		19	7			
GRADATION - PASSING # 100 SIEVE %		9	4			
GRADATION - PASSING # 200 SIEVE %		8	3			
SAND %						
SILT %						
CLAY % (<0.002 MM)						
LIQUID LIMIT %						
PLASTIC LIMIT %						
PLASTICITY INDEX %						
NATURAL MOISTURE CONTENT %						
LIQUIDITY INDEX %						
BEARING RATIO % (SOAKED IBR)						
STANDARD DRY DENSITY AASHTO T-99 Kg/m^3						
OPTIMUM MOISTURE %						
ORGANIC CONTENT	L-O-I %					
	WET COMBUSTION %					



AASHTO	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

LOCATION
Boring: 10
Depth: 0.3-1.0m

CLASSIFICATION	
HRB & GROUP INDEX :	A-2-6
GRAIN SIZE :	SandyLoam
UNIFIED :	SM

%GRAVEL	%SAND	%SILT	%CLAY
21	52	21	6

Atterberg Limits		
LL	PL	PI
25	12	13

Standard Moisture/Density T99		
Max % Wet	Max % Dry	Opt MC%
2163.2	1964.7	10.1

SIEVE	% PASS
3 inch	100
2	100
1 1/2	100
1	100
3/4	96
3/8	90
# 4	84
# 10	80
# 40	65
# 100	35
# 200	27

	A	B
Molded Moist %	9.6	10.2
Compaction %	100.5	99.9
Swell %	1.0	1.2
Soaked: Surface %	14.5	13.6
: Center %	13.1	11.2

BEARING RATIO VALUES		
0.1" Penetration	4.9	6.1
0.2" Penetration	5.2	6.5
0.3" Penetration	5.2	6.7
0.4" Penetration	5.1	6.7
0.5" Penetration	5.2	6.9
Illinois Bearing Ratio Value:		5.2

PROJECT LOCATION: Maple Avenue - Carpentersville, Illinois

JOB NO. L - 40,955

DATE May 20, 1997

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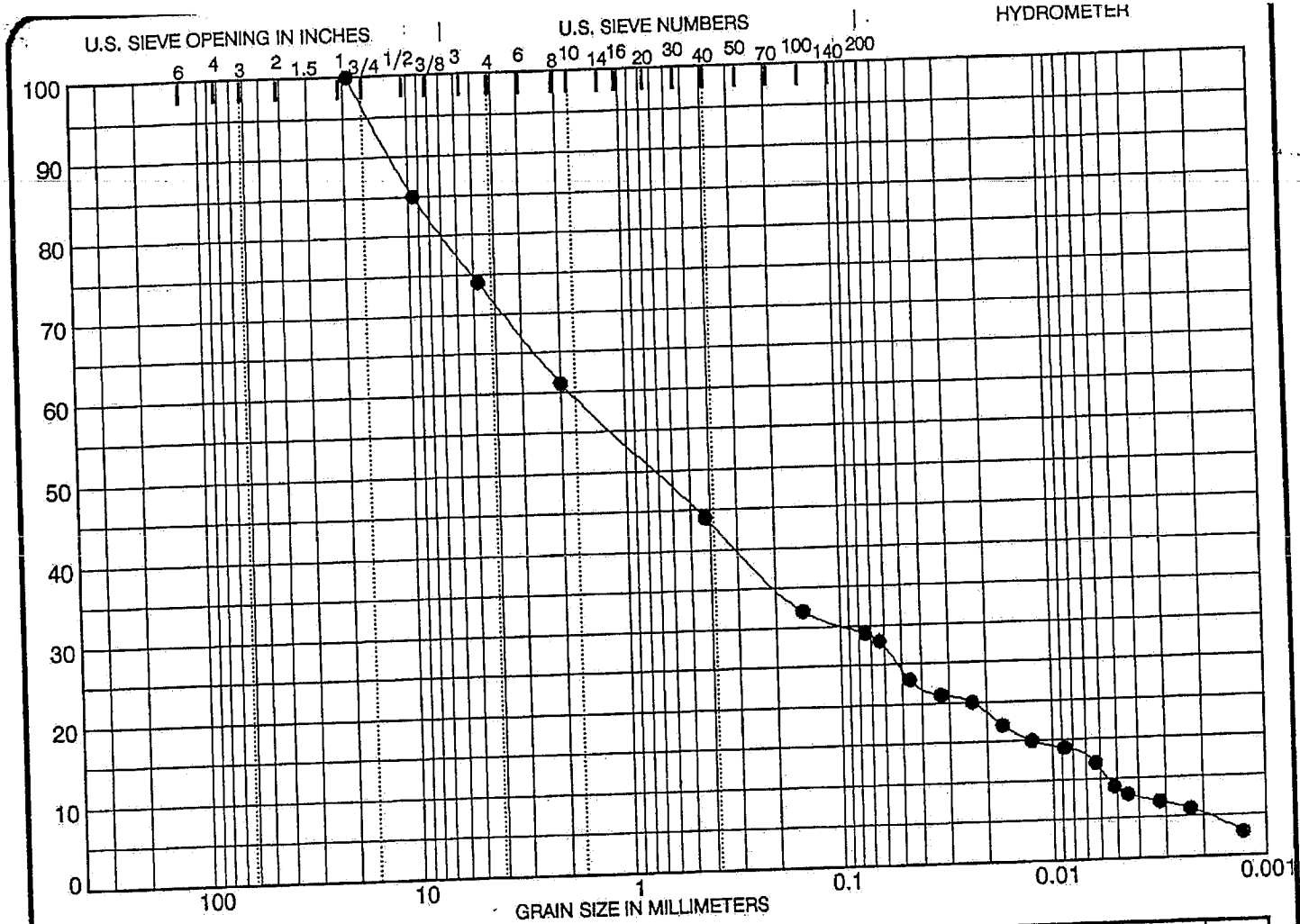
IBR DATA SHEET

Testing Service Corporation

CAROL STREAM



AASHTO	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

LOCATION

Boring: 13

Depth: 0.3-1.0m

CLASSIFICATION	
HRB & GROUP INDEX :	A-2-7
GRAIN SIZE :	SandyLoam
UNIFIED :	SM

%GRAVEL	%SAND	%SILT	%CLAY
41	30	24	5

Atterberg Limits

LL	PL	PI
53	26	27

Standard Moisture/Density T99

Max γ_{Wet}	Max γ_{Dry}	Opt MC%
2150.0	1923.1	11.8

SIEVE	% PASS
3 inch	100
2	100
1 1/2	100
1	100
3/4	100
3/8	85
# 4	74
# 10	61
# 40	44
# 100	32
# 200	29

	A	B
Molded Moist %	11.0	11.0
Compaction %	100.8	100.8
Swell %	1.0	1.7
Soaked: Surface %	17.5	19.1
: Center %	12.9	14.4

BEARING RATIO VALUES		
0.1" Penetration	4.3	4.9
0.2" Penetration	4.8	5.4
0.3" Penetration	5.2	5.6
0.4" Penetration	5.6	5.8
0.5" Penetration	5.9	6.0
Illinois Bearing Ratio Value:		4.8

PROJECT LOCATION Maple Avenue - Carpentersville, Illinois

JOB NO. L - 40,955

DATE May 20, 1997

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IBR DATA SHEET

Testing Service Corporation

CAROL STREAM

BD-507A-REV.65

STATE OF ILLINOIS

Department of Public Works and Buildings
Division of Highways

SUMMARY REPORT ON PAVEMENT, BASE AND SUB-BASE DESIGN

STATE JOB NUMBER _____ PROJECT STPM-7003(223) ROUTE _____

SECTION 95-00049-00-PV CITY OR COUNTY _____ DATE _____

ADT _____ YEAR _____ DESIGN PERIOD _____ CLASS HIGHWAY _____

PASSENGER CARS PER DAY _____ TRUCKS S.U PER DAY _____ TRUCKS M.U. PER DAY _____

PAVEMENT STRUCTURE:

TYPE SURFACE COURSE _____ THICKNESS _____

TYPE BASE COURSE _____ THICKNESS _____

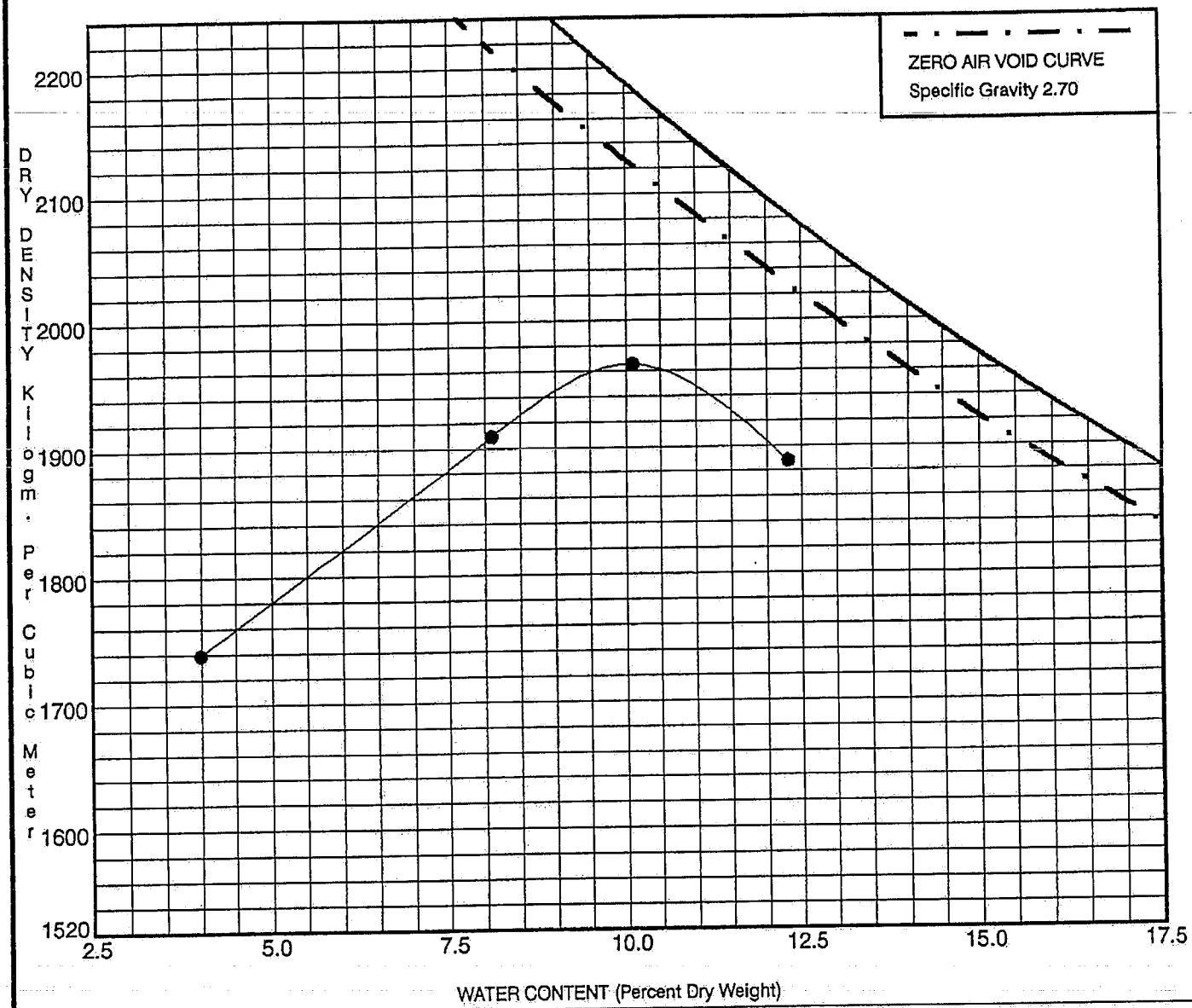
TYPE SUB-BASE MATERIAL _____ THICKNESS _____

STA. TO STA.	10+050 to 12+140			
* STA. OF TEST	11+180, 11+950			
* DRAINAGE CLASS	Fair - Poor			
* AVE. FROST PENETRATION	1.14 meters			
GRAIN SIZE CLASSIFICATION	Clay Loam, Loam, Sandy Loam, Silty Loam			
H R B CLASS AND GROUP INDEX	A-7-6, A-6, A-2-4, A-2-6, A-2-7			
* PERCENT SILT	52			
STD. DRY DENSITY AASHTO T99	1923.1 Kg.m^3			
BEARING RATIO	4.8 and 5.2 Test Results 3.0 Design (max.)			
OPTIMUM MOISTURE	11.8			

REMARKS:

See Recommendations section of report for subgrade remedial treatment and placement of underdrains.

* INDICATES WORST CONDITION WITH THE ABOVE STATION LIMITS



SPECIMEN IDENTIFICATION	CLASSIFICATION
IBR	Black SANDY LOAM, A-2-6, (SM)
Boring 10	
Depth 0.3-1.0m	

MOISTURE/DENSITY RELATIONSHIP		NOTES :
X	Standard ASTM D698/AASHTO T99	
	Modified ASTM D1557/AASHTO T180	
Maximum Dry Density (kg/m3)	1964.7	
Optimum Water Content (%)	10.1	

PROJECT LOCATION: **Maple Avenue**, **Carpentersville, Illinois**

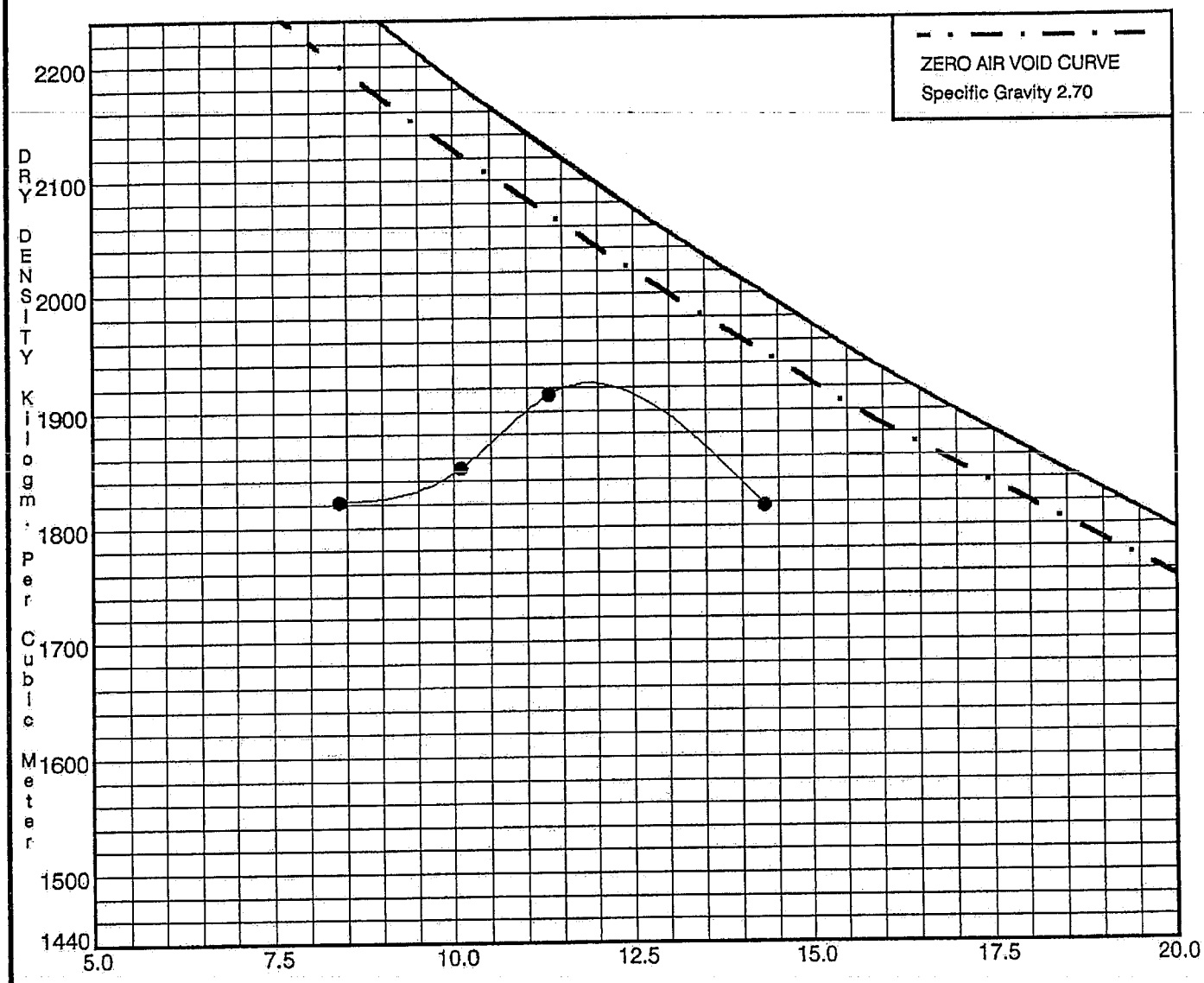
JOB NO. L - 40,955

DATE May 20, 1997

MOISTURE-DENSITY RELATIONSHIP

Testing Service Corporation

CAROL STREAM



SPECIMEN IDENTIFICATION	CLASSIFICATION
IBR	Black SANDY LOAM, A-2-7, (SM)
Boring 13	
Depth 0.3-1.0m	

MOISTURE/DENSITY RELATIONSHIP		NOTES :
X	Standard ASTM D698/AASHTO T99	
	Modified ASTM D1557/AASHTO T180	
Maximum Dry Density (kg/m3)	1923.1	
Optimum Water Content (%)	11.8	

PROJECT Maple Avenue
LOCATION Carpentersville, Illinois

JOB NO. L - 40,955
DATE May 20, 1997

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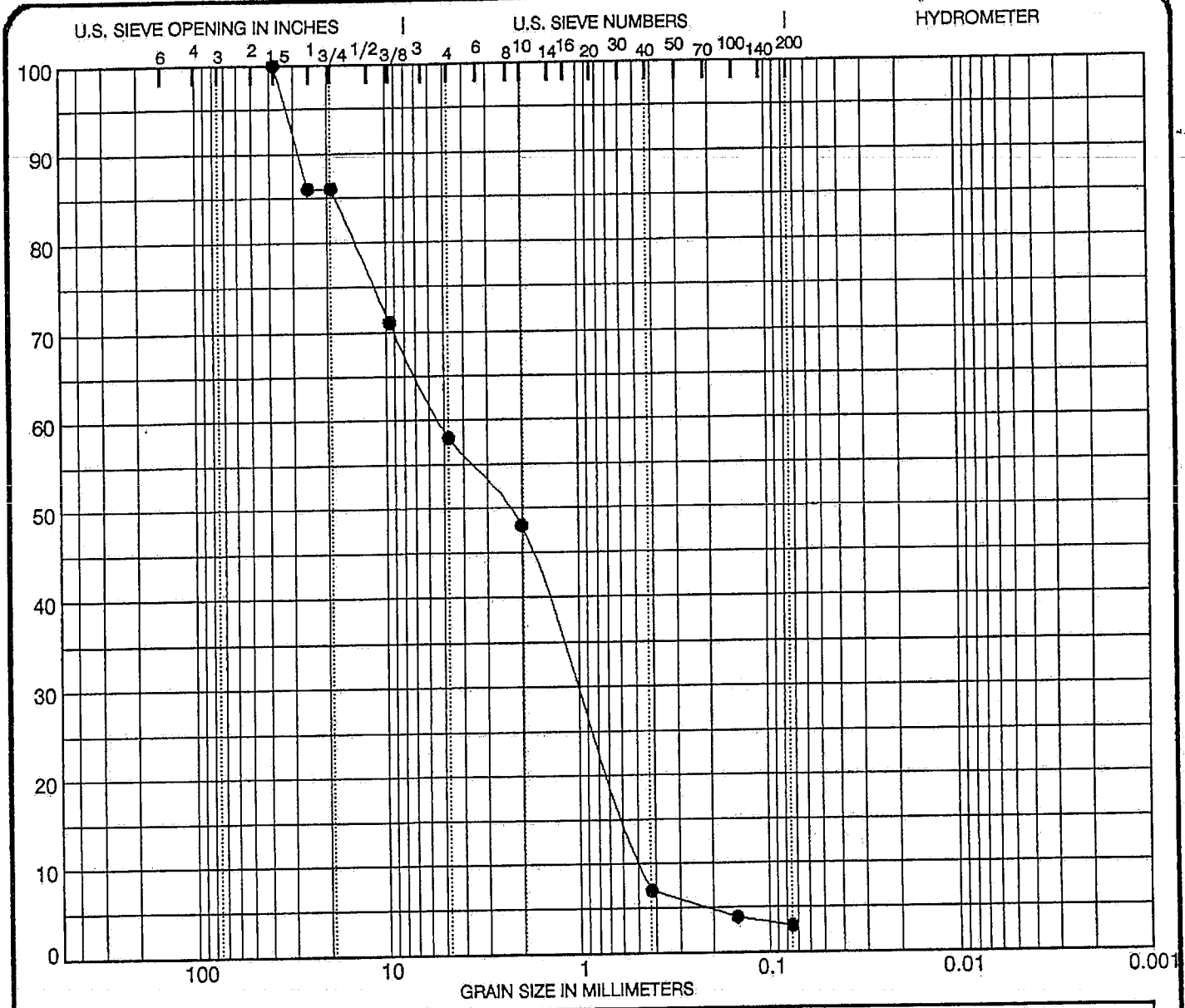
MOISTURE-DENSITY RELATIONSHIP

Testing Service Corporation
CAROL STREAM



COBBLES	GRAVEL		SAND			ASTM D 422
	coarse	fine	coarse	medium	fine	

SPECIMEN IDENTIFICATION	SIEVE	% PASS	SPECIFIED PERCENT PASSING
Boring: 21	3"	100	
Sample: 6	2"	100	
	1-1/2"	100	
	1"	86	
NOTES :	3/4"	86	
	3/8"	71	
	#4	58	
	#10	48	
	#40	7	
	#100	4	
	#200	3	

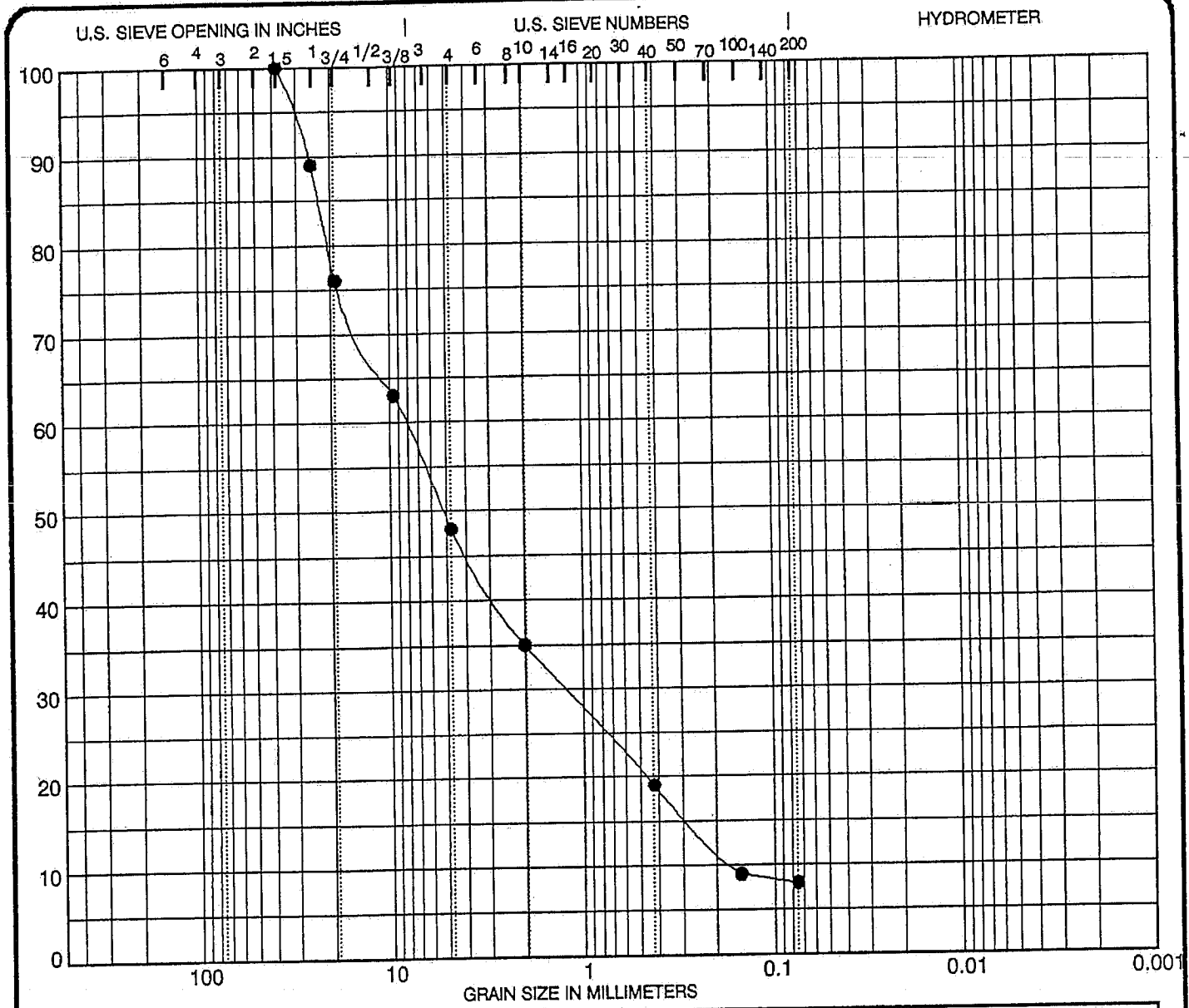
PROJECT Maple Avenue -
LOCATION Carpentersville, Illinois

JOB NO. L - 40,955
DATE May 20, 1997

8

GRADATION SHEET

Testing Service Corporation
CAROL STREAM



COBBLES	GRAVEL		SAND			ASTM D 422
	coarse	fine	coarse	medium	fine	

SPECIMEN IDENTIFICATION	SIEVE	% PASS	SPECIFIED PERCENT PASSING
Boring: 20	3"	100	
Sample: 4	2"	100	
	1-1/2"	100	
	1"	89	
NOTES :	3/4"	76	
	3/8"	63	
	#4	48	
	#10	35	
	#40	19	
	#100	9	
	#200	8	

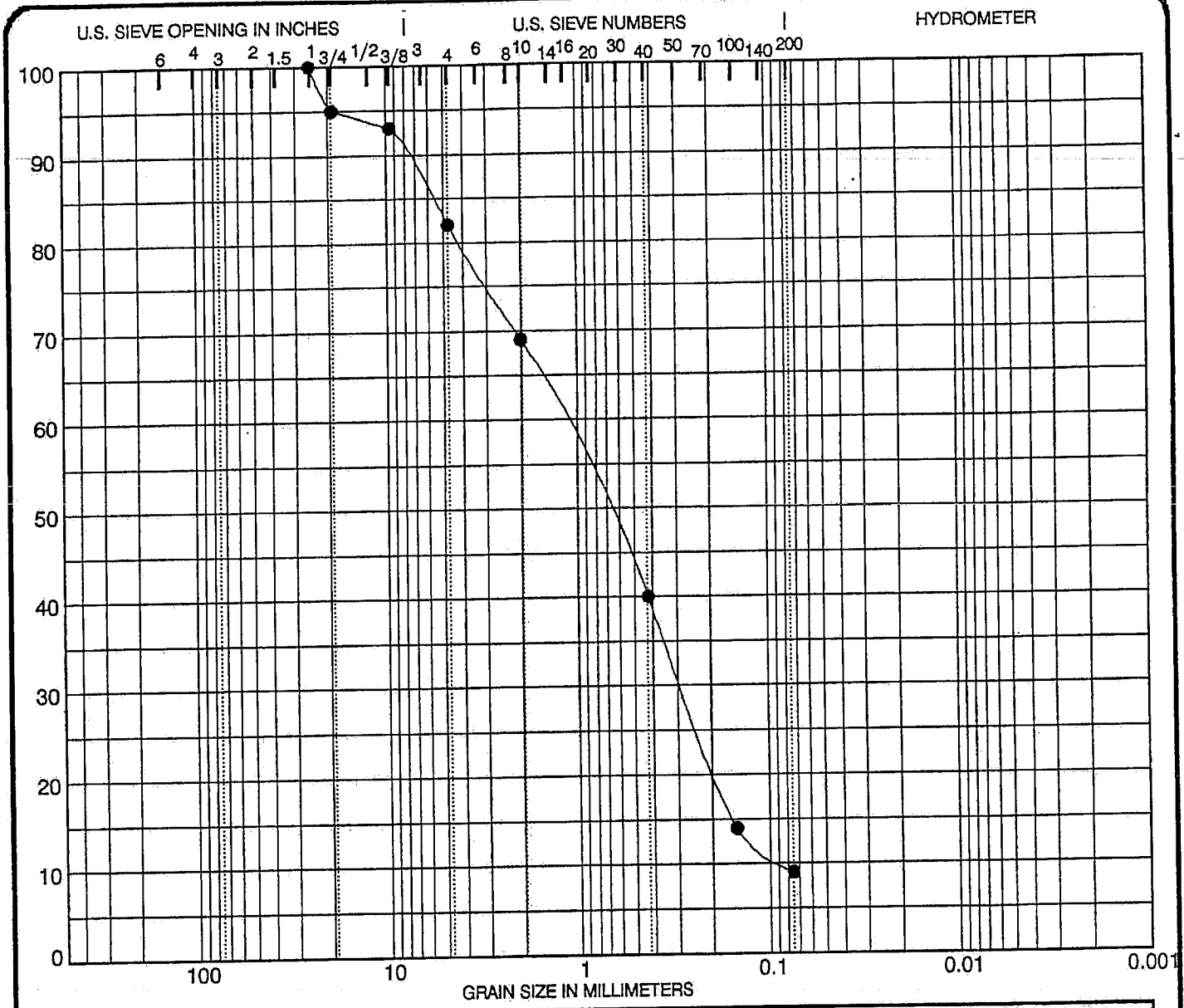
PROJECT Maple Avenue -
LOCATION Carpentersville, Illinois

JOB NO. L - 40,955
DATE May 20, 1997

7

GRADATION SHEET

Testing Service Corporation
CAROL STREAM



COBBLES	GRAVEL		SAND			ASTM D 422
	coarse	fine	coarse	medium	fine	

SPECIMEN IDENTIFICATION	SIEVE	% PASS	SPECIFIED PERCENT PASSING
Boring: 19	3"	100	
Sample: 4	2"	100	
	1-1/2"	100	
	1"	100	
NOTES :	3/4"	95	
	3/8"	93	
	#4	82	
	#10	69	
	#40	40	
	#100	14	
	#200	9	

PROJECT LOCATION Maple Avenue - Carpentersville, Illinois

JOB NO. L - 40,955

DATE May 20, 1997

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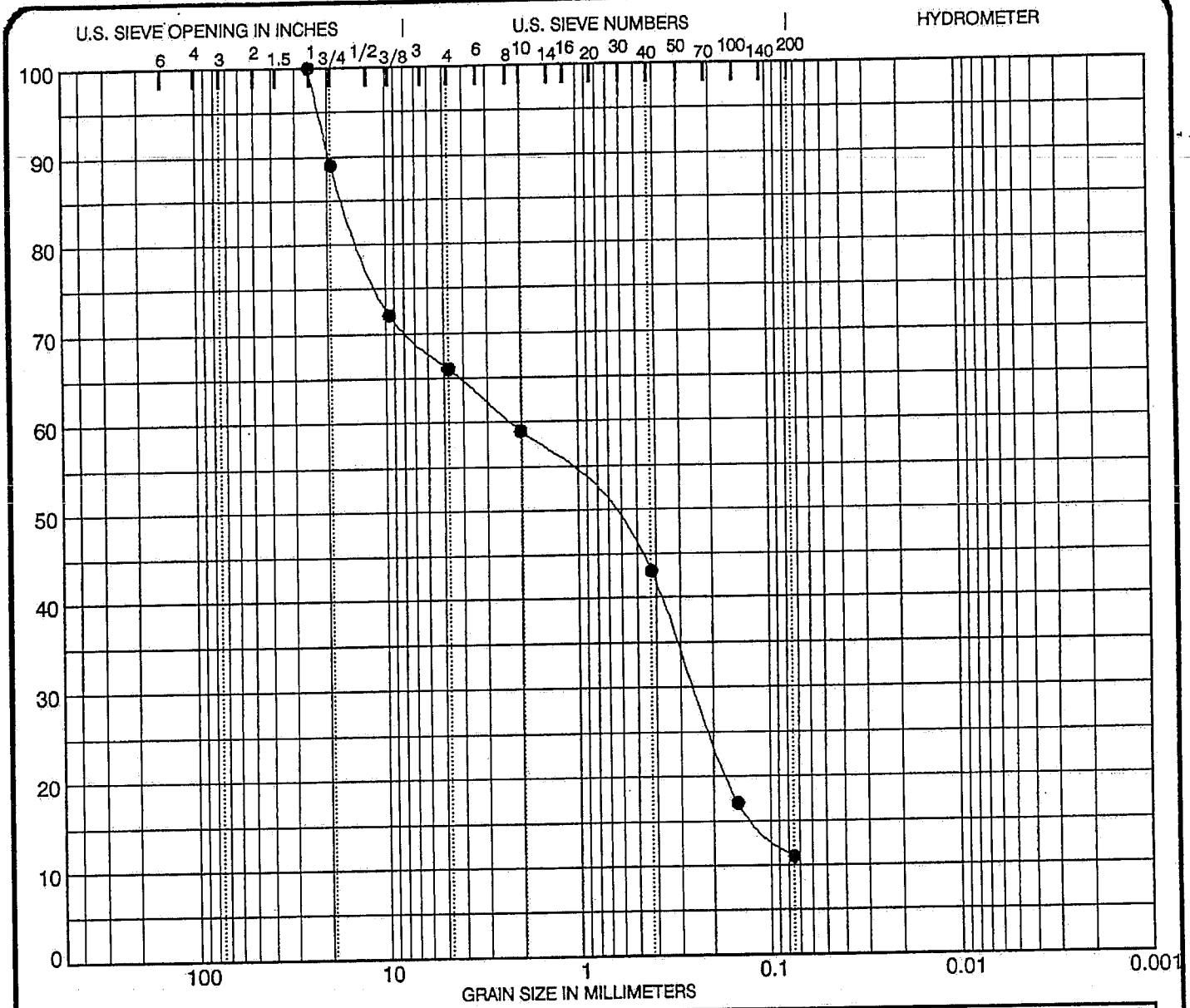
GRADATION SHEET

Testing Service Corporation

CAROL STREAM



COBBLES	GRAVEL		SAND			ASTM D 422
	coarse	fine	coarse	medium	fine	

SPECIMEN IDENTIFICATION	SIEVE	% PASS	SPECIFIED PERCENT PASSING
Boring: 18	3"	100	
Sample: 3	2"	100	
	1-1/2"	100	
	1"	100	
NOTES :	3/4"	89	
	3/8"	72	
	#4	66	
	#10	59	
	#40	43	
	#100	17	
	#200	11	

PROJECT Maple Avenue -
LOCATION Carpentersville, Illinois

JOB NO. L - 40,955
DATE May 20, 1997

5

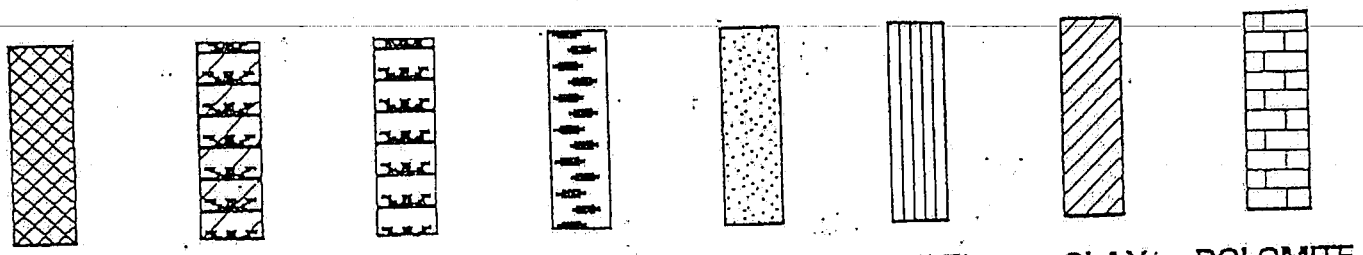
GRADATION SHEET

Testing Service Corporation
CAROL STREAM

TESTING SERVICE CORPORATION

LEGEND FOR BORING LOGS

(SI Metric Units)



FILL TOPSOIL PEAT GRAVEL SAND SILT CLAY DOLOMITE

SAMPLE TYPE:

SS = Split Spoon
ST = Thin-Walled Tube
A = Auger

FIELD AND LABORATORY TEST DATA:

N = Standard Penetration Resistance in Blows per 300 Millimeters (mm)
Wc = In-Situ Water Content
Qu = Unconfined Compressive Strength in Kilopascals (kPa)
* Pocket Penetrometer Measurement; Maximum Reading = 430 kPa
Conversion: 1.0 tsf = 95.76 kPa
γD = Dry Unit Weight in Kilograms per Cubic Meter (kg/m^3)
Conversion: 1.0 pcf = 16.0185 kg/m^3

WATER LEVELS:

▼ While Drilling
▽ End of Boring
▼ 24 Hours

SOIL DESCRIPTION:

MATERIAL	PARTICLE SIZE RANGE
BOULDER	Over 300 mm
COBBLE	300 mm to 75 mm
Coarse GRAVEL	75 mm to 20 mm
Small GRAVEL	20 mm to No. 4 Sieve
Coarse SAND	No. 4 Sieve to No. 10 Sieve
Medium SAND	No. 10 Sieve to No. 40 Sieve
Fine SAND	No. 40 Sieve to No. 200 Sieve
SILT and CLAY	Passing No. 200 Sieve

COHESIVE SOILS

CONSISTENCY	Qu (kPa)
Very Soft	Less than 30
Soft	30 to 60
Stiff	60 to 100
Tough	100 to 200
Very Tough	200 to 400
Hard	400 and over

COHESIONLESS SOILS

RELATIVE DENSITY	N
Very Loose	0 - 4
Loose	4 - 10
Firm	10 - 30
Dense	30 - 50
Very Dense	50 and over

MODIFYING TERM	PERCENT BY WEIGHT
Trace	1 - 10
Little	10 - 20
Some	20 - 35

PROJECT Maple Ave. Improvements, Carpentersville, Illinois

CLIENT Hampton, Lenzini and Renwick, Inc., 380 Shepard Dr , Elgin, Illinois

BORING 1 DATE STARTED 4-29-97 DATE COMPLETED 4-29-97 JOB L-40,955

ELEVATIONS

GROUND SURFACE 230.9 m

END OF BORING 227.8 m

WATER TABLE

▼ WHILE DRILLING Dry

▽ AT END OF BORING Dry

▼ 24 HOURS

Sta. 10+100, 3.0 m RT

LENGTH RECOVERY	SAMPLE NO.	SAMPLE TYPE	N	WC	Q_u	γ_{DRY}	DEPTH	ELEV.	SOIL DESCRIPTIONS
							0.1	230.9	50 mm Bituminous Concrete
							0.3	230.7	FILL - Brown SAND and GRAVEL Base A-1-a
	1	SS	7	8.5					
	2	SS	4						
	3	SS							Loose brown SANDY LOAM, moist A-2-4
	4	SS							
	5	SS							End of Boring at 3.0 m

DISTANCE BELOW SURFACE IN METERS

0 1 2 3 4 5 6

* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.

DRILL RIG NO. 53

Division lines between deposits represent approximate boundaries between soil types; in-situ, the transition may be gradual.

PROJECT Maple Ave. Improvements, Carpentersville, Illinois

CLIENT Hampton, Lenzini and Renwick, Inc., 380 Shepard Dr , Elgin, Illinois

BORING 2 DATE STARTED 4-29-97 DATE COMPLETED 4-29-97 JOB L-40,955

ELEVATIONS

GROUND SURFACE 228.9 m

END OF BORING 225.9 m

WATER TABLE

▼ WHILE DRILLING Dry

▽ AT END OF BORING Dry

▼ 24 HOURS

Sta. 10+190, 3.0 m LT

DISTANCE BELOW SURFACE IN METERS	LENGTH RECOVERY	SAMPLE NO.	SAMPLE TYPE	N	WC	Q_u	% DRY	DEPTH	ELEV.	SOIL DESCRIPTIONS
0								0.1	228.9	75 mm Bituminous Concrete
								0.2	228.8	FILL - Brown SAND and GRAVEL Base A-1-a
		1	SS	2	12.8	96 *				Stiff to tough brown SANDY LOAM, very moist A-6(2
1		2	SS	6	15.8	168 *				Sample 2: 62% Sand, 25% Silt, 13% Clay LL/PI = 28/19
								1.4	227.6	
		3	SS		14.7					Brown SANDY LOAM, moist A-2-4
2		4	SS							
3		5	SS		10.3					End of Boring at 3.0 m
4										
5										
6										

* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.

DRILL RIG NO. 53

Division lines between deposits represent approximate boundaries between soil types; in-situ, the transition may be gradual.

PROJECT Maple Ave. Improvements, Carpentersville, Illinois

CLIENT Hampton, Lenzini and Renwick, Inc., 380 Shepard Dr , Elgin, Illinois

BORING 3 DATE STARTED 4-29-97 DATE COMPLETED 4-29-97 JOB L-40,955

ELEVATIONS

GROUND SURFACE 228.7 m

END OF BORING 225.6 m

WATER TABLE

▼ WHILE DRILLING Dry

▽ AT END OF BORING Dry

▼ 24 HOURS

Sta. 10+280, 3.0 m RT

LENGTH RECOVERY	SAMPLE NO.	SAMPLE TYPE	N	WC	Q_u	γ DRY	DEPTH	ELEV.	SOIL DESCRIPTIONS
							0.1	228.7	60 mm Bituminous Concrete
							0.3	228.5	FILL - Brown SAND and GRAVEL Base A-1-a
	1	SS	8	15.6	144 *				Tough to very tough brown CLAY LOAM, very moist to moist A-6
	2	SS	9	16.6	239 *				
							1.4	227.4	
	3	SS		15.7					Brown SANDY LOAM, moist A-2-4
							2.0	226.8	
	4	SS							Brown SAND and GRAVEL, moist A-1-a
							2.6	226.2	
	5	SS		8.1					Brown SANDY LOAM, moist A-2-4
									End of Boring at 3.0 m

* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.

DISTANCE BELOW SURFACE IN METERS

0 1 2 3 4 5 6

DRILL RIG NO. 53

Division lines between deposits represent approximate boundaries between soil types; In-situ, the transition may be gradual.

PROJECT Maple Ave. Improvements, Carpentersville, Illinois

CLIENT Hampton, Lenzini and Renwick, Inc., 380 Shepard Dr , Elgin, Illinois

BORING 4 DATE STARTED 4-29-97 DATE COMPLETED 4-29-97 JOB L-40,955

ELEVATIONS

GROUND SURFACE 228.0 m

END OF BORING 224.9 m

WATER TABLE

▼ WHILE DRILLING Dry

▽ AT END OF BORING Dry

▼ 24 HOURS

Sta. 10+370, 3.0 m RT

LENGTH RECOVERY	SAMPLE NO.	SAMPLE TYPE	N	WC	Q_u	% DRY	DEPTH	ELEV.	SOIL DESCRIPTIONS
							0.1	228.0	90 mm Bituminous Concrete
							0.3	227.7	FILL -Brown SAND and GRAVEL Base A-1-a
	1	SS	4	18.2	72 *				Stiff black LOAM (Topsoil), very moist A-6(3)
	2	SS	5	15.8	168 *		0.8	227.3	Tough brown CLAY LOAM, moist to very moist A-6
	3	SS		17.1	144 *		2.0	226.1	Brown SANDY LOAM, moist A-2-4
	4	SS		10.1					
	5	SS							End of Boring at 3.0 m

DISTANCE BELOW SURFACE IN METERS

0 1 2 3 4 5 6

* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.

Sample 1:
42% Sand, 45% Silt, 13% Clay
LL/PI = 26/11
L.O.I. = 4.1%
O.W.C. = 2.7%

DRILL RIG NO. 53

Division lines between deposits represent approximate boundaries between soil types; in-situ, the transition may be gradual.

PROJECT Maple Ave. Improvements, Carpentersville, Illinois

CLIENT Hampton, Lenzini and Renwick, Inc., 380 Shepard Dr , Elgin, Illinois

BORING 5 DATE STARTED 4-29-97 DATE COMPLETED 4-29-97 JOB L-40,955

ELEVATIONS

GROUND SURFACE 227.5 m

END OF BORING 224.5 m

WATER TABLE

▼ WHILE DRILLING Dry

▽ AT END OF BORING Dry

▼ 24 HOURS

Sta. 10+460, 2.0 m RT

DISTANCE BELOW SURFACE IN METERS	LENGTH RECOVERY	SAMPLE NO.	SAMPLE TYPE	N	WC	Q_u	% DRY	DEPTH	ELEV.	SOIL DESCRIPTIONS
0								0.1	227.5	90 mm Bituminous Concrete
								0.3	227.3	FILL - Brown SAND and GRAVEL Base A-1-a
		1	SS	3	19.4	72 *				Stiff brown CLAY LOAM, very moist A-6
								0.8	226.8	
1		2	SS	12	17.6	239 *				Very tough brown CLAY LOAM, moist A-6
								1.5	226.0	
		3	SS		19.0	144 *				Tough brown CLAY LOAM, moist A-6
2								2.1	225.4	
		4	SS		13.8					Brown SANDY LOAM, moist A-2-4
3		5	SS							
										End of Boring at 3.0 m
4										
5										
6										

* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.

DRILL RIG NO. 53

Division lines between deposits represent approximate boundaries between soil types; in-situ, the transition may be gradual.

PROJECT Maple Ave. Improvements, Carpentersville, Illinois

CLIENT Hampton, Lenzini and Renwick, Inc., 380 Shepard Dr , Elgin, Illinois

BORING 6 DATE STARTED 4-29-97 DATE COMPLETED 4-29-97 JOB L-40,955

ELEVATIONS

GROUND SURFACE 226.7 m

END OF BORING 223.7 m

Sta. 10+555, 2.0 m RT

WATER TABLE

▼ WHILE DRILLING Dry

▽ AT END OF BORING Dry

▼ 24 HOURS

LENGTH RECOVERY	SAMPLE NO.	SAMPLE TYPE	N	WC	Q_u	℄ DRY	DEPTH	ELEV.	SOIL DESCRIPTIONS
							0.1	226.7	125 mm Bituminous Concrete
							0.3	226.5	FILL - Brown SAND and GRAVEL Base A-1-a
	1	SS	7	19.8	144 *				FILL - Black LOAM (topsoil), very moist A-6
	2	SS	4	19.9	120 *				
							1.4	225.4	
	3	SS		24.0	144 *				Tough black LOAM (topsoil), very moist A-7-6
							2.0	224.8	
	4	SS		15.3	96 *				Stiff to tough brown CLAY LOAM, very moist A-4
							2.7	224.0	
	5	SS							Brown SANDY LOAM, very moist A-2-4
									End of Boring at 3.0 m

DISTANCE BELOW SURFACE IN METERS

0 1 2 3 4 5 6

* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.

DRILL RIG NO. 53

Division lines between deposits represent approximate boundaries between soil types; in-situ, the transition may be gradual.

PROJECT Maple Ave. Improvements, Carpentersville, Illinois

CLIENT Hampton, Lenzini and Renwick, Inc., 380 Shepard Dr , Elgin, Illinois

BORING 7A DATE STARTED 5-27-97 DATE COMPLETED 5-27-97 JOB L-40,955

ELEVATIONS

GROUND SURFACE 226.2 m

END OF BORING 223.1 m

Sta. 10+615, 2.0 m RT

WATER TABLE

▼ WHILE DRILLING Dry

▽ AT END OF BORING Dry

▼ 24 HOURS

LENGTH RECOVERY	SAMPLE NO.	SAMPLE TYPE	N	WC	Q_u	% DRY	DEPTH	ELEV.	SOIL DESCRIPTIONS
							0.1	226.1	125 mm Bituminous Concrete
									FILL - Brown SAND and GRAVEL Base A-1-a
	A 1 B	SS	14	38.5	144		0.4	225.9	Tough black SILTY CLAY (Topsoil), very moist A-7-6
	A 2 B	SS	13				0.9	225.3	Firm to loose brown and gray SAND, trace gravel, moist A-1-b
	A 3 B	SS	8	16.4	287		2.1	224.1	Very tough brown and gray CLAY, moist A-6
	A 4 B	SS	33	15.9			2.4	223.8	Dense brown and gray SANDY LOAM, moist A-2-4
							2.7	223.5	Dense brown and gray SAND, trace gravel, moist A-1-b
									End of Boring at 3.0 m

DISTANCE BELOW SURFACE IN METERS

0 1 2 3 4 5 6

* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.

DRILL RIG NO. 91

Division lines between deposits represent approximate boundaries between soil types; in-situ, the transition may be gradual.

PROJECT Maple Ave. Improvements, Carpentersville, Illinois

CLIENT Hampton, Lenzini and Renwick, Inc., 380 Shepard Dr , Elgin, Illinois

BORING 7 DATE STARTED 4-29-97 DATE COMPLETED 4-29-97 JOB L-40,955

ELEVATIONS

GROUND SURFACE 226.1 m

END OF BORING 223.1 m

WATER TABLE

▼ WHILE DRILLING Dry

▽ AT END OF BORING Dry

▼ 24 HOURS

Sta. 10+640, 3.0 m LT

LENGTH RECOVERY	SAMPLE NO.	SAMPLE TYPE	N	WC	Q_u	% DRY	DEPTH	ELEV.	SOIL DESCRIPTIONS
							0.2	226.0	140 mm Bituminous Concrete
	A								FILL - Brown SAND and GRAVEL Base, damp A-1-a
	1	SS	9				0.6	225.6	
	B			40.0	72 *		0.8	225.4	Stiff black SILTY CLAY (topsoil), very moist A-7-6
	2	SS	6	71.5					Black ORGANIC CLAY, very moist A-8
	3	SS		87.8			2.0	224.2	
	4	SS							Brown SANDY LOAM, moist A-2-4
	5	SS		10.9			2.7	223.4	Gray SANDY LOAM, moist A-2-4
									End of Boring at 3.0 m

DISTANCE BELOW SURFACE IN METERS

0 1 2 3 4 5 6

* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.

DRILL RIG NO. 53

Division lines between deposits represent approximate boundaries between soil types; in-situ, the transition may be gradual.

PROJECT Maple Ave. Improvements, Carpentersville, Illinois

CLIENT Hampton, Lenzini and Renwick, Inc., 380 Shepard Dr , Elgin, Illinois

BORING 7B DATE STARTED 5-27-97 DATE COMPLETED 5-27-97 JOB L-40,955

ELEVATIONS

GROUND SURFACE 226.4 m

END OF BORING 223.4 m

WATER TABLE

▼ WHILE DRILLING Dry

▽ AT END OF BORING Dry

▼ 24 HOURS

Sta. 10+670, 2.0 m LT

DISTANCE BELOW SURFACE IN METERS	LENGTH RECOVERY	SAMPLE NO.	SAMPLE TYPE	N	WC	Q_u	γ DRY	DEPTH	ELEV.	SOIL DESCRIPTIONS
0								0.1	226.3	125 mm Bituminous Concrete
		A 1 B	SS	8	28.4	192		0.5	226.0	FILL - Brown SAND and GRAVEL Base A-1-a
1		2	SS	8	41.8			0.9	225.6	Tough to very tough black LOAM (Topsoil), moist A-6
2		A 3 B	SS	18	45.9			1.9	224.6	Black ORGANIC CLAY, very moist A-8
3		4	SS	33						Firm to dense brown and gray SAND and GRAVEL, moist A-1-a
4										End of Boring at 3.0 m
5										* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.
6										

DRILL RIG NO. 91

Division lines between deposits represent approximate boundaries between soil types; in-situ, the transition may be gradual.

PROJECT Maple Ave. Improvements, Carpentersville, Illinois

CLIENT Hampton, Lenzini and Renwick, Inc., 380 Shepard Dr , Elgin, Illinois

BORING 7C DATE STARTED 5-27-97 DATE COMPLETED 5-27-97 JOB L-40,955

ELEVATIONS

GROUND SURFACE 226.7 m

END OF BORING 223.7 m

WATER TABLE

▼ WHILE DRILLING Dry

▽ AT END OF BORING Dry

▼ 24 HOURS

Sta. 10+700, 2.0 m LT

LENGTH RECOVERY	SAMPLE NO.	SAMPLE TYPE	N	WC	Q_u	ϒ DRY	DEPTH	ELEV.	SOIL DESCRIPTIONS
							0.1	226.6	125 mm Bituminous Concrete
							0.3	226.5	FILL - Brown SAND and GRAVEL Base A-1-a
	1	SS	6	36.2	72 *				Stiff black SILTY CLAY (topsoil), very moist A-7-6
							0.9	225.9	
	A								Very loose brown SAND, trace gravel, moist A-1-b
	2	SS	3				1.2	225.6	
	B			18.8					Very loose brown SANDY LOAM, moist A-2-4
							1.7	225.1	
	3	SS	4	19.4	48 *				Soft to tough brown and gray CLAY LOAM, very moist A-4
	A			18.7	120 *				
	4	SS	18				2.8	224.0	
	B								Firm brown and gray SAND and GRAVEL, moist A-1-a
									End of Boring at 3.0 m

* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.

DISTANCE BELOW SURFACE IN METERS

0 1 2 3 4 5 6

DRILL RIG NO. 91

Division lines between deposits represent approximate boundaries between soil types; in-situ, the transition may be gradual.

PROJECT Maple Ave. Improvements, Carpentersville, Illinois

CLIENT Hampton, Lenzini and Renwick, Inc., 380 Shepard Dr , Elgin, Illinois

BORING 8 DATE STARTED 4-29-97 DATE COMPLETED 4-29-97 JOB L-40,955

ELEVATIONS

GROUND SURFACE 226.8 m

END OF BORING 223.8 m

WATER TABLE

▼ WHILE DRILLING Dry

▽ AT END OF BORING Dry

▼ 24 HOURS

Sta. 10+730, 2.0 m LT

DISTANCE BELOW SURFACE IN METERS	LENGTH RECOVERY	SAMPLE NO.	SAMPLE TYPE	N	WC	Q_u	% DRY	DEPTH	ELEV.	SOIL DESCRIPTIONS
0								0.2	226.7	150 mm Bituminous Concrete
		1	SS	8						FILL - Brown SAND and GRAVEL Base, damp A-1-a
								0.8	226.1	
1		2	SS	6	27.1	192 *				Tough to very tough black LOAM (topsoil), moist A-6
								1.4	225.5	
		3	SS		25.0	96 *				Tough to stiff brown and gray CLAY LOAM, very moist A-6/A-4
2		4	SS		20.4	144 *				
3		5	SS		19.5	72 *				End of Boring at 3.0 m
4										
5										
6										

* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.

Sample 2:
LL/PI = 39/21
L.O.I. = 11.4%
O.W.C. = 4.4%

DRILL RIG NO. 53

Division lines between deposits represent approximate boundaries between soil types; in-situ, the transition may be gradual.

PROJECT Maple Ave. Improvements, Carpentersville, Illinois

CLIENT Hampton, Lenzini and Renwick, Inc., 380 Shepard Dr , Elgin, Illinois

TSC

BORING 10 DATE STARTED 4-29-97 DATE COMPLETED 4-29-97 JOB L-40,955

ELEVATIONS

GROUND SURFACE 228.7 m

END OF BORING 225.6 m

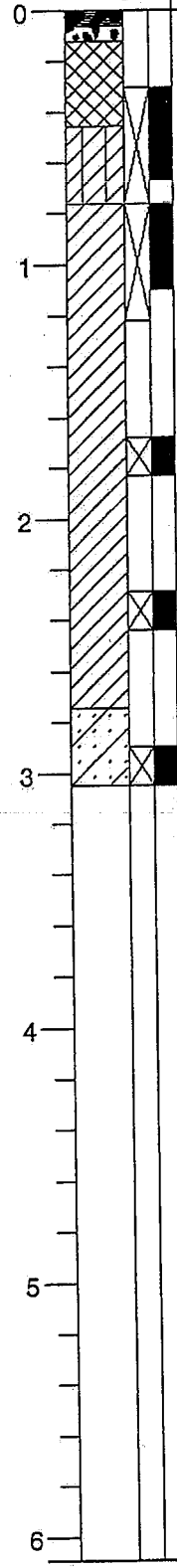
WATER TABLE

▼ WHILE DRILLING Dry

▽ AT END OF BORING Dry

▼ 24 HOURS

Sta. 10+910, 2.0 m RT



SAMPLE NO.	SAMPLE TYPE	N	WC	Q_u	% DRY	DEPTH	ELEV.	SOIL DESCRIPTIONS
						0.1	228.6	115 mm Bituminous Concrete
								FILL - Brown SAND and GRAVEL Base, moist A-1-a
A						0.5	228.3	
1	SS	5						Tough black SANDY LOAM (topsoil), very moist A-2-6
B			17.0			0.8	228.0	
2	SS	11	19.4	144 *				Tough to stiff brown CLAY LOAM, moist to very moist A-6
3	SS		24.9	72 *				
4	SS		24.4	72 *				
						2.7	226.0	Brown SANDY LOAM, moist A-2-4
5	SS							End of Boring at 3.0 m

DISTANCE BELOW SURFACE IN METERS

* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.

Bag Sample 0.3 - 1.0m:
73% Sand, 21% Silt, 6% Clay
LL/PI = 25/13
IBR = 5.2
Max. D.D. = 1963.9 Kg/m3
O.M.C. = 10.1%

DRILL RIG NO. 53

Division lines between deposits represent approximate boundaries between soil types; in-situ, the transition may be gradual.

PROJECT Maple Ave. Improvements, Carpentersville, Illinois

CLIENT Hampton, Lenzini and Renwick, Inc., 380 Shepard Dr , Elgin, Illinois

TSC

BORING 11 DATE STARTED 4-29-97 DATE COMPLETED 4-29-97 JOB L-40,955

ELEVATIONS

GROUND SURFACE 229.4 m

END OF BORING 226.3 m

WATER TABLE

▼ WHILE DRILLING Dry

▽ AT END OF BORING Dry

▼ 24 HOURS

Sta. 11+000, 2.0 m LT

LENGTH RECOVERY	SAMPLE NO.	SAMPLE TYPE	N	WC	Q_u	% DRY	DEPTH	ELEV.	SOIL DESCRIPTIONS
							0.1	229.3	125 mm Bituminous Concrete
							0.3	229.2	FILL - Brown SAND and GRAVEL Base A-1-a
	1	SS	10	25.6	144 *				Tough black LOAM (topsoil), very moist A-7-6(11)
							0.8	228.7	
	2	SS	10	24.2	215 *				Very tough brown and gray CLAY, moist A-7-6
							1.5	227.9	
	3	SS		17.6	72 *				Stiff brown CLAY LOAM, very moist A-4/A-6
							2.1	227.3	
	4	SS		23.5	239 *				Very tough to tough brown CLAY, moist to very moist A-6
	5	SS		23.0	120 *				

End of Boring at 3.0 m

* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.

Sample 1:
42% Sand, 39% Silt, 19% Clay
LL/PI = 42/25
L.O.I. = 8.9%
O.W.C. = 4.7%

DISTANCE BELOW SURFACE IN METERS

0 1 2 3 4 5 6

DRILL RIG NO. 53

Division lines between deposits represent approximate boundaries between soil types; in-situ, the transition may be gradual.

PROJECT Maple Ave. Improvements, Carpentersville, Illinois

CLIENT Hampton, Lenzini and Renwick, Inc., 380 Shepard Dr , Elgin, Illinois

TSC

BORING 12 DATE STARTED 4-29-97 DATE COMPLETED 4-29-97 JOB L-40,955

ELEVATIONS

GROUND SURFACE 231.5 m

END OF BORING 228.4 m

WATER TABLE

▼ WHILE DRILLING Dry

▽ AT END OF BORING Dry

▼ 24 HOURS

Sta. 11+090, 1.0 m RT

LENGTH RECOVERY	SAMPLE NO.	SAMPLE TYPE	N	WC	Q_u	% DRY	DEPTH	ELEV.	SOIL DESCRIPTIONS
							0.2	231.4	165 mm Bituminous Concrete
							0.3	231.3	FILL - Brown SAND and GRAVEL Base A-1-a
	A			21.3	215 *		0.5	231.1	Very tough Black LOAM (topsoil), moist A-6
	1	SS	9						
	B			17.4	239 *				
	2	SS	10	22.6	239 *				Very tough brown CLAY, moist A-6
							1.5	230.0	
	3	SS		20.4	72 *				Stiff brown CLAY LOAM, very moist A-6/A-4
							2.0	229.6	
	4	SS			72 *				Brown SANDY LOAM, moist A-2-4
							2.6	229.0	
	5	SS		27.1	144 *				Tough brown CLAY, very moist A-6
									End of Boring at 3.0 m

DISTANCE BELOW SURFACE IN METERS

0 1 2 3 4 5 6

* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.

DRILL RIG NO. 53

Division lines between deposits represent approximate boundaries between soil types; in-situ, the transition may be gradual.

PROJECT Maple Ave. Improvements, Carpentersville, Illinois

CLIENT Hampton, Lenzini and Renwick, Inc., 380 Shepard Dr , Elgin, Illinois

BORING 13 DATE STARTED 5-5-97 DATE COMPLETED 5-5-97 JOB L-40,955

ELEVATIONS

GROUND SURFACE 234.1 m

END OF BORING 231.0 m

WATER TABLE

▼ WHILE DRILLING 2.6 m

▽ AT END OF BORING 2.6 m

▼ 24 HOURS

Sta. 11+180, 2.0 m LT

LENGTH RECOVERY	SAMPLE NO.	SAMPLE TYPE	N	WC	Q_u	% DRY	DEPTH	ELEV.	SOIL DESCRIPTIONS
							0.1	234.0	125 mm Bituminous Concrete
							0.3	233.8	FILL - Brown SAND and GRAVEL Base A-1-a
	1	SS	17	12.9					FILL - Black and brown SANDY LOAM, moist A-2-7
							0.8	233.4	
	2	SS	7	26.2	144 *				Tough black LOAM (topsoil), very moist A-7-6
							1.4	232.8	
	3	SS		29.8	48 *				Soft gray CLAY, very moist A-6
							2.1	232.0	
	4	SS		19.8	48 *				Soft gray CLAY LOAM, very moist A-6/A-4
							2.6	231.6	▼ Brown and gray SANDY LOAM, saturated A-2-4
	5	SS							End of Boring at 3.0 m

DISTANCE BELOW SURFACE IN METERS

0 1 2 3 4 5 6

* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.

Bag Sample 0.3 - 1.0m:
71% Sand, 23% Silt, 6% Clay
LL/PI = 53/27
IBR = 4.8
Max. D.D. = 1922.2 Kg/m3
O.M.C. = 11.8%

DRILL RIG NO. 53

Division lines between deposits represent approximate boundaries between soil types; in-situ, the transition may be gradual.

CLIENT **Hampton, Lenzini and Renwick, Inc., 380 Shepard Dr , Elgin, Illinois**

BORING **16** DATE STARTED **4-29-97** DATE COMPLETED **4-29-97** JOB **L-40,955**

ELEVATIONS

GROUND SURFACE **265.5 m**

END OF BORING **262.5 m**

WATER TABLE

▼ WHILE DRILLING **Dry**

▽ AT END OF BORING **Dry**

▼ 24 HOURS

Sta. 12+040, 2.0 m LT

DISTANCE BELOW SURFACE IN METERS

LENGTH RECOVERY	SAMPLE NO.	SAMPLE TYPE	N	WC	Q_u	γ DRY	DEPTH	ELEV.	SOIL DESCRIPTIONS
							0.2	265.4	180 mm Bituminous Concrete
							0.3	265.3	FILL - Brown SAND and GRAVEL Base A-1-a
	1	SS	10	12.3	431+*				Hard to very tough brown CLAY LOAM, moist A-6
	2	SS	12	12.4	383 *				
							1.4	264.2	
	3	SS		16.1	383 *				Hard to very tough brown CLAY, moist A-6
	4	SS		14.5	287 *				
	5	SS		15.6	239 *				End of Boring at 3.0 m

* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.

DRILL RIG NO. **53**

Division lines between deposits represent approximate boundaries between soil types; in-situ, the transition may be gradual.

CLIENT Hampton, Lenzini and Renwick, Inc., 380 Shepard Dr , Elgin, Illinois

BORING 17 DATE STARTED 4-29-97 DATE COMPLETED 4-29-97 JOB L-40,955

ELEVATIONS

GROUND SURFACE 264.9 m

END OF BORING 261.9 m

WATER TABLE

▼ WHILE DRILLING Dry

▽ AT END OF BORING Dry

▼ 24 HOURS

Sta. 12+130, 2.0 m RT

LENGTH RECOVERY	SAMPLE NO.	SAMPLE TYPE	N	WC	Q_u	γ DRY	DEPTH	ELEV.	SOIL DESCRIPTIONS
							0.2	264.8	180 mm Bituminous Concrete
							0.3	264.7	FILL - Brown SAND and GRAVEL Base A-1-a
	1	SS	8	17.8	383 *				Very tough to hard brown and gray CLAY, moist A-6/A-7-6
							0.8	264.2	
	2	SS	15	13.7	431 +				
	3	SS		14.0	239 *				Hard to very tough brown and gray CLAY LOAM, moist A-6/A-4
	4	SS		13.9	239 *				
	5	SS		12.9	335 *				End of Boring at 3.0 m

DISTANCE BELOW SURFACE IN METERS

0 1 2 3 4 5 6

* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.

DRILL RIG NO. 53

Division lines between deposits represent approximate boundaries between soil types; in-situ, the transition may be gradual.

PROJECT Maple Ave. Improvements, Carpentersville, Illinois

CLIENT Hampton, Lenzini and Renwick, Inc., 380 Shepard Dr , Elgin, Illinois

BORING 18 DATE STARTED 4-30-97 DATE COMPLETED 4-30-97 JOB L-40,955

ELEVATIONS

GROUND SURFACE 225.8 m

END OF BORING 216.7 m

WATER TABLE

▼ WHILE DRILLING 2.4 m

▽ AT END OF BORING 3.0 m

▼ 24 HOURS

Detention Basin

DISTANCE BELOW SURFACE IN METERS

LENGTH RECOVERY	SAMPLE NO.	SAMPLE TYPE	N	WC	Q_u	γ DRY	DEPTH	ELEV.	SOIL DESCRIPTIONS
	1	SS	2	25.0	144*				Tough black LOAM (topsoil), very moist A-7-6
							0.9	224.9	
	2	SS	6	24.3	144*				Tough brown CLAY LOAM, very moist A-6
							1.7	224.2	
	3	SS	27						Firm brown SAND and GRAVEL, moist A-1-b
							2.4	223.4	▼
	4	SS	18						Firm brown SAND and GRAVEL, saturated A-1-b ▽
							3.2	222.7	
	5	SS	27						Firm gray SAND and GRAVEL, saturated A-1-a
	6	SS	17						
	7	SS	17						
	8	SS	20						

Division lines between deposits represent approximate boundaries between soil types; in-situ, the transition may be gradual.

DRILL RIG NO. 53

PROJECT Maple Ave. Improvements, Carpentersville, Illinois

CLIENT Hampton, Lenzini and Renwick, Inc., 380 Shepard Dr , Elgin, Illinois

BORING 18 DATE STARTED 4-30-97 DATE COMPLETED 4-30-97 JOB L-40,955

ELEVATIONS

GROUND SURFACE 225.8 m

END OF BORING 216.7 m

WATER TABLE

▼ WHILE DRILLING 2.4 m

▽ AT END OF BORING 3.0 m

▼ 24 HOURS

Detention Basin

LENGTH RECOVERY	SAMPLE NO.	SAMPLE TYPE	N	WC	Q_u	γ_{DRY}	DEPTH	ELEV.	SOIL DESCRIPTIONS
	9	SS	18				7		Firm gray SAND and GRAVEL, saturated A-1-a
	10	SS	19						
	11	SS	13				8		
	12	SS	14				9		
									End of Boring at 9.1 m

* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.

DISTANCE BELOW SURFACE IN METERS

10

11

12

DRILL RIG NO. 53

Division lines between deposits represent approximate boundaries between soil types; in-situ, the transition may be gradual.

PROJECT Maple Ave. Improvements, Carpentersville, Illinois

CLIENT Hampton, Lenzini and Renwick, Inc., 380 Shepard Dr , Elgin, Illinois

BORING 19 DATE STARTED 4-30-97 DATE COMPLETED 4-30-97 JOB L-40,955

ELEVATIONS

GROUND SURFACE 225.9 m

END OF BORING 216.7 m

WATER TABLE

▼ WHILE DRILLING 2.4 m

▽ AT END OF BORING 2.7 m

▼ 24 HOURS

Detention Basin

LENGTH RECOVERY	SAMPLE NO.	SAMPLE TYPE	N	WC	Q_u	γ DRY	DEPTH	ELEV.	SOIL DESCRIPTIONS
							6.1	219.8	
	9	SS	36						Dense to firm brown SAND and GRAVEL, saturated A-1-a
	10	SS	30						
	11	SS	27						
	12	SS	22						
									End of Boring at 9.1 m

* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.

DISTANCE BELOW SURFACE IN METERS

7 8 9 10 11 12

DRILL RIG NO. 53

Division lines between deposits represent approximate boundaries between soil types; in-situ, the transition may be gradual.

PROJECT Maple Ave. Improvements, Carpentersville, Illinois

CLIENT Hampton, Lenzini and Renwick, Inc., 380 Shepard Dr , Elgin, Illinois

BORING 20 DATE STARTED 4-30-97 DATE COMPLETED 4-30-97 JOB L-40,955

ELEVATIONS

GROUND SURFACE 226.1 m

END OF BORING 217.0 m

WATER TABLE

▼ WHILE DRILLING 2.4 m

▽ AT END OF BORING 3.7 m

▼ 24 HOURS

Detention Basin

SAMPLE NO.	SAMPLE TYPE	LENGTH RECOVERY	N	WC	Q_u	γ DRY	DEPTH	ELEV.	SOIL DESCRIPTIONS
							0	226.1	
1	SS		3	21.8	120*				Tough black LOAM (topsoil), very moist A-6
							0.9	225.2	
2	SS		10	16.7	144*				Tough brown and gray CLAY LOAM, moist A-6/A-4
							1.7	224.5	
3	SS		11	19.1	239*				Very tough brown CLAY, moist A-6
							2.4	223.7	▼
4	SS		13						
5	SS		45						▽
6	SS		24						Firm to dense brown SAND and GRAVEL, saturated A-1-a
7	SS		16						
8	SS		17						

DISTANCE BELOW SURFACE IN METERS

0 1 2 3 4 5 6

DRILL RIG NO. 53

Division lines between deposits represent approximate boundaries between soil types; in-situ, the transition may be gradual.

PROJECT Maple Ave. Improvements, Carpentersville, Illinois

CLIENT Hampton, Lenzini and Renwick, Inc., 380 Shepard Dr , Elgin, Illinois

BORING 21 DATE STARTED 4-30-97 DATE COMPLETED 4-30-97 JOB L-40,955

ELEVATIONS

GROUND SURFACE 226.4 m

END OF BORING 217.3 m

WATER TABLE

▼ WHILE DRILLING 3.2 m

▽ AT END OF BORING 4.9 m

▼ 24 HOURS

Detention Basin

LENGTH RECOVERY	SAMPLE NO.	SAMPLE TYPE	N	WC	Q_u	γ DRY	DEPTH	ELEV.	SOIL DESCRIPTIONS
	9	SS	19						Firm brown SAND and GRAVEL, saturated A-1-a
	10	SS	10						
	11	SS	21						
	12	SS	23						End of Boring at 9.1 m

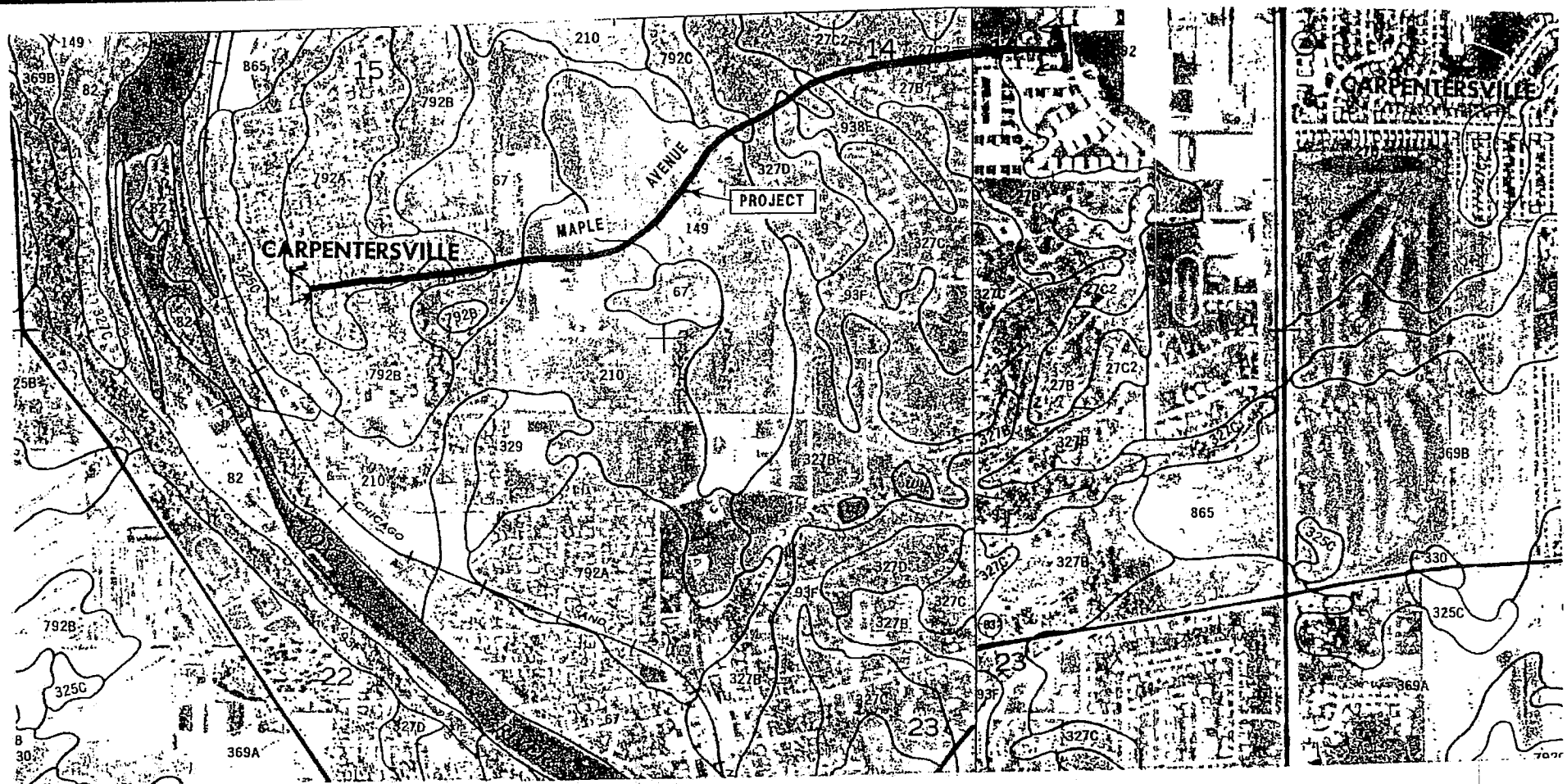
DISTANCE BELOW SURFACE IN METERS

7 8 9 10 11 12

* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.

DRILL RIG NO. 53

Division lines between deposits represent approximate boundaries between soil types; in-situ, the transition may be gradual.



SYMBOL	NAME	SYMBOL	NAME
27B	Miami silt loam, 2 to 5 percent slopes	392	Urban land - Orthents, loamy, complex
67	Harpster silty clay loam	792A	Bowes silt loam, 0 to 2 percent slopes
93F	Rodman soils, 15 to 30 percent slopes	792B	Bowes silt loam, 2 to 5 percent slopes
149	Brenton silt loam	793C	Bowes silt loam, 5 to 10 percent slopes
210	Lena muck	938E	Miami-Casco complex, 10 to 20 percent slopes
327D	Fox silt loam, 10 to 15 percent slopes		

PEDOLOGICAL MAP
MAPLE AVE. IMPROVEMENTS
WASHINGTON ST. TO BESINGER DR.
CARPENTERSVILLE, ILLINOIS

TESTING SERVICE CORPORATION
457 EAST GUNDERSEN DRIVE
CAROL STREAM, ILLINOIS 60188

DRAWN BY:	DJM
CHECKED BY:	MC
JOB NO.	L-40,955
DATE:	MAY 1997

PAGE NO.

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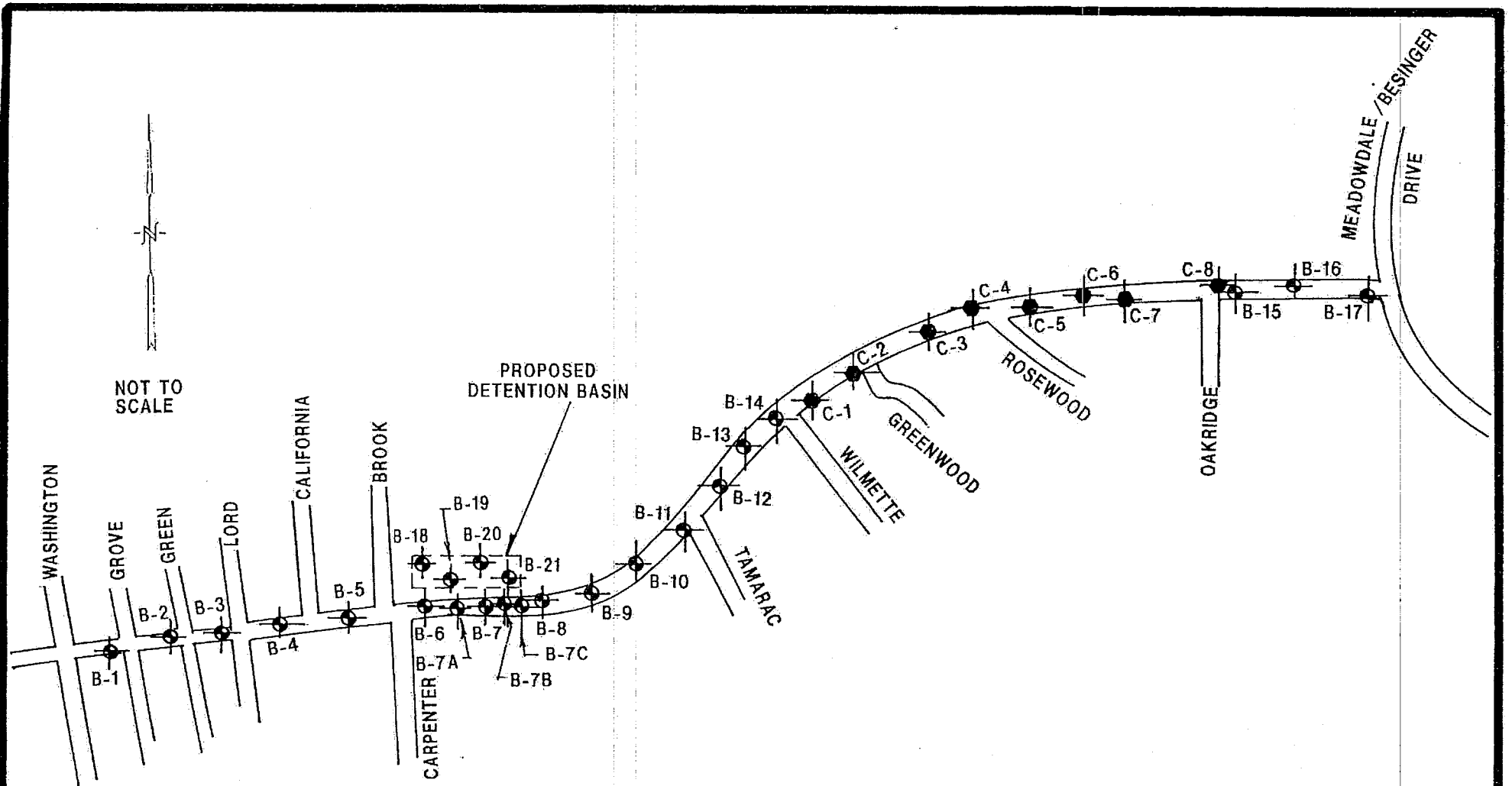


BORING AND CORE LOCATION PLAN

MAPLE AVENUE IMPROVEMENTS
CARPENTERSVILLE, ILLINOIS

TESTING SERVICE CORPORATION 457 EAST GUNDERSEN DRIVE CAROL STREAM, ILLINOIS 60188	DRAWN BY: DJM CHECKED BY: MB JOB NO. L-40,955 DATE: MAY 1997

PAGE NO.

TESTING SERVICE CORPORATION

CAROL STREAM, IL 60188-2492
457 E. GUNDERSEN DRIVE
(630) 653-3920
FAX (630) 653-2726

BLOOMINGTON, IL 61704-8141
2911 GILL STREET • SUITE A1
(309) 662-2215
FAX (309) 662-2138

CARY, IL 60013-2978
209 CLEVELAND STREET • UNIT C
(847) 516-0505
FAX (847) 516-0527

GURNEE, IL 60031-5906
401 RIVERSIDE DRIVE • UNIT 10
(847) 249-6040
FAX (847) 249-6042

PEORIA, IL 61615-1913
7806 N. PIONEER LANE • SUITE B
(309) 693-8310
FAX (309) 693-8312

TINLEY PARK, IL 60477-1755
16646 S. OAK PARK AVENUE
(708) 429-2080
FAX (708) 429-2144

May 30, 2012
L - 78,417

REPORT OF GEOTECHNICAL INVESTIGATION
IDOT PHASE II ENGINEERING
MAPLE AVENUE IMPROVEMENTS
SECTION 95-00049-00-PV
CARPENTERSVILLE, ILLINOIS

PREPARED FOR:
BAXTER & WOODMAN, INC.
8678 RIDGEFIELD ROAD
CRYSTAL LAKE, ILLINOIS

PREPARED BY:
TESTING SERVICE CORPORATION
457 EAST GUNDERSEN DRIVE
CAROL STREAM, ILLINOIS 60188
(630) 653-3920

May 30, 2012
L - 78,417

REPORT OF GEOTECHNICAL INVESTIGATION
IDOT PHASE II ENGINEERING
MAPLE AVENUE IMPROVEMENTS
SECTION 95-00049-00-PV
CARPENTERSVILLE, ILLINOIS

INTRODUCTION

This report presents the results of a soils exploration performed for the proposed construction of a three-sided, precast concrete bridge/culvert (18' x 6') below Maple Avenue in Carpentersville, Illinois. These geotechnical services were provided in accordance to TSC proposal No. 48,225, dated December 22, 2011 and the attached General Conditions which are incorporated herein by reference.

Current plans call for the construction of a precast concrete bridge at approximate Sta. 127+30, between Carpenter Blvd. and Brook Street. These improvements will be performed in connection with the reconstruction and/or the resurfacing of Maple Avenue between the approximate limits of Washington Street and Besinger Drive (approximate Sta. 329+72 to Sta. 398+29). Recommendations for the proposed pavement reconstruction and/or resurfacing were provided in TSC report L-40,955, dated June 2, 1997.

SITE DESCRIPTION AND GEOLOGY

The project is located at the northeast corner of Kane County, within the Village Limits of Carpentersville, Illinois. This site is located within Sections 14 and 15 or Algonquin Township, defined as T 42N, R 8E. Land use adjacent to the roadway includes residential, industrial and municipal buildings as well as a park area and farmland.

Site topography from west to east is gently sloping, first downward from Sta. 329+72 at Washington Street to a low point near Sta. 34+08, then upward to about Sta. 363+53 near Tamarac Street. East of Tamarac, grade rises steeply to about Rosewood Drive at Sta. 379+92 and thereafter returns to gently rolling to the end of the project at Besinger Drive.

Geologically, the western portion of the project site lies within surficial soils deposits of primarily sand and gravel deposited as outwash in glacial rivers. Surficial soil deposits in the eastern portion of the site consist of cohesive glacial till, occasionally interbedded with granular outwash. The cohesive soils typically exhibit moderated to high shear strengths at relatively moderate moisture contents.

Uppermost soils across many portions of this area consist of wind-blown loess and fine sand which has been weathered, decomposed and other wise modified such that it presently consists of clay loam of medium to high plasticity. Peat, organic clay and/or soft slopewash deposits may also be found in relatively low-lying areas associated with the moraine topography, particularly in the center portion of the site between Carpenter Boulevard and Tamarac Drive. Dolomitic limestone bedrock of Silurian age is expected to be overlain by about 100 feet of overburden in the vicinity of the site.

Included in the Appendix is a Pedological Soil Map for the site. A review of the map indicates that the area of the proposed three (3) sided bridge a Harpster Silty Clay Loam was encountered.

67 Harpster Silty Clay Loam, 0 to 2 percent slopes.

The proposed bridge site was bordered on the east by a Lena Muck (210) and on the west by a Bowes Silt Loam (792A). Harpster Silty Clay Loam is typically poorly drained - low lying areas where relatively soft and wet soil conditions frequently exist.

FIELD INVESTIGATION AND LABORATORY TESTING

One (1) twenty foot deep soil boring was drilled for this study. The boring was staked and ground surface elevations were determined by representatives of TSC. Reference is made to the Boring Location Plan included in the Appendix of this report.

The boring was drilled and samples tested according to currently recommended American Society for Testing and Material specifications. Soil sampling was performed at 2½-foot intervals. The samples were taken in conjunction with the Standard Penetration Test, for which driving resistance of the 2" split-spoon sampler (in blows per 6" interval) provides an indication of the relative density of granular materials and consistency of cohesive soils. Water level observations were taken during and following drilling operations and also 24 hours after the completion of the boring.

Soil samples were examined in the laboratory to verify field descriptions and to classify them in accordance with the AASHTO Soil Classification System. Laboratory testing included moisture content determinations for all cohesive and intermediate (silt or loamy) soil types. An estimate of unconfined compressive strength was obtained for cohesive samples using a calibrated hand penetrometer.

For classification purposes and to verify field identifications, seize analysis were performed on four (4) representative samples. Results of these tests are summarized in the Appendix of the appropriate soil test data sheet.

Reference is made to the appended boring log in the Appendix which indicates subsurface stratigraphy and soil descriptions, results of field and laboratory tests, as well as water level observations. Definitions of descriptive terminology are also included. While strata changes are shown as a definite line of the boring log, the actual transition between soil layers may be more gradual.

PRECIPITATION SUMMARY

The soil boring for the proposed three-sided bridge was drilled on May 22, 2012. Observations made of precipitation during the three months preceding our field work are summarized in the following table. These observations were obtained at the City of Elgin (Station 112736) located south of the project site.

Precipitation Data

Month	Monthly Total (Inches)	Departure From Normal (Inches)
January	0.9	1
February	1.2	+0.6
March	2.1	-0.2
April	2.4	-1.3

Based on the above data, it is anticipated that groundwater levels and soil moisture are probably below normal seasonal conditions due to lower than normal precipitation during the two months preceding the drilling.

DISCUSSION OF TEST DATA

Soil Boring Proposed Three-sided Bridge (B-1)

Fill soils were noted to an approximate depth of three feet. These included a surficial Topsoil layer over a combination of Sand and Gravel (A-1). Underlying these fill soils, native deposits of Sand and Gravel (A-1-a and A-1-b) were encountered. These soils were in primarily in a firm condition, the one exception being the zone encountered between an approximate depth of 10½ and 18 feet which was in a dense or a very dense condition. While the majority of the N-values for the native granular soils were in the range of 11 to 29 blows per foot (bpf) the zone encountered between an approximate depth of 10½ and 18 feet had a maximum N-value of 53 bpf.

Groundwater Observations

Water level observations were performed at Boring 1 during drilling, upon completion of the boring and also after 24 hours. The water level observations performed while drilling and also upon completion of the boring were at 5½ feet below existing grade. After 24 hours the borehole had caved in a dry condition at a depth of 5 feet.

CONCLUSIONS AND RECOMMENDATIONS

Boring 1 was drilled near the south end of the proposed three-sided bridge. Current information indicates that the structure will bear at approximate elevation 731.83 (i.e., an approximate depth of 4 feet at Boring 1). For the scour analysis an elevation of 735.83 will be used for the stream bed.

A combination of Sand and Gravel in a firm condition was encountered at the proposed bearing elevation (i.e., 4 feet below existing grade). These soils are capable of supporting a net bearing pressure of 3000 psf. While these soils are stable in a confined condition, they may tend to be temporarily unstable when they are encountered at the base of an excavation. In this event it will be necessary to undercut the footings by at least 12 inches with the width of the undercut exceeding the width of the footing by at least 6 inches on each side. This dimension should be increased by at least 6 inches on each side for each addition foot of undercut performed. Replacement materials below the footings should consist of Rock Fill which meets IDOT gradation CA-7 or CA-11. The Rock Fill should be spread in 12 - inch layers loose thickness, each lift to be densified by tamping with the bucket of a backhoe or other approved mechanical method. Footings supported on the compacted Rock Fill may be designed for a net bearing pressure of 3000 psf.

Seismic Considerations

The proposed three-sided bridge is located near the intersection of Carpenter Boulevard and Book Street in Carpentersville, Illinois. The following summarizes seismic design data and site classification that may be used for the design of the proposed three sided bridge.

Seismic Class: Class D
Seismic Performance Zone (SPZ): 1
Design Spectural Acceleration at 1.0 sec (S D1): 0.083g
Design Spectural Acceleration at 0.2 sec (S DS): 0.145g

Scour Potential

The proposed three sided bridge will bear at elevation 731.83 with the stream bed being at elevation 735.83 (approximate depth of 4 feet). Boring 1 was drilled near the south end of the proposed three sided bridge. The ground surface at the boring was at elevation 639.7.

Soils encountered at and just below the streambed consisted of combinations of sand and gravel. Grain size analysis were performed on four (4) representative samples in this area. The results of these tests are summarized on the sheet entitled "SOIL TEST DATA" and also on the grain size curves included with this report. The results of the D50 particle size analysis are summarized in the following table.

Boring	Sample Location	D50 Particle Size	Soil Classification
	Depth (Ft)		
B-1	3.5 - 5.0		
	8.5 - 10.0	0.9 mm	Sand little gravel
	11.0 - 12.5	8.5 mm	Gravel some sand
	13.5 - 15.0	20 mm	Gravel some sand

Lateral Earth Presssures

Lateral earth pressures for permanent underground structures will be dependent on the type of backfill used, whether it is in a drained or undrained state, as well as loading conditions. Equivalent fluid pressures given below for cohesive and granular backfills assuming active (Ka), at-rest (Ko) and passive (Kp) earth pressures. The values shown represent the increase in lateral pressure over a 1.0 foot distance measured in pounds per square foot (psf/ft).

EQUIVALENT FLUID PRESSURE (PSF/FT)

BACKFILL TYPE	DRAINED CONDITION	UNDRAINED CONDITION
	ACTIVE STATE	
Granular	35	80
Cohesive	50	90
	AT-REST STATE	
Granular	50	90
Cohesive	65	100
	PASSIVE STATE	
Granular	400	250
Cohesive	350	250

The active condition applies to retaining walls which are free to rotate at their top. At-rest pressures should be used for basement walls and other buried structures which are fixed at their top and bottom or otherwise restrained from moving. The passive state is induced in soil which is resisting lateral movement or displacement.

The values shown above are nominal, i.e., based on average soil conditions. They also assume a-level backfill height behind the walls; sloping backfill will increase lateral earth pressures and should be analyzed on an individual basis. An appropriate surcharge load should be applied at the top of below grade walls in computing lateral earth pressures; 100 to 200 psf is normally used for sidewalks and driveways. Finally, the height of free-standing retaining walls with clay backfill should be limited to approximately 6 feet, to avoid excessive deflections.

Backfill placed against retaining walls, basement walls and the like should be compacted to between 90 and 95 percent of Modified Proctor density. Compaction in excess of 95 percent is not desirable, since it can result in higher lateral earth pressures than recommended for design. Also, heavy compaction

equipment should not be used on the high side of the wall within a horizontal distance equal to the height of backfilling, as this may result in over-stressing of the wall and excessive deflection.

The sliding resistance at the base of foundation elements will be dependent on the normal load and friction coefficient of underlying soils. For granular soil types, nominal friction coefficients may be taken as 0.50.

Closure

The analysis and recommendations submitted in this report are based upon the data obtained from the soil boring performed at the location indicated on the Boring Location Plan. This report does not reflect any variations which may occur elsewhere at the site, the nature and extent of which may not become evident until during the course of construction. If variations are then identified, recommendations contained in this report should be re-evaluated after performing on-site observations.

We are available to review this report with you at your convenience.

Respectfully submitted,

Charles DuBose
Vice President
Registered Professional Engineer
Illinois No. 062-041049

Timothy Peceniak, P.E.
Geotechnical Engineer

Testing Service Corporation

STRUCTURE BORING LOG

Date Started 5/22/12

Date Completed 5/22/12

ROUTE _____ DESCRIPTION Maple Avenue Improvements

SECT. 95-00049-00-PV STRUCT. NO. _____ DRILLED BY TSC L-78,417

COUNTY _____ LOCATION Carpentersville S._____, TWP. ____, RNG. ____

Boring No. 1
Station _____
Offset ft
Surface Elev. 739.70 ft

Surface Water Elev. _____
Groundwater Elev.:
when drilling 734.2
at Completion 734.2
after 24 Hrs. Caved @ 5'

	DEPTH	BLOWS	Qu tsf	W %
FILL - Dark brown CLAY (Topsoil), moist				
738.40				
		9 12 10		3.4
FILL - Brown SAND and GRAVEL, moist A-1				
736.70				
Firm grayish-brown SAND, little to some gravel, trace sand and silt, very moist to wet A-1-b		7 9 10		6.6
	-5			
		4 5 6		11.7
		4 5 8		12.1
	-10			
729.20				
Dense brown GRAVEL and SAND, trace clay and silt, wet A-1-a		6 12 20		9.1
726.70				
Very dense to dense gray GRAVEL, some sand, trace silt and clay, wet A-1-a		21 38 15		11.2
	-15			
		32 12 14		9.7
721.70				
Firm gray SAND, trace gravel, wet A-1-b		7 7 12		15.8
	-20			
		6 7 8		14.0
		6 7 10		11.9
	-25			

	DEPTH	BLOWS	Qu tsf	W %
Firm gray SAND, trace gravel, wet A-1-b		7 12 17		13.3
		7 8 11		12.1
	-30			
		8 11 13		15.5
		8 12 17		15.7
704.70	-35			
End of Boring at 35.0'				
	-40			
Sample 4: 15% Gravel 79% Sand 6% Silt and Clay				
Sample 5: 59% Gravel 37% Sand 4% Silt and Clay	-45			
Sample 6: 69% Gravel 26% Sand 5% Silt and Clay				
	-50			

DOT_BORING 78417.GPJ IDOT.GDT 5 29 12

SPT. (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test
Stations, Depths, Offset, and Elevations are in Feet

Testing Service Corporation

STRUCTURE BORING LOG

Date Started 5/22/12

Date Completed 5/22/12

ROUTE _____ DESCRIPTION Maple Avenue Improvements

SECT. 95-00049-00-PV STRUCT. NO. _____ DRILLED BY TSC L-78,417

COUNTY _____ LOCATION Carpentersville S._____, TWP. ____, RNG. ____

Boring No. 2
Station _____
Offset ft
Surface Elev. 743.50 ft

Surface Water Elev. _____
Groundwater Elev.:
when drilling Dry
at Completion Dry
after 24 Hrs. Dry

		DEPTH	BLOWS	Qu tsf	W %
FILL - Black CLAY (Topsoil)	743.00				
FILL - Black and gray CLAY, very moist A-7-6			3 3 3	P 0.5	24.5
	740.50				
Black CLAY LOAM, very moist A-6		-5	1 4 4	P 0.25	28.8
	738.00				
Firm brown SANDY LOAM, very moist A-2-4			6 6 8		7.8
	735.50				
Firm brown SAND and GRAVEL, very moist A-1		-10	5 8 8		6.1
	733.50				
End of Boring at 10.0'					
		-15			
		-20			
		-25			

SPT. (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test
Stations, Depths, Offset, and Elevations are in Feet

ILDOT_BORING 78417.GPJ IDOT.GDT 5 25 12

Testing Service Corporation

STRUCTURE BORING LOG

Date Started 5/22/12

Date Completed 5/22/12

ROUTE _____ DESCRIPTION Maple Avenue Improvements

SECT. 95-00049-00-PV STRUCT. NO. _____ DRILLED BY TSC L-78,417

COUNTY _____ LOCATION Carpentersville S._____, TWP. ____, RNG. ____

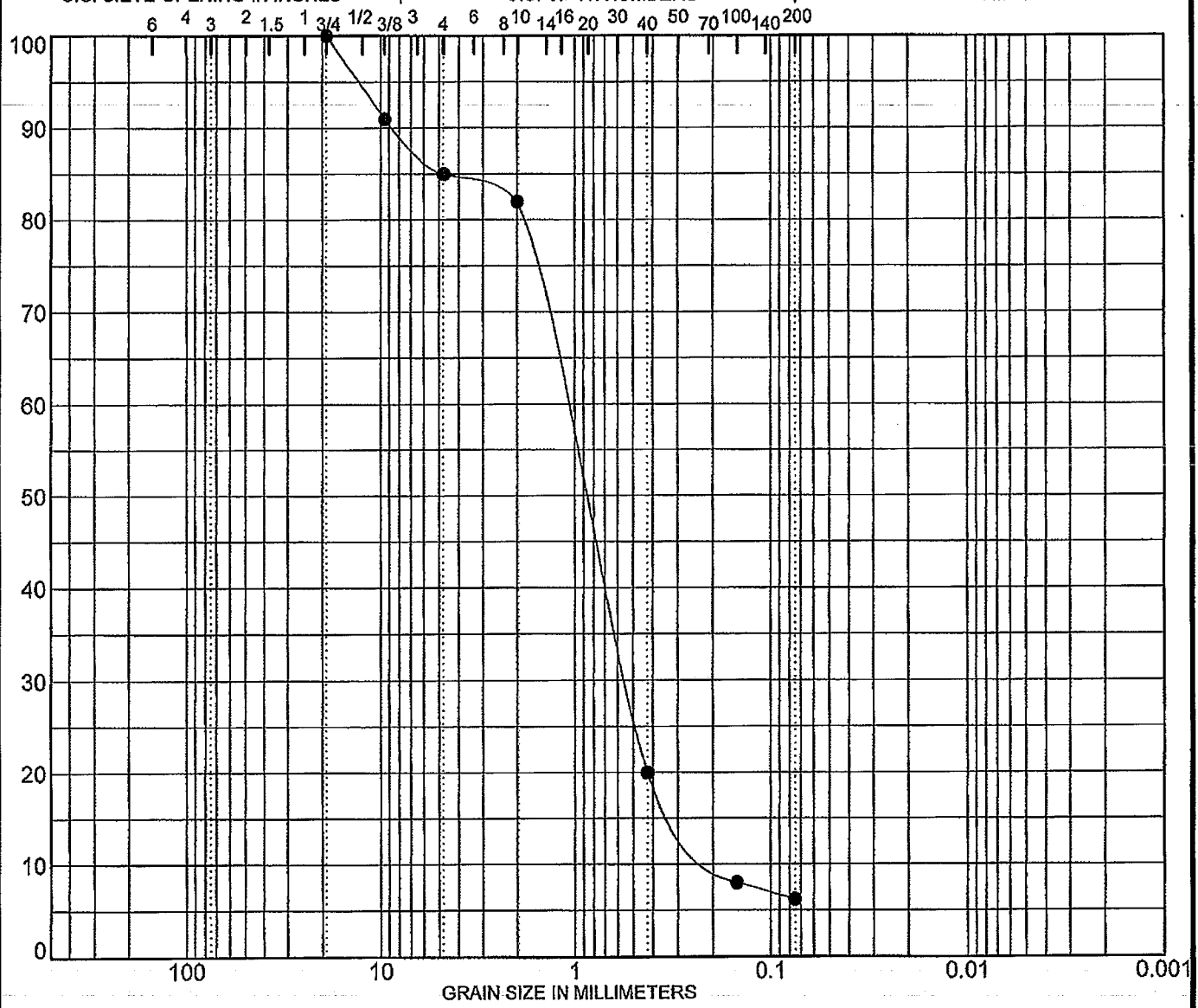
Boring No. 3
Station _____
Offset ft
Surface Elev. 721.40 ft

Surface Water Elev. _____
Groundwater Elev.:
when drilling 712.9
at Completion 712.9
after 24 Hrs. Dry

		DEPTH	BLOWS	Qu tsf	W %
FILL - Crushed STONE A-1-a	720.90				
FILL - Brown SANDY LOAM and GRAVEL, moist A-2-4	719.90		3 3 3	P 2.5	5.0 30.2
Black CLAY (Topsoil), very moist A-7-6			2 2 3	P 2.0	31.9
		-5			
	715.90				
Firm gray SAND and GRAVEL, moist A-1-a			11 14 15		5.3
			11 14 15		7.3
	711.40	-10			
End of Boring at 10.0'					
		-15			
		-20			
		-25			

ILDOT_BORING 78417.GPJ IDOT.GDT 5 25 12

SPT. (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test
Stations, Depths, Offset, and Elevations are in Feet



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

SPECIMEN IDENTIFICATION	SIEVE	% PASS
Boring: 1	3 inch	100
Sample: 4	2	100
	1 1/2	100
	1	100
NOTES:	3/4	100
	3/8	91
	# 4	85
	# 10	82
	# 40	20
	# 100	8
	# 200	6

SOIL CLASSIFICATION

Gray SAND, little gravel, trace silt and clay

(SP) A-1-b

%GRAVEL	%SAND	%SILT	%CLAY
15	79	(6% Combined)	

PROJECT IDOT Phase II Engineering
LOCATION Carpentersville, Illinois

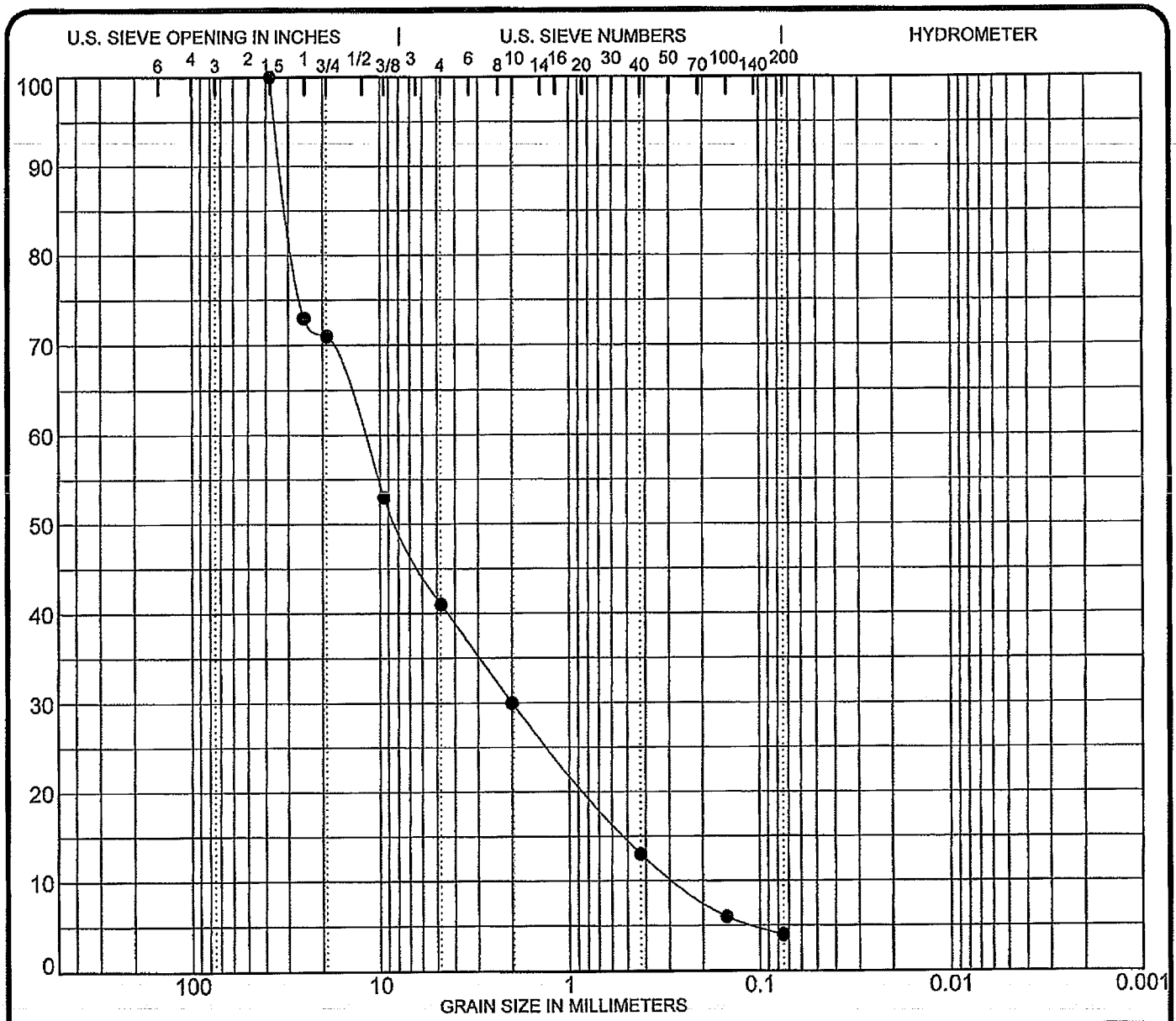
JOB NO. L - 78,417
DATE May 29, 2012

1

SOIL DATA SHEET

Testing Service Corporation
Carol Stream, IL 60188

SOILGENR 78417A.GPJ TSC ALL.GDT 5/29/12



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

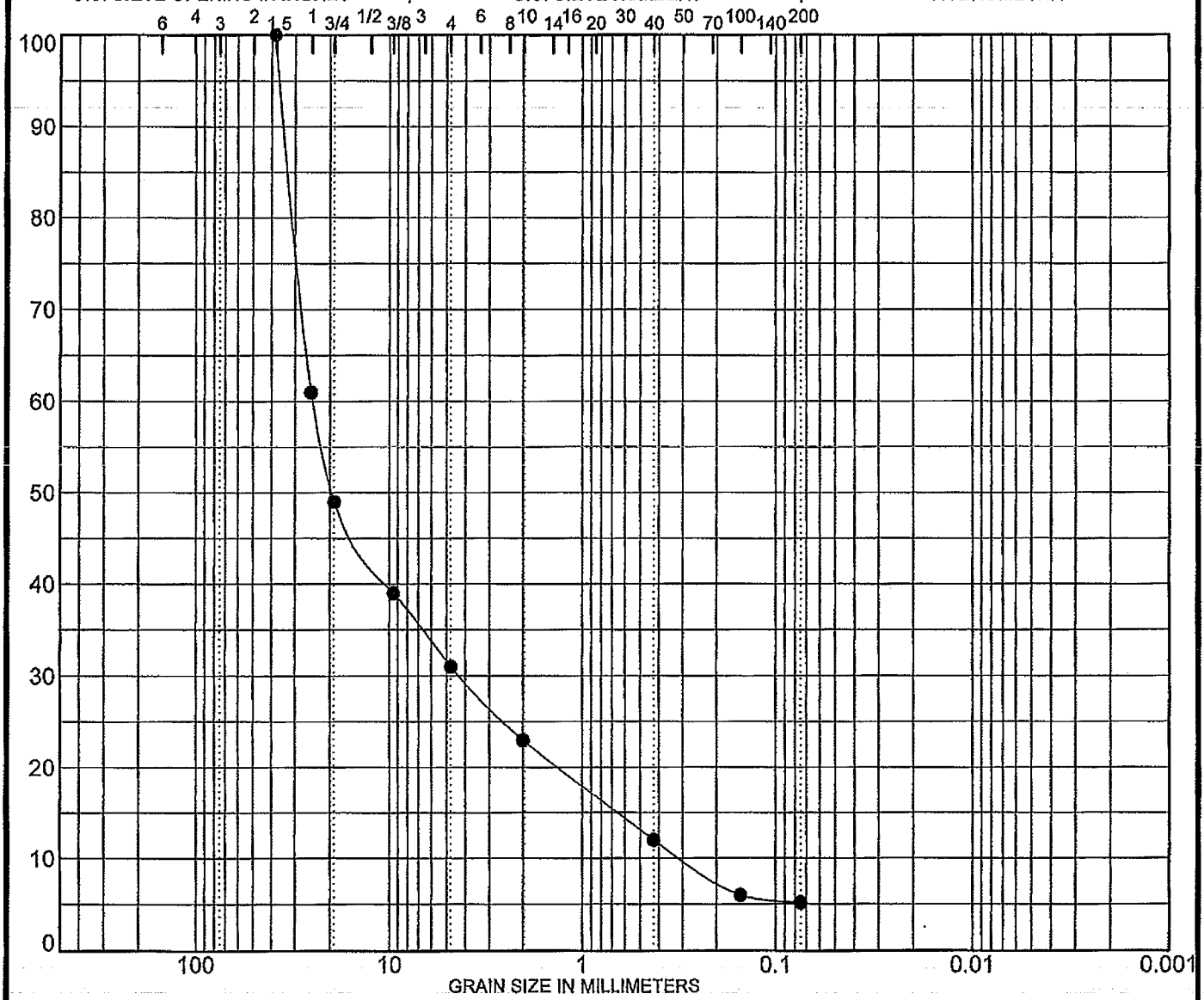
SPECIMEN IDENTIFICATION	SIEVE	% PASS	SOIL CLASSIFICATION
Boring: 1	3 inch	100	Gray SAND and GRAVEL, trace silt and
Sample: 5	2	100	clay (SP-GP) A-1-a
	1 1/2	100	
	1	73	%GRAVEL 59 / %SAND 37 / %SILT (4% Combined) / %CLAY
NOTES:	3/4	71	
	3/8	53	
	# 4	41	
	# 10	30	
	# 40	13	
	# 100	6	
	# 200	4	

PROJECT IDOT Phase II Engineering
LOCATION Carpentersville, Illinois
JOB NO. L - 78,417
DATE May 29, 2012

1

SOIL DATA SHEET
Testing Service Corporation
Carol Stream, IL 60188

SOILGENR 78417A.GPJ TSC ALL.GDT 5/29/12



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

SPECIMEN IDENTIFICATION	SIEVE	% PASS
Boring: 1	3 inch	100
Sample: 6	2	100
	1 1/2	100
	1	61
NOTES:	3/4	49
	3/8	39
	# 4	31
	# 10	23
	# 40	12
	# 100	6
	# 200	5

SOIL CLASSIFICATION

Gray GRAVEL, some sand, trace silt and clay (GP) A-1-a

%GRAVEL	%SAND	%SILT	%CLAY
69	26	(5% Combined)	

PROJECT IDOT Phase II Engineering
LOCATION Carpentersville, Illinois

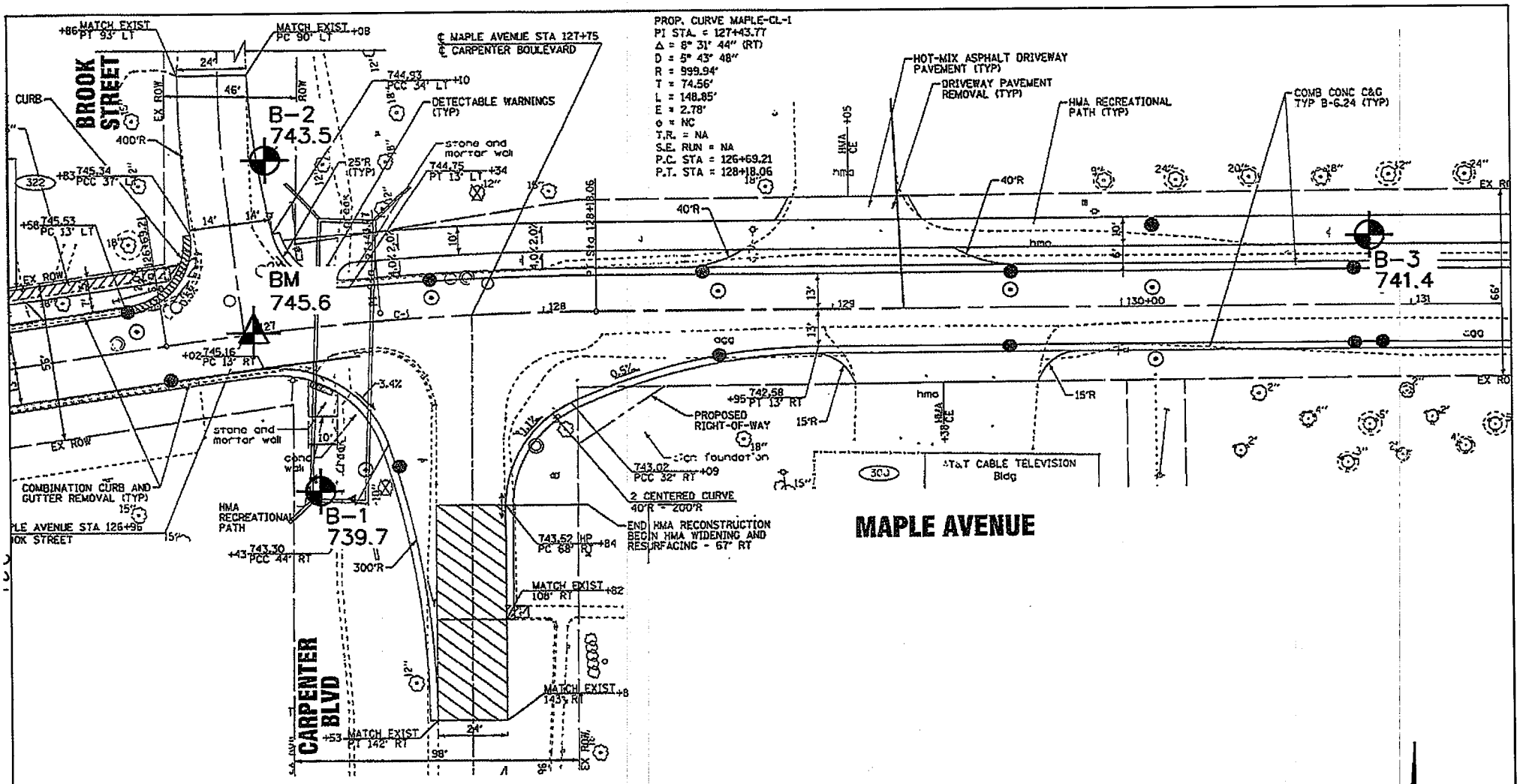
JOB NO. L - 78,417
DATE May 29, 2012

1

SOIL DATA SHEET

Testing Service Corporation
Carol Stream, IL 60188

SOILGENR 78417A.GPJ TSC ALL.GDT 5/29/12



BENCHMARK: MAPLE AVENUE STATION 127+00, APPROXIMATELY 4 FEET EAST OF BROOK STREET CENTERLINE, ELEVATION 745.58

SCALE 1" = 50'

LEGEND

SOIL BORING LOCATION

BORING LOCATION PLAN
IDOT PHASE II ENGINEERING
MAPLE AVENUE IMPROVEMENTS
CARPENTERSVILLE, ILLINOIS

TESTING SERVICE CORPORATION
457 EAST GUNDERSEN DRIVE
CAROL STREAM, ILLINOIS 60188

DRAWN BY: TRP
CHECKED BY: CRD
JOB NO. : L-78,417
DATE: 05-25-12

PAGE NO. 1 OF 1

TESTING SERVICE CORPORATION

Corporate Office

360 South Main Place, Carol Stream, IL 60188-2404
630.462.2600 • Fax 630.653.2988

December 13, 2012

Mr. Robert Lenzini
Baxter & Woodman, Inc.
8678 Ridgefield Road
Crystal Lake, Illinois 60012

RE: L-78,417A
Soil Sampling & Analysis for LPC-663 Form
IDOT Phase II Engineering
Maple Avenue Improvements
Section 95-00049-00-PV
Carpentersville, IL

Dear Mr. Lenzini:

Testing Service Corporation (TSC) has completed soil sampling and laboratory analyses for the above captioned project.

Background:

TSC initially performed three soil borings (B-1, B-2 and B-3) on May 22, 2012 for collection of soil samples for screening using a Mini-RAE photo-ionization detector (PID) and analytical testing for completion of the LPC-663 form. The PID screening detected no readings exceeding 0.0 ppm. Two discrete soil samples (B-1/E-3 and B-2/E-1) were selected for analytical testing. These samples were provided to the analytical laboratory using standard chain of custody procedures for analysis of volatile organic compounds (VOC's), PNAs, RCRA metals and pH. The analytical results were compared to the most stringent Tier 1 Remediation Objectives in 35 IAC 742 (TACO), as was appropriate at the time. All analyses met the Tier 1 Remediation Objectives and a copy of the LPC-663 Form was signed by a Licensed Professional Engineer on June 11, 2012.

In August, 2012, the Illinois Pollution Control Board adopted a rule implementing provisions in Section 22.51 and 22.51a of the Environmental Protection Act (415 ILCS 5/22.51 and 22.51a) and adopted new regulations presented in 35 IAC 1100. These new regulations included Maximum Allowable Concentrations of Chemical Constituents (MACs) listed in 35 IAC 1100 Subpart F, as well as a requirement that the pH of the soil be in the range of 6.25-9.0. A revised LPC-663 form was also issued on August 27, 2012 by the Illinois Environmental Protection Agency reflecting the new 35 IAC 1100 regulations.

TSC was contacted by the client and requested to evaluate the analytical data in light of the new regulations and to sign the revised LPC-663 form. TSC could not sign the current LPC-663 form based on the pH concentration of 9.34 at B-1/E-3. TSC recommended additional soil sampling.

Soil Sampling & Analysis:

On November 27, 2012, TSC returned to the source site to perform soil borings near borings B-1 and B-3. Boring B-1+10'N was performed 10 feet north of B-1; boring B-3+5'N was performed 5 feet north of boring 3. Boring B-1+10'N was advanced by hand auger methods to a depth of 10 feet and boring B-3+5'N was terminated at 7.5 feet. The soil was screened using a Mini-RAE 3000 photo-ionization detector (PID), which detected no readings exceeding background conditions of 0.4 ppm or less. Four samples (S-1 through S-4) were selected from B-1+10'N for analysis of pH. Sample S-3 was selected from B-3+5'N for analysis of volatile organic compounds (VOC's), PNAs, RCRA metals and pH. The samples were placed in laboratory supplied jars and transported to the analytical laboratory using standard chain of custody procedures.

The analytical results were compared to the Maximum Allowable Concentrations of Chemical Constituents (MACs) listed in 35 IAC 1100 Subpart F. The analytical results obtained indicate that the sample B-3+5'N/S-3 meets the MAC values for those parameters analyzed. Additionally, all four soil samples at B-1+10'N are within the required range of 6.25-9.0. The elevated pH concentration from the original B-1 sample is therefore considered an isolated condition, not representative of the soil at the source site as a whole. Based on the pH analysis of the four samples, as well as pH analysis at borings B-2 and B-3, it is the opinion of the Professional Geologist that the pH meets the MACs for those parameters analyzed, and is therefore uncontaminated soil.

A copy of the IEPA Form LPC-663, Uncontaminated Soil Certification, signed by a Licensed Professional Geologist, along with the analytical report and chain of custody is attached.

If conditions other than those found during the soil exploration are encountered, please contact us to perform a follow up survey. Also note that although the chemical analysis from the representative sample meets the MACs, disposal facilities screen each load with a PID, which will determine the final acceptance of individual loads.

We appreciate the opportunity to be of service to you. Please contact us with any questions.

Respectfully,

TESTING SERVICE CORPORATION

Brian K. Walker, P.G.196.000772
Manager, Environmental Assessments

Enc: LPC-663 Form
Analytical Report and Chain of Custody Sampled 5/22/12
Analytical Report and Chain of Custody Sampled 11/27/12
Boring Location Plan
Boring Logs
General Conditions

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: Maple Avenue Improvements - Section 95-00049-00 Office Phone Number, if available: 847-551-3480

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

Maple Avenue

City: Carpentersville State: IL Zip Code: 60110

County: Kane Township: Dundee

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

Latitude: 42.11217 (Decimal Degrees) Longitude: -88.28183 (-Decimal Degrees)

Identify how the lat/long data were determined:

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

Google Earth

IEPA Site Number(s), if assigned: BOL: None BOW: None BOA: None

II. Owner/Operator Information for Source Site

Site Owner		Site Operator	
Name:	Village of Carpentersville	Name:	Same
Street Address:	1200 L. W. Besinger Drive	Street Address:	
PO Box:		PO Box:	
City:	Carpentersville State: IL	City:	State:
Zip Code:	60110 Phone: 847-551-3480	Zip Code:	Phone:
Contact:	Ed Szydlowski	Contact:	
Email, if available:	eszydlowski@carpentersville.il.us	Email, if available:	

This Agency is authorized to require this information under Section 4 and Title X of the Environmental Protection Act (415 ILCS 5/4, 5/39). Failure to disclose this information may result in: a civil penalty of not to exceed $50,000 for the violation and an additional civil penalty of not to exceed $10,000 for each day during which the violation continues (415 ILCS 5/42). This form has been approved by the Forms Management Center.

Project Name: Maple Avenue Improvements - Section 95-00049

Latitude: 42.11217 Longitude: -88.28183

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)]:

Three soil borings performed in area of street improvements 5/12. Soil samples screened with Mini-RAE 3000 PID which identified no VOC readings exceeding background concentrations of less than 1 ppm. Two samples B-1/E-3 and B-2/E-1 analyzed for VOC's, PNA's, RCRA Metals & pH and met TACO Tier 1 ROs and LPC-663 signed. But B-1/E-3 had pH of 9.34.

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]:

Resampled project 11/12. Boring B-3+5N analyzed for VOC's, PNA's, RCRA Metals & pH and met MACs. Four samples from Boring B-1+10'N, located 10' north of B-1, analyzed for pH. All four samples in acceptable pH range of 6.25-9.0. On basis of additional analysis, pH is considered in acceptable range.

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

I, Brian K. Walker (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: Testing Service Corporation

Street Address: 360 South Main Place

City: Carol Stream State: IL Zip Code: 60188

Phone: 630-462-2600

Brian K. Walker
Printed Name:

Licensed Professional Engineer or
Licensed Professional Geologist Signature:

12-13-12
Date:

LICENSED PROFESSIONAL GEOLOGIST
BRIAN K. WALKER
196.000772
ILLINOIS

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

First Environmental Laboratories, Inc.
IL ELAP / NELAC Accreditation # 100292
1600 Shore Road • Naperville, Illinois 60563 • Phone (630) 778-1200 • Fax (630) 778-1233

June 08, 2012

Mr. Dave Hurst
TESTING SERVICE CORP.
360 So. Main Place
Carol Stream, IL 60188

Project ID: 78417
First Environmental File ID: 12-2497
Date Received: May 25, 2012

Dear Mr. Dave Hurst:

Attached is the revised report for the project referenced above. These pages supersede the report previously submitted.

I thank you for the opportunity to be of service to you and look forward to working with you again in the future. Should you have any questions regarding any of the enclosed analytical data or need additional information, please contact me at (630) 778-1200.

Sincerely,

Stan Zaworski
Project Manager

First
Environmental
Laboratories, Inc.
IL ELAP / NELAC Accreditation # 100292
1600 Shore Road • Naperville, Illinois 60563 • Phone (630) 778-1200 • Fax (630) 778-1233

Case Narrative

TESTING SERVICE CORP.

Project ID: **78417**

First Environmental File ID: **12-2497**

Date Received: **May 25, 2012**

Flag	Description	Flag	Description
<	Analyte not detected at or above the reporting limit.	L+	LCS recovery outside control limits; high bias.
B	Analyte detected in associated method blank.	L-	LCS recovery outside control limits; low bias.
C	Identification confirmed by GC/MS.	M	MS recovery outside control limits; LCS acceptable.
D	Surrogates diluted out; recovery not available.	M+	MS recovery outside control limits high bias; LCS acceptable.
E	Estimated result; concentration exceeds calibration range.	M-	MS recovery outside control limits low bias; LCS acceptable.
F	Field measurement.	N	Analyte is not part of our NELAC accreditation.
		ND	Analyte was not detected using a library search routine; No calibration standard was analyzed.
G	Surrogate recovery outside control limits; matrix effect.	P	Chemical preservation pH adjusted in lab.
H	Analysis or extraction holding time exceeded.	Q	The analyte was determined by a GC/MS database search.
J	Estimated result; concentration is less than calib range.	S	Analyte was sub-contracted to another laboratory for analysis.
K	RPD outside control limits.	T	Sample temperature upon receipt exceeded 0-6°C
RL	Routine Reporting Limit (Lowest amount that can be detected when routine weights/volumes are used without dilution.)	W	Reporting limit elevated due to sample matrix.

All quality control criteria, as outlined in the methods, have been met except as noted below or on the following analytical report.

Sample Batch Comments:

Sample acceptance criteria were met.

First Environmental Laboratories, Inc.
IL ELAP / NELAC Accreditation # 100292
1600 Shore Road • Naperville, Illinois 60563 • Phone (630) 778-1200 • Fax (630) 778-1233

Analytical Report

Client: TESTING SERVICE CORP.
Project ID: 78417
Sample ID: B-1, E-3
Sample No: 12-2497-001

Date Collected: 05/22/12
Time Collected: 9:00
Date Received: 05/25/12
Date Reported: 06/08/12

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total	**Method: 2540B**			
Analysis Date: 05/25/12				
Total Solids	94.30		%	
Volatile Organic Compounds	**Method: 5035A/8260B**			
Analysis Date: 05/31/12				
Acetone	< 100	100	ug/kg	
Benzene	< 5.0	5.0	ug/kg	
Bromodichloromethane	< 5.0	5.0	ug/kg	
Bromoform	< 5.0	5.0	ug/kg	
Bromomethane	< 10.0	10.0	ug/kg	
2-Butanone (MEK)	< 100	100	ug/kg	
Carbon disulfide	< 5.0	5.0	ug/kg	
Carbon tetrachloride	< 5.0	5.0	ug/kg	
Chlorobenzene	< 5.0	5.0	ug/kg	
Chlorodibromomethane	< 5.0	5.0	ug/kg	
Chloroethane	< 10.0	10.0	ug/kg	
Chloroform	< 5.0	5.0	ug/kg	
Chloromethane	< 10.0	10.0	ug/kg	
1,1-Dichloroethane	< 5.0	5.0	ug/kg	
1,2-Dichloroethane	< 5.0	5.0	ug/kg	
1,1-Dichloroethene	< 5.0	5.0	ug/kg	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
1,2-Dichloropropane	< 5.0	5.0	ug/kg	
cis-1,3-Dichloropropene	< 4.0	4.0	ug/kg	
trans-1,3-Dichloropropene	< 4.0	4.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
2-Hexanone	< 10.0	10.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/kg	
Methylene chloride	< 20.0	20.0	ug/kg	
Styrene	< 5.0	5.0	ug/kg	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/kg	
Tetrachloroethene	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
1,1,1-Trichloroethane	< 5.0	5.0	ug/kg	
1,1,2-Trichloroethane	< 5.0	5.0	ug/kg	
Trichloroethene	< 5.0	5.0	ug/kg	

First Environmental Laboratories, Inc.
IL ELAP / NELAC Accreditation # 100292
1600 Shore Road • Naperville, Illinois 60563 • Phone (630) 778-1200 • Fax (630) 778-1233

Analytical Report

Client: TESTING SERVICE CORP.
Project ID: 78417
Sample ID: B-1, E-3
Sample No: 12-2497-001

Date Collected: 05/22/12
Time Collected: 9:00
Date Received: 05/25/12
Date Reported: 06/08/12

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 05/31/12				
Vinyl acetate	< 10.0	10.0	ug/kg	
Vinyl chloride	< 10.0	10.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Polynuclear Aromatic Hydrocarbons **Method: 8270C** **Preparation Method 3540C**				
Analysis Date: 06/01/12 Preparation Date: 05/30/12				
Acenaphthene	< 50	50	ug/kg	
Acenaphthylene	< 50	50	ug/kg	
Anthracene	< 50	50	ug/kg	
Benzo(a)anthracene	< 8.7	8.7	ug/kg	
Benzo(a)pyrene	< 15	15	ug/kg	
Benzo(b)fluoranthene	< 11	11	ug/kg	
Benzo(k)fluoranthene	< 11	11	ug/kg	
Benzo(ghi)perylene	< 50	50	ug/kg	
Chrysene	< 50	50	ug/kg	
Dibenzo(a,h)anthracene	< 20	20	ug/kg	
Fluoranthene	< 50	50	ug/kg	
Fluorene	< 50	50	ug/kg	
Indeno(1,2,3-cd)pyrene	< 29	29	ug/kg	
Naphthalene	< 25	25	ug/kg	
Phenanthrene	< 50	50	ug/kg	
Pyrene	< 50	50	ug/kg	
Total Metals **Method: 6010B** **Preparation Method 3050B**				
Analysis Date: 06/01/12 Preparation Date: 05/29/12				
Arsenic	9.3	0.2	mg/kg	
Barium	9.5	0.1	mg/kg	
Cadmium	1.0	0.1	mg/kg	
Chromium	5.4	0.1	mg/kg	
Lead	3.8	0.2	mg/kg	
Selenium	< 0.2	0.2	mg/kg	
Silver	< 0.1	0.1	mg/kg	
Total Mercury **Method: 7470A**				
Analysis Date: 05/31/12				
Mercury	< 0.05	0.05	mg/kg	

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Analytical Report

Client: TESTING SERVICE CORP.
Project ID: 78417
Sample ID: B-1, E-3
Sample No: 12-2497-001

Date Collected: 05/22/12
Time Collected: 9:00
Date Received: 05/25/12
Date Reported: 06/08/12

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
pH @ 25°C, 1:2 **Method: 9045C**				
Analysis Date: 05/30/12 15:30				
pH @ 25°C, 1:2	9.34		Units	

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Analytical Report

Client: TESTING SERVICE CORP.
Project ID: 78417
Sample ID: B-2, E-1
Sample No: 12-2497-002

Date Collected: 05/22/12
Time Collected: 11:00
Date Received: 05/25/12
Date Reported: 06/08/12

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total	**Method: 2540B**			
Analysis Date: 05/25/12				
Total Solids	82.93		%	
Volatile Organic Compounds	**Method: 5035A/8260B**			
Analysis Date: 05/31/12				
Acetone	< 100	100	ug/kg	
Benzene	< 5.0	5.0	ug/kg	
Bromodichloromethane	< 5.0	5.0	ug/kg	
Bromoform	< 5.0	5.0	ug/kg	
Bromomethane	< 10.0	10.0	ug/kg	
2-Butanone (MEK)	< 100	100	ug/kg	
Carbon disulfide	< 5.0	5.0	ug/kg	
Carbon tetrachloride	< 5.0	5.0	ug/kg	
Chlorobenzene	< 5.0	5.0	ug/kg	
Chlorodibromomethane	< 5.0	5.0	ug/kg	
Chloroethane	< 10.0	10.0	ug/kg	
Chloroform	< 5.0	5.0	ug/kg	
Chloromethane	< 10.0	10.0	ug/kg	
1,1-Dichloroethane	< 5.0	5.0	ug/kg	
1,2-Dichloroethane	< 5.0	5.0	ug/kg	
1,1-Dichloroethene	< 5.0	5.0	ug/kg	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
1,2-Dichloropropane	< 5.0	5.0	ug/kg	
cis-1,3-Dichloropropene	< 4.0	4.0	ug/kg	
trans-1,3-Dichloropropene	< 4.0	4.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
2-Hexanone	< 10.0	10.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/kg	
Methylene chloride	< 20.0	20.0	ug/kg	
Styrene	< 5.0	5.0	ug/kg	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/kg	
Tetrachloroethene	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
1,1,1-Trichloroethane	< 5.0	5.0	ug/kg	
1,1,2-Trichloroethane	< 5.0	5.0	ug/kg	
Trichloroethene	< 5.0	5.0	ug/kg	

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Analytical Report

Client: TESTING SERVICE CORP.
Project ID: 78417
Sample ID: B-2, E-1
Sample No: 12-2497-002

Date Collected: 05/22/12
Time Collected: 11:00
Date Received: 05/25/12
Date Reported: 06/08/12

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 05/31/12				
Vinyl acetate	< 10.0	10.0	ug/kg	
Vinyl chloride	< 10.0	10.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 06/01/12		Preparation Date: 05/30/12		
Acenaphthene	< 50	50	ug/kg	
Acenaphthylene	< 50	50	ug/kg	
Anthracene	< 50	50	ug/kg	
Benzo(a)anthracene	12.8	8.7	ug/kg	
Benzo(a)pyrene	17	15	ug/kg	
Benzo(b)fluoranthene	21	11	ug/kg	
Benzo(k)fluoranthene	15	11	ug/kg	
Benzo(ghi)perylene	< 50	50	ug/kg	
Chrysene	< 50	50	ug/kg	
Dibenzo(a,h)anthracene	< 20	20	ug/kg	
Fluoranthene	< 50	50	ug/kg	
Fluorene	< 50	50	ug/kg	
Indeno(1,2,3-cd)pyrene	< 29	29	ug/kg	
Naphthalene	< 25	25	ug/kg	
Phenanthrene	< 50	50	ug/kg	
Pyrene	< 50	50	ug/kg	
Total Metals **Method: 6010B**		**Preparation Method 3050B**		
Analysis Date: 06/07/12		Preparation Date: 05/29/12		
Arsenic	9.4	0.2	mg/kg	
Barium	466	0.1	mg/kg	
Cadmium	1.5	0.1	mg/kg	
Chromium	17.9	0.1	mg/kg	
Lead	17.2	0.2	mg/kg	
Selenium	1.1	0.2	mg/kg	
Silver	< 0.1	0.1	mg/kg	
Total Mercury **Method: 7470A**				
Analysis Date: 05/31/12				
Mercury	< 0.05	0.05	mg/kg	

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Analytical Report

Client: TESTING SERVICE CORP.
Project ID: 78417
Sample ID: B-2, E-1
Sample No: 12-2497-002
Date Collected: 05/22/12
Time Collected: 11:00
Date Received: 05/25/12
Date Reported: 06/08/12

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
pH @ 25°C, 1:2 **Method: 9045C**				
Analysis Date: 05/30/12 15:30				
pH @ 25°C, 1:2	8.13		Units	

CHAIN OF CUSTODY RECORD

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Naperville, Illinois 60563
Phone: (630) 778-1200 • Fax: (630) 778-1233
E-mail: firstinfo@firstenv.com
IEPA Certification #100292

Company Name: TSC
Street Address: 360 S. MAIN Place
City: Carol Stream State: IL Zip: 60188
Phone: 6307622900 Fax: — e-mail: dhurst@tscorp.com
Send Report To: D. Hurst Via: Fax ☐ e-mail ☑
Sampled By: D. Hurst

Project I.D.: 7841
P.O. #.:

Matrix Codes: S = Soil W = Water O = Other

Date/Time Taken	Sample Description	Matrix	VOCs	PNAs	RCRA metals	pH					Comments	Lab I.D.
5-22-12 9:00	B-1, E-3	S	X	X	X	X					12-2497-	001
5-22-12 11:00	B-2, E-1	1	X	X	X	X						002

FOR LAB USE ONLY:

Cooler Temperature: 0.1-6°C Yes X No ____ °C
Received within 6 hrs. of collection: X
Ice Present: Yes X No

Sample Refrigerated: Yes ___ No ___
Refrigerator Temperature: ____ °C
5035 Vials Frozen: Yes ___ No ___
Freezer Temperature: ____ °C

Containers Received Preserved: ☐ Yes ☐ No
Need to meet: IL. TACO ☐ IN. RISC ☐

Notes and Special Instructions:

Relinquished By: D. Hurst Date/Time 5.25.12 1250pm Received By: Tal Thurkoyes Date/Time 5.25.12 1250p
Relinquished By: ____ Date/Time ____ Received By: ____ Date/Time ____

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December 05, 2012

Mr. Brian Walker
TESTING SERVICE CORP.
360 So. Main Place
Carol Stream, IL 60188

Project ID: 78417
First Environmental File ID: 12-6275
Date Received: November 27, 2012

Dear Mr. Brian Walker:

The above referenced project was analyzed as directed on the enclosed chain of custody record.

All Quality Control criteria as outlined in the methods and current IL ELAP/NELAP have been met unless otherwise noted. QA/QC documentation and raw data will remain on file for future reference. Our accreditation number is 100292 and our current certificate is number 002902: effective 03/08/2012 through 02/28/2013.

I thank you for the opportunity to be of service to you and look forward to working with you again in the future. Should you have any questions regarding any of the enclosed analytical data or need additional information, please contact me at (630) 778-1200.

Sincerely,

Stan Zaworski
Project Manager

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Case Narrative

TESTING SERVICE CORP.

Project ID: **78417**

First Environmental File ID: **12-6275**

Date Received: **November 27, 2012**

Key	Description	Key	Description
<	Analyte not detected at or above the reporting limit.	L+	LCS recovery outside control limits; high bias.
B	Analyte detected in associated method blank.	L-	LCS recovery outside control limits; low bias.
C	Identification confirmed by GC/MS.	M	MS recovery outside control limits; LCS acceptable.
D	Surrogates diluted out; recovery not available.	M+	MS recovery outside control limits high bias; LCS acceptable.
E	Estimated result; concentration exceeds calibration range.	M-	MS recovery outside control limits low bias; LCS acceptable.
F	Field measurement.	N	Analyte is not part of our NELAC accreditation.
		ND	Analyte was not detected using a library search routine; No calibration standard was analyzed.
G	Surrogate recovery outside control limits; matrix effect.	P	Chemical preservation pH adjusted in lab.
H	Analysis or extraction holding time exceeded.	Q	The analyte was determined by a GC/MS database search.
J	Estimated result; concentration is less than calib range.	S	Analyte was sub-contracted to another laboratory for analysis.
K	RPD outside control limits.	T	Sample temperature upon receipt exceeded 0-6°C
RL	Routine Reporting Limit (Lowest amount that can be detected when routine weights/volumes are used without dilution.)	W	Reporting limit elevated due to sample matrix.

All quality control criteria, as outlined in the methods, have been met except as noted below or on the following analytical report.

Sample Batch Comments:

Sample acceptance criteria were met.

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Analytical Report

Client: TESTING SERVICE CORP.
Project ID: 78417
Sample ID: B-3 + 5N S-3
Sample No: 12-6275-001

Date Collected: 11/27/12
Time Collected: 8:00
Date Received: 11/27/12
Date Reported: 12/05/12

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total	**Method: 2540B**			
Analysis Date: 11/28/12				
Total Solids	94.25		%	
Volatile Organic Compounds	**Method: 5035A/8260B**			
Analysis Date: 11/30/12				
Acetone	< 100	100	ug/kg	
Benzene	< 5.0	5.0	ug/kg	
Bromodichloromethane	< 5.0	5.0	ug/kg	
Bromoform	< 5.0	5.0	ug/kg	
Bromomethane	< 10.0	10.0	ug/kg	
2-Butanone (MEK)	< 100	100	ug/kg	
Carbon disulfide	< 5.0	5.0	ug/kg	
Carbon tetrachloride	< 5.0	5.0	ug/kg	
Chlorobenzene	< 5.0	5.0	ug/kg	
Chlorodibromomethane	< 5.0	5.0	ug/kg	
Chloroethane	< 10.0	10.0	ug/kg	
Chloroform	< 5.0	5.0	ug/kg	
Chloromethane	< 10.0	10.0	ug/kg	
1,1-Dichloroethane	< 5.0	5.0	ug/kg	
1,2-Dichloroethane	< 5.0	5.0	ug/kg	
1,1-Dichloroethene	< 5.0	5.0	ug/kg	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
1,2-Dichloropropane	< 5.0	5.0	ug/kg	
cis-1,3-Dichloropropene	< 4.0	4.0	ug/kg	
trans-1,3-Dichloropropene	< 4.0	4.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
2-Hexanone	< 10.0	10.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/kg	
Methylene chloride	< 20.0	20.0	ug/kg	
Styrene	< 5.0	5.0	ug/kg	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/kg	
Tetrachloroethene	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
1,1,1-Trichloroethane	< 5.0	5.0	ug/kg	
1,1,2-Trichloroethane	< 5.0	5.0	ug/kg	
Trichloroethene	< 5.0	5.0	ug/kg	

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Analytical Report

Client: TESTING SERVICE CORP.
Project ID: 78417
Sample ID: B-3 + 5N S-3
Sample No: 12-6275-001

Date Collected: 11/27/12
Time Collected: 8:00
Date Received: 11/27/12
Date Reported: 12/05/12

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 11/30/12				
Vinyl acetate	< 10.0	10.0	ug/kg	
Vinyl chloride	< 10.0	10.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 11/29/12		Preparation Date: 11/28/12		
Acenaphthene	< 50	50	ug/kg	
Acenaphthylene	< 50	50	ug/kg	
Anthracene	< 50	50	ug/kg	
Benzo(a)anthracene	< 8.7	8.7	ug/kg	
Benzo(a)pyrene	< 15	15	ug/kg	
Benzo(b)fluoranthene	< 11	11	ug/kg	
Benzo(k)fluoranthene	< 11	11	ug/kg	
Benzo(ghi)perylene	< 50	50	ug/kg	
Chrysene	< 50	50	ug/kg	
Dibenzo(a,h)anthracene	< 20	20	ug/kg	
Fluoranthene	< 50	50	ug/kg	
Fluorene	< 50	50	ug/kg	
Indeno(1,2,3-cd)pyrene	< 29	29	ug/kg	
Naphthalene	< 25	25	ug/kg	
Phenanthrene	< 50	50	ug/kg	
Pyrene	< 50	50	ug/kg	
Total Metals **Method: 6010B**		**Preparation Method 3050B**		
Analysis Date: 12/04/12		Preparation Date: 11/28/12		
Arsenic	11.0	0.2	mg/kg	
Barium	12.9	0.1	mg/kg	
Cadmium	0.8	0.1	mg/kg	
Chromium	7.4	0.1	mg/kg	
Lead	5.3	0.2	mg/kg	
Selenium	< 0.2	0.2	mg/kg	
Silver	< 0.1	0.1	mg/kg	
Total Mercury **Method: 7470A**				
Analysis Date: 11/30/12				
Mercury	< 0.05	0.05	mg/kg	

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Analytical Report

Client: TESTING SERVICE CORP.
Project ID: 78417
Sample ID: B-3 + 5N S-3
Sample No: 12-6275-001

Date Collected: 11/27/12
Time Collected: 8:00
Date Received: 11/27/12
Date Reported: 12/05/12

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
pH @ 25°C, 1:2	**Method: 9045C**			
Analysis Date: 11/29/12 13:00				
pH @ 25°C, 1:2	8.70		Units	

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Analytical Report

Client: TESTING SERVICE CORP.
Project ID: 78417
Sample ID: B-1 + 10N S-1
Sample No: 12-6275-002

Date Collected: 11/27/12
Time Collected: 8:30
Date Received: 11/27/12
Date Reported: 12/05/12

Results are reported on an "as received" basis.

Analyte	Result	R.L.	Units	Flags
pH @ 25°C, 1:2 **Method: 9045C**				
Analysis Date: 11/29/12 13:00				
pH @ 25°C, 1:2	8.05		Units	

250

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Analytical Report

Client: TESTING SERVICE CORP.
Project ID: 78417
Sample ID: B-1 + 10N S-2
Sample No: 12-6275-003

Date Collected: 11/27/12
Time Collected: 8:40
Date Received: 11/27/12
Date Reported: 12/05/12

Results are reported on an "as received" basis.

Analyte	Result	R.L.	Units	Flags
pH @ 25°C, 1:2 **Method: 9045C**				
Analysis Date: 11/29/12 13:00				
pH @ 25°C, 1:2	8.45		Units	

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Analytical Report

Client: TESTING SERVICE CORP.
Project ID: 78417
Sample ID: B-1 + 10N S-3
Sample No: 12-6275-004

Date Collected: 11/27/12
Time Collected: 8:50
Date Received: 11/27/12
Date Reported: 12/05/12

Results are reported on an "as received" basis.

Analyte	Result	R.L.	Units	Flags
pH @ 25°C, 1:2 **Method: 9045C**				
Analysis Date: 11/29/12 13:00				
pH @ 25°C, 1:2	8.73		Units	

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Analytical Report

Client: TESTING SERVICE CORP.
Project ID: 78417
Sample ID: B-1 + 10N S-4
Sample No: 12-6275-005

Date Collected: 11/27/12
Time Collected: 9:00
Date Received: 11/27/12
Date Reported: 12/05/12

Results are reported on an "as received" basis.

Analyte	Result	R.L.	Units	Flags
pH @ 25°C, 1:2 **Method: 9045C**				
Analysis Date: 11/29/12 13:00				
pH @ 25°C, 1:2	8.51		Units	

CHAIN OF CUSTODY RECORD

Page 1 of 1 pgs

First Environmental Laboratories, Inc.

First Environmental Laboratories
1600 Shore Road, Suite D
Naperville, Illinois 60563
Phone: (630) 778-1200 • Fax: (630) 778-1233
E-mail: firstinfo@firstenv.com
IEPA Certification #100292

Company Name: Testing Service Corp
Street Address: 360 S. Main Place
City: Carol Stream State: IL Zip: 60188
Phone: 630 462 2600 Fax: e-mail: bwalker@tsccorp.com
Send Report To: B. Walker Via: Fax ☐ e-mail ☒
Sampled By: J. Woiky

Project I.D.: 78417
P.O. #: 78417

Matrix Codes: S = Soil W = Water O = Other

Analyses: VOC, PNAs, RCRA Metals, pH

Date/Time Taken	Sample Description	Matrix	VOC	PNAs	RCRA Metals	pH				Comments	Lab I.D.
11-27-12 8:00	B-3+5N S-3	S	X	X	X	X					12-6275-001
8:30	B-1+10N S-1					X					002
8:40	B-1+10N S-2					X					003
8:50	B-1+10N S-3					X					004
9:00	B-1+10N S-4					X					005

FOR LAB USE ONLY:

Cooler Temperature: 0.1-6ºC Yes ✓ No__ ____ºC
Received within 6 hrs. of collection:____
Ice Present: Yes ✓ No__

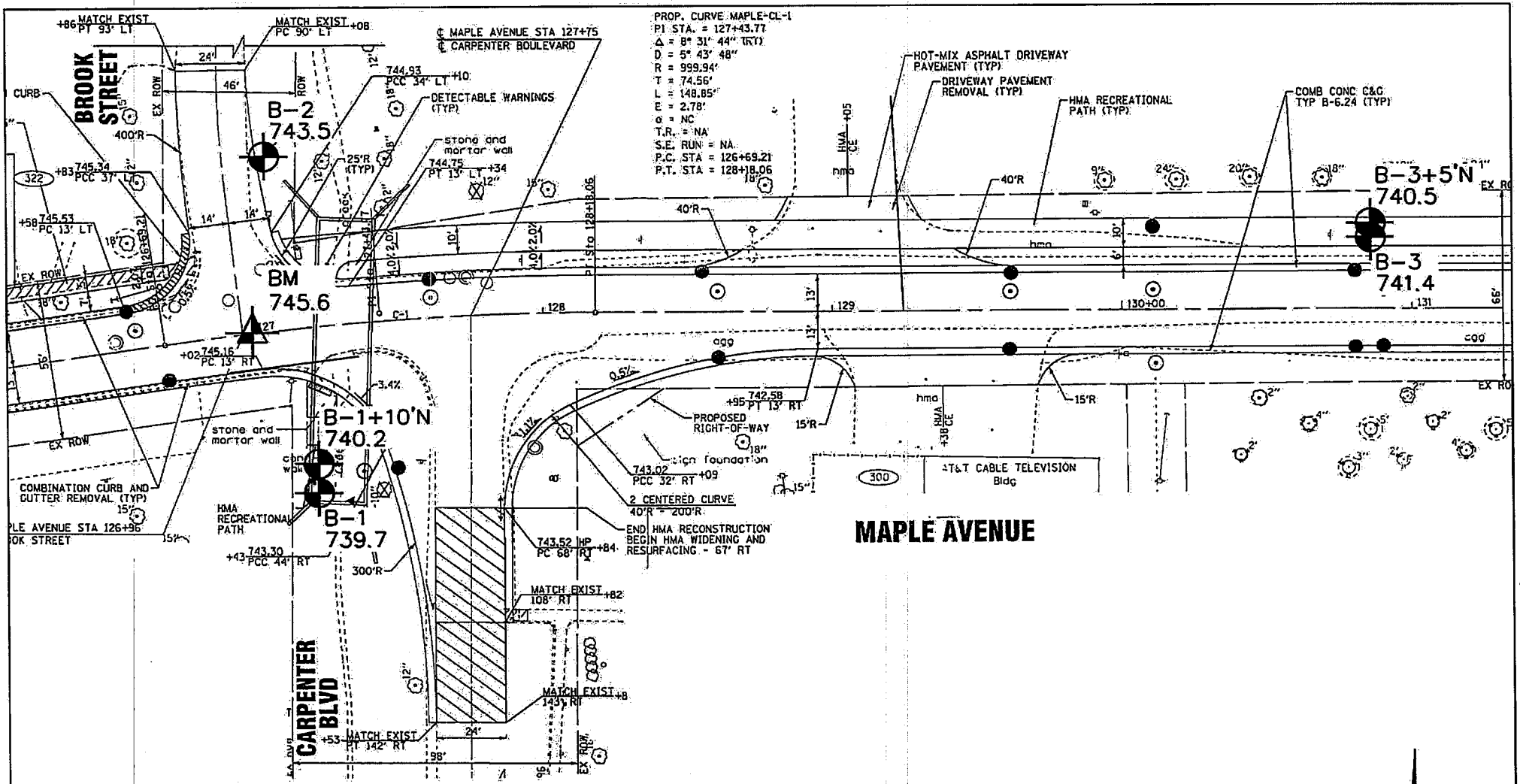
Sample Refrigerated: Yes__ No__
Refrigerator Temperature:____ºC
5035 Vials Frozen: Yes__ No__
Freezer Temperature:____ºC

Containers Received Preserved: ☒ Yes ☐ No
Need to meet: IL TACO ☐ IN. RISC ☐

Notes and Special Instructions:

Relinquished By: [signature] Date/Time: 11/27/12 Received By: [signature] Date/Time: 11/27/12 16:15
Relinquished By: Date/Time: Received By: Date/Time:

Rev. 9/08



BENCHMARK: MAPLE AVENUE STATION 127+00, APPROXIMATELY 4 FEET EAST OF BROOK STREET CENTERLINE, ELEVATION 745.58

LEGEND SOIL BORING LOCATION	BORING LOCATION PLAN IDOT PHASE II ENGINEERING MAPLE AVENUE IMPROVEMENTS CARPENTERSVILLE, ILLINOIS	TESTING SERVICE CORPORATION 457 EAST GUNDERSEN DRIVE CAROL STREAM, ILLINOIS 60188	DRAWN BY: TRP CHECKED BY: CRD JOB NO. : L-78,417 DATE: 11-27-12	PAGE NO. 1 OF 1

L-78,417A

Testing Service Corporation

STRUCTURE BORING LOG

Date Started 5/22/12

Date Completed 5/22/12

ROUTE _____ DESCRIPTION Maple Avenue Improvements

SECT. 95-00049-00-PV STRUCT. NO. _____ DRILLED BY TSC L-78,417

COUNTY Kane LOCATION Carpentersville S._____, TWP. ____, RNG. ____

Boring No. 1
Station _____
Offset ft
Surface Elev. 739.70 ft

Surface Water Elev. _____
Groundwater Elev.:
when drilling 734.2
at Completion 734.2
after 24 Hrs Caved @ 5'

DEPTH	BLOWS	Qu tsf	W %
0			
FILL - Dark brown CLAY (Topsoil), moist	9 12 10		3.4
738.40			
FILL - Brown SAND and GRAVEL, moist A-1			
736.70			
Firm grayish-brown SAND, little to some gravel, trace sand and silt, very moist to wet A-1-b	7 9 10		6.6
-5			
	4 5 6		11.7
	4 5 8		12.1
-10			
729.20			
Dense brown GRAVEL and SAND, trace clay and silt, wet A-1-a	6 12 20		9.1
726.70			
Very dense to dense gray GRAVEL, some sand, trace silt and clay, wet A-1-a	21 38 15		11.2
-15			
	32 12 14		9.7
721.70			
Firm gray SAND, trace gravel, wet A-1-b	7 7 12		15.8
-20			
	6 7 8		14.0
	6 7 10		11.9
-25			

DEPTH	BLOWS	Qu tsf	W %
Firm gray SAND, trace gravel, wet A-1-b	7 12 17		13.3
	7 8 11		12.1
-30			
	8 11 13		15.5
	8 12 17		15.7
704.70 -35			
End of Boring at 35.0'			
3.25" (83 mm) ID HSA			
SPT Hammer = CME Automatic			
-40			
Sample 4: 15% Gravel 79% Sand 6% Silt and Clay			
Sample 5: 59% Gravel 37% Sand 4% Silt and Clay			
-45			
Sample 6: 69% Gravel 26% Sand 5% Silt and Clay			
-50			

SPT. (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test

Stations, Depths, Offset, and Elevations are in Feet 26

DOT_BORING 78417.GPJ IDOT.GDT 6/1/12

Testing Service Corporation

STRUCTURE BORING LOG

Date Started 5/22/12

Date Completed 5/22/12

ROUTE _____ DESCRIPTION Maple Avenue Improvements

SECT. 95-00049-00-PV STRUCT. NO. _____ DRILLED BY TSC L-78,417

COUNTY Kane LOCATION Carpentersville S. _____, TWP. _____, RNG. _____

Boring No. 2
Station _____
Offset ft
Surface Elev. 743.50 ft

Surface Water Elev. _____
Groundwater Elev.:
when drilling Dry
at Completion Dry
after 24 Hrs. Dry

DEPTH	BLOWS	Qu tsf	W %
FILL - Black CLAY (Topsoil) 743.00			
FILL - Black and gray CLAY, very moist A-7-6	3 3 3	P 0.5	24.5
740.50			
Black CLAY LOAM, very moist A-6	1 4 4	P 0.25	28.8
-5			
738.00			
Firm brown SANDY LOAM, very moist A-2-4	6 6 8		7.8
735.50			
Firm brown SAND and GRAVEL, very moist A-1-a	5 8 8		6.1
733.50 -10			
End of Boring at 10.0'			
3.25" (83 mm) ID HSA			
SPT Hammer = CME Automatic			
-15			
-20			
-25			

SPT. (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test
Stations, Depths, Offset, and Elevations are in Feet

Testing Service Corporation

STRUCTURE BORING LOG

Date Started 5/22/12

Date Completed 5/22/12

ROUTE _____ DESCRIPTION Maple Avenue Improvements

SECT. 95-00049-00-PV STRUCT. NO. _____ DRILLED BY TSC L-78,417

COUNTY Kane LOCATION Carpentersville S. _____, TWP. _____, RNG. _____

Boring No. 3
Station _____
Offset ft
Surface Elev. 721.40 ft

Surface Water Elev. _____
Groundwater Elev.:
when drilling 712.9
at Completion 712.9
after 24 Hrs. Dry

		DEPTH	BLOWS	Qu tsf	W %
FILL - Crushed STONE A-1-a	720.90				
FILL - Brown SANDY LOAM and GRAVEL, moist A-2-4	719.90		3 3 3	P 2.5	5.0 30.2
Black CLAY (Topsoil), very moist A-7-6					
		-5	2 2 3	P 2.0	31.9
	715.90				
Firm gray SAND and GRAVEL, moist A-1-a			11 14 15		5.3
			11 14 15		7.3
	711.40	-10			
End of Boring at 10.0'					
3.25" (83 mm) ID HSA					
SPT Hammer = CME Automatic					
		-15			
		-20			
		-25			

SPT. (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test
Stations, Depths, Offset, and Elevations are in Feet

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ILDOT_BORING 78417.GPJ IDOT.GDT 6/1/12

VILLAGE OF CARPENTERSVILLE

MANHOLE INSPECTION REPORT

Date: _____ **Time:** _____ **Weather Conditions:** Dry Sunny Cloudy Wet

Location: _____ **Manhole Number:** _____ **Inspector:** _____

Surface Type: Concrete Asphalt Gravel Grass Landscaped Easement

Condition: Poor 1 2 3 4 5 Excellent

Manhole Cover Condition: Good Fair Bad **Pick hole:** Open (sm. med. Lg.) Concealed

Manhole Casting Condition: Good Fair Bad Bolted Cover Cracked Above/Below Grade

Chimney Type: Brick Block Pre-cast **Number/Height of adjusting rings:** _____

Condition: Poor 1 2 3 4 5 Excellent **Infiltration @:** Frame / Cone Cone / Barrel

Manhole Walls: Depth lid to invert _____ **Wall Material:** Brick Block Pre-cast

Condition: Poor 1 2 3 4 5 Excellent **Infiltration at joints** Yes No Light 1 2 3 4 5 Heavy

Pipe inlets above bench: Size _____ Quantity _____

Manhole Bottoms: Bench Condition: Poor 1 2 3 4 5 Excellent Submerged None

Invert Material: Clay Plastic Concrete Other Size _____ Condition: Good Fair Bad

Solids Build up: Yes No

Comments

_____

_____

_____

_____

_____

_____

Material Specifications

• Water main	Class 52 DI with cement coating C-104
• Fittings	ANSI-AWWA C153/A21.53 SSB-COMPACT
• Line Locating	Trace-Safe Water Blocking Tracer Wire System (www.trace-safe.com) in conjunction with Conductive Wedges
• Valves	C-515 resilient wedge Clow or Waterous through 24"
• Hydrant Aux. Valves	Type- Clow, flange by MJ or MJ X MJ depending on depth
• Fire Hydrants	Clow Medallion F2545 flanged shoe for bury 6' and less. Over 6' bury- MJ shoe, min.24" max. 36" stub with Mega-Lug
• Valve Box	EJIW-664-S or Tyler 664-S (domestic)
• Valve Box Stabilizer	As manufactured by Valve Box Stabilizer Inc. Joliet, IL (815-722-2517)
• Corporation Stop	Compression. A.Y. McDonald 4701BT or 4701BQ (ball type) Swivel nut 4750 ST required for 1 ½" and 2" services
• Curb Stop	Compression. A.Y. McDonald 6104BT (ball type) Minneapolis Pattern
• Service Couplings	Compression. A.Y. McDonald "T" or "Q" series 4758T or 4758Q
• Service Saddles	Romac 202N (direct tap required for services 1" and smaller on DI,) Note: Full stainless steel, tapped sleeve may be required depending on condition of main
• Curb Box	A.Y. McDonald 5614, Minneapolis pattern. 1 ¼" upper section for ¾" and 1" services (no rod)
• Tapping Sleeves	Clow F-5207, Cascade CXTEX, or Romac SST- III full Stainless or equal for DI. Full stainless clamps for AC
• Pipe Restraint	EEBA Mega-Lug (no exceptions) For all MJ fittings (pre-cast concrete block restraint is required in conjunction with Mega-Lugs)
• Transition Couplings	Connecting to AC or CI. Ford FC2W or Cascade CRCER with alloy bolts and fusion bonded epoxy coating
• Repair Clamps	Full circle single band stainless steel clamps- Cascade CR1, Romac SS1 or approved equal

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

SPECIAL PROVISION FOR COOPERATION WITH UTILITIES

Effective: January 1, 1999
Revised: January 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.

Replace Article 105.07 of the Standard Specifications with the following:

"**105.07 Cooperation with Utilities.** The adjustment of utilities consists of the relocation, removal, replacement, rearrangements, reconstruction, improvement, disconnection, connection, shifting, new installation or altering of an existing utility facility in any manner.

When the plans or special provisions include information pertaining to the location of underground utility facilities, such information represents only the opinion of the Department as to the location of such utilities and is only included for the convenience of the bidder. The Department assumes no responsibility in respect to the sufficiency or the accuracy of the information shown on the plans relative to the location of the underground utility facilities.

Utilities which are to be adjusted shall be adjusted by the utility owner or the owner's representative or by the Contractor as a contract item. Generally, arrangements for adjusting existing utilities will be made by the Department prior to project construction; however, utilities will not necessarily be adjusted in advance of project construction and, in some cases, utilities will not be removed from the proposed construction limits. When utility adjustments must be performed in conjunction with construction, the utility adjustment work will be shown on the plans and/or covered by Special Provisions.

When the Contractor discovers a utility has not been adjusted by the owner or the owner's representative as indicated in the contract documents, or the utility is not shown on the plans or described in the Special Provisions as to be adjusted in conjunction with construction, the Contractor shall not interfere with said utility, and shall take proper precautions to prevent damage or interruption of the utility and shall promptly notify the Engineer of the nature and location of said utility.

All necessary adjustments, as determined by the Engineer, of utilities not shown on the plans or not identified by markers, will be made at no cost to the Contractor except traffic structures, light poles, etc., that are normally located within the proposed construction limits as hereinafter defined will not be adjusted unless required by the proposed improvement.

(a) Limits of Proposed Construction for Utilities Paralleling the Roadway. For the purpose of this Article, limits of proposed construction for utilities extending in the same longitudinal direction as the roadway, shall be defined as follows:

(1) The horizontal limits shall be a vertical plane, outside of, parallel to, and 600 mm (2 ft) distant at right angles from the plan or revised slope limits.

In cases where the limits of excavation for structures are not shown on the plans, the horizontal limits shall be a vertical plane 1.2 m (4 ft) outside the edges of structure footings or the structure where no footings are required.

(2) The upper vertical limits shall be the regulations governing the roadbed clearance for the specific utility involved.

(3) The lower vertical limits shall be the top of the utility at the depth below the proposed grade as prescribed by the governing agency or the limits of excavation, whichever is less.

(b) Limits of Proposed Construction for Utilities Crossing the Roadway. For the purpose of this Article, limits of proposed construction for utilities crossing the roadway in a generally transverse direction shall be defined as follows:

(1) Utilities crossing excavations for structures that are normally made by trenching such as sewers, underdrains, etc. and all minor structures such as manholes, inlets, foundations for signs, foundations for traffic signals, etc., the limits shall be the space to be occupied by the proposed permanent construction unless otherwise required by the regulations governing the specific utility involved.

(2) For utilities crossing the proposed site of major structures such as bridges, sign trusses, etc., the limits shall be as defined above for utilities extending in the same general direction as the roadway.

The Contractor may make arrangements for adjustment of utilities outside of the limits of proposed construction provided the Contractor furnishes the Department with a signed agreement with the utility owner covering the adjustments to be made. The cost of any adjustments made outside the limits of proposed construction shall be the responsibility of the Contractor unless otherwise provided.

The Contractor shall request all utility owners to field locate their facilities according to Article 107.31. The Engineer may make the request for location from the utility after receipt of notice from the Contractor. On request, the Engineer will make an inspection to verify that the utility company has field located its facilities, but will not assume responsibility for the accuracy of such work. The Contractor shall be responsible for maintaining the excavations or markers provided by the utility owners. This field location procedure may be waived if the utility owner has stated in writing to the Department it is satisfied the construction plans are sufficiently accurate. If the utility owner does not submit such statement to the Department, and they do not field locate their facilities in both horizontal and vertical alignment, the Engineer will authorize the Contractor in writing to proceed to locate the facilities in the most economical and reasonable manner, subject to the approval of the Engineer, and be paid according to Article 109.04.

The Contractor shall coordinate with any planned utility adjustment or new installation and the Contractor shall take all precautions to prevent disturbance or damage to utility facilities. Any failure on the part of the utility owner, or their representative, to proceed with any planned utility adjustment or new installation shall be reported promptly by the Contractor to the Engineer orally and in writing.

The Contractor shall take all necessary precautions for the protection of the utility facilities. The Contractor shall be responsible for any damage or destruction of utility facilities resulting from neglect, misconduct, or omission in the Contractor's manner or method of execution or nonexecution of the work, or caused by defective work or the use of unsatisfactory materials. Whenever any damage or destruction of a utility facility occurs as a result of work performed by the Contractor, the utility company will be immediately notified. The utility company will make arrangements to restore such facility to a condition equal to that existing before any such damage or destruction was done.

It is understood and agreed that the Contractor has considered in the bid all of the permanent and temporary utilities in their present and/or adjusted positions.

No additional compensation will be allowed for any delays, inconvenience, or damage sustained by the Contractor due to any interference from the said utility facilities or the operation of relocating the said utility facilities.

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:

Village of Carpentersville.

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

State of Illinois
DEPARTMENT OF TRANSPORTATION
Bureau of Local Roads and Streets

SPECIAL PROVISION FOR CALCIUM CHLORIDE APPLIED

Effective: June 1, 1958
Revised: January 1, 2007

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

Description. This work consists of furnishing and applying to aggregate base or surface courses, a solution of calcium chloride. The same type of solution shall be used throughout the work.

Materials. Materials shall meet the requirements of the following Articles of Section 1000 - Materials:

Item	Article/Section
(a) Water	1002
(b) Calcium Chloride - $CaCl_2$ (Note 1)	1013.01

Note 1. The Engineer shall determine percent calcium chloride required. The Contractor shall provide the State with the appropriate mixing formula for Type S and water to achieve the required percentage. The Contractor shall supply the Type L at the percent calcium chloride specified.

Equipment. A tank truck or spreader unit assembly, equipped with spray bars and nozzles shall be used. A positive displacement pump driven from a power source or from the wheels of the spreader/unit assembly shall be used to develop sufficient pressure at the spray bar nozzles to insure uniform distribution of the solution at the specified application rate. Spray bars of various lengths shall be used so that the solution may be applied in widths varying from 1.2 to 7.2 meters (4 to 24 feet). The motor vehicle shall be capable of maintaining a constant speed during the time of application. The tank truck or spreader/unit assembly shall be equipped with a suitable device, visible to the driver, to accurately determine the rate at which the solution is applied. Suitable charts shall be furnished to enable correlation of the vehicle speed and rate of application.

When the tank truck is used to mix calcium chloride Type S with water, the pump and piping shall be so arranged that thorough mixing of the ingredients will be accomplished as rapidly as possible without excessive heating.

Certification. At the time of delivery, the supplier shall furnish the purchaser two copies of the delivery report that shall contain the following data:

(a) The liters (gallons) at 25 °C (77 °F) and weight of solution delivered.
(b) The specific gravity and temperature of the solution at the time of loading.
(c) The percentage of calcium chloride in the solution.
(d) The percentage of magnesium chloride and alkali chlorides contained in the solution

Sampling and Testing. The first truck load shipped of a contract will be sampled at its destination by the purchaser's personnel. Random check samples representing 10% of the contract quantity shall be taken of subsequent loads. The samples shall be packaged in an 1 quart plastic container and sent with the certification data sheet to the Bureau of Materials and Physical Research, 125 East Ash Street, Springfield, IL 62704, for testing.

CONSTRUCTION REQUIREMENTS

General. The rate of application per square meter (square yard) and the quantity shown in the contract is based on the amount of chloride to be applied. The actual application rate shall be the rate shown in the contract divided by the decimal equivalent of the percent chloride.

Application Rate. The rate of application shall be 0.68 kg per square meter (1.2 pounds per square yard)

Note 2. The normal application rate is 0.68 kg per square meter (1.2 pounds per square yard). The specified application rate shall be between 0.45 to 0.84 kg per square meter (0.8 to 1.5 pounds per square yard).

Application of Calcium Chloride Solution. The solution shall be applied to the base or surface course through the spray bars in not more than two applications. The entire surface shall be covered uniformly without excessive transverse or longitudinal overlap. The solution may be applied to irregular-shaped areas by means approved by the Engineer.

Method of Measurement. Calcium chloride applied will be measured for payment by mass (weight) in metric tons (tons).

The quantity of calcium chloride for which payment will be made will be the total mass (weight) multiplied by the decimal equivalent of the percent of anhydrous chloride.

Basis of Payment. This work will be paid for at the contract unit price bid per metric ton (ton) for CALCIUM CHLORIDE APPLIED.

ANCHOR BOLTS (BDE)

Effective: January 1, 2013

Revise the fourth sentence of the first paragraph of Article 1006.09 of the Standard Specifications to read:

"Stud bolts or fully threaded rods shall be according to either ASTM A 354 Grade BC, ASTM A 193 Grade B7, or ASTM F 1554 Grade 105."

Revise the second paragraph of Article 1006.09 of the Standard Specifications to read:

"Washers and nuts shall match with the hardness of the anchor bolt, stud, or rod. For ASTM F 1554 Grade 36 (Grade 250) or Grade 55 (Grade 380) anchor rods or bolts, washers shall be according to ASTM F 844 or ASTM F 436, and nuts shall be according to AASHTO M 291 Grade A. For ASTM F 1554 Grade 105 (Grade 725) bolts, ASTM A 354, or ASTM A 193 stud bolts, washers shall be according to AASHTO M 293 Type 1 or Type 3, and nuts shall be according to AASHTO M 291 Grade DH or DH3."

Revise the seventh paragraph of Article 1006.09 of the Standard Specifications to read:

"Anchor bolts, rods, studs, nuts, and washers requiring galvanizing shall be hot dipped, with zinc coatings conforming to the requirements of ASTM F 2329."

Revise the fourth paragraph of Article 1070.01 of the Standard Specifications to read:

"Fully threaded and galvanized anchor rods or stud bolts with washers and nuts shall be furnished with the foundations and shall be according to Article 1006.09. Anchors furnished according to ASTM F 1554 shall be Grade 105 (Grade 725)."

Revise the second paragraph of Article 1070.03 of the Standard Specifications to read:

"Top anchor rod nuts for all towers shall be the self-locking type with nylon or steel inserts."

80309

COATED GALVANIZED STEEL CONDUIT (BDE)

Effective: January 1, 2013

Revise Article 1088.01(a)(3) of the Standard Specifications to read:

"(3) Coated Galvanized Steel Conduit. The conduit prior to coating shall meet the requirements for rigid metal conduit and be manufactured according to NEMA Standard No. RN1.

The coating shall have the following characteristics.

Hardness	85+ Shore A Durometer
Dielectric Strength	400 V/mil @ 60 Hz
Aging	1,000 Hours Atlas Weatherometer
Brittleness Temperature	0 °F (-18 °C) when tested according to ASTM D 746
Elongation	200 percent

The exterior galvanized surfaces shall be coated with a primer before the coating to ensure a bond between the zinc substrate and the coating. The bond strength created shall be greater than the tensile strength of the plastic coating. The nominal thickness of the coating shall be 40 mils (1 mm). The coating shall pass the following bonding test.

Two parallel cuts 1/2 in. (13 mm) apart and 1 1/2 in. (38 mm) in length shall be made with a sharp knife along the longitudinal axis. A third cut shall be made perpendicular to and crossing the longitudinal cuts at one end. The knife shall then be worked under the coating for 1/2 in. (13 mm) to free the coating from the metal.

Using pliers, the freed tab shall be pulled with a force applied vertically and away from the conduit. The tab shall tear rather than cause any additional coating to separate from the substrate.

A two part urethane coating shall be applied to the interior of the conduit. The internal coating shall have a nominal thickness of 2 mils (50 µm). The interior coating shall be applied in a manner so there are no runs, drips, or pinholes at any point. The coating shall not peel, flake, or chip off after a cut is made in the conduit or a scratch is made in the coating. The urethane interior coating applied shall afford sufficient flexibility to permit field bending without cracking or flaking of the interior coating.

All conduit fittings and couplings shall be as specified and recommended by the conduit manufacturer. All conduit fitting covers shall be furnished with stainless steel screws which have been encapsulated with a polyester material on the head to ensure maximum corrosion protection."

80310

CONSTRUCTION AIR QUALITY – DIESEL RETROFIT (BDE)

Effective: June 1, 2010

The reduction of emissions of particulate matter (PM) for off-road equipment shall be accomplished by installing retrofit emission control devices. The term "equipment" refers to diesel fuel powered devices rated at 50 hp and above, to be used on the jobsite in excess of seven calendar days over the course of the construction period on the jobsite (including rental equipment).

Contractor and subcontractor diesel powered off-road equipment assigned to the contract shall be retrofitted using the phased in approach shown below. Equipment that is of a model year older than the year given for that equipment's respective horsepower range shall be retrofitted:

Effective Dates	Horsepower Range	Model Year
June 1, 2010 1/	600-749	2002
	750 and up	2006
June 1, 2011 2/	100-299	2003
	300-599	2001
	600-749	2002
	750 and up	2006
June 1, 2012 2/	50-99	2004
	100-299	2003
	300-599	2001
	600-749	2002
	750 and up	2006

1/ Effective dates apply to Contractor diesel powered off-road equipment assigned to the contract.

2/ Effective dates apply to Contractor and subcontractor diesel powered off-road equipment assigned to the contract.

The retrofit emission control devices shall achieve a minimum PM emission reduction of 50 percent and shall be:

a) Included on the U.S. Environmental Protection Agency (USEPA) *Verified Retrofit Technology List* (http://www.epa.gov/otaq/retrofit/verif-list.htm), or verified by the California Air Resources Board (CARB) (http://www.arb.ca.gov/diesel/verde/verdev.htm); or

b) Retrofitted with a non-verified diesel retrofit emission control device if verified retrofit emission control devices are not available for equipment proposed to be used on the project, and if the Contractor has obtained a performance certification from the retrofit

device manufacturer that the emission control device provides a minimum PM emission reduction of 50 percent.

Note: Large cranes (Crawler mounted cranes) which are responsible for critical lift operations are exempt from installing retrofit emission control devices if such devices adversely affect equipment operation.

Diesel powered off-road equipment with engine ratings of 50 hp and above, which are unable to be retrofitted with verified emission control devices or if performance certifications are not available which will achieve a minimum 50 percent PM reduction, may be granted a waiver by the Department if documentation is provided showing good faith efforts were made by the Contractor to retrofit the equipment.

Construction shall not proceed until the Contractor submits a certified list of the diesel powered off-road equipment that will be used, and as necessary, retrofitted with emission control devices. The list(s) shall include (1) the equipment number, type, make, Contractor/rental company name; and (2) the emission control devices make, model, USEPA or CARB verification number, or performance certification from the retrofit device manufacturer. Equipment reported as fitted with emissions control devices shall be made available to the Engineer for visual inspection of the device installation, prior to being used on the jobsite.

The Contractor shall submit an updated list of retrofitted off-road construction equipment as retrofitted equipment changes or comes on to the jobsite. The addition or deletion of any diesel powered equipment shall be included on the updated list.

If any diesel powered off-road equipment is found to be in non-compliance with any portion of this special provision, the Engineer will issue the Contractor a diesel retrofit deficiency deduction.

Any costs associated with retrofitting any diesel powered off-road equipment with emission control devices shall be considered as included in the contract unit prices bid for the various items of work involved and no additional compensation will be allowed. The Contractor's compliance with this notice and any associated regulations shall not be grounds for a claim.

Diesel Retrofit Deficiency Deduction

When the Engineer determines that a diesel retrofit deficiency exists, a daily monetary deduction will be imposed for each calendar day or fraction thereof the deficiency continues to exist. The calendar day(s) will begin when the time period for correction is exceeded and end with the Engineer's written acceptance of the correction. The daily monetary deduction will be $1,000.00 for each deficiency identified.

The deficiency will be based on lack of diesel retrofit emissions control.

If a Contractor accumulates three diesel retrofit deficiency deductions for the same piece of equipment in a contract period, the Contractor will be shutdown until the deficiency is corrected.

Such a shutdown will not be grounds for any extension of the contract time, waiver of penalties, or be grounds for any claim.

80261

DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION (BDE)

Effective: September 1, 2000
Revised: August 2, 2011

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

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

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

> The Contractor, subrecipient, or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The Contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of contracts funded in whole or in part with federal or state funds. Failure by the Contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate.

OVERALL GOAL SET FOR THE DEPARTMENT. As a requirement of compliance with 49 CFR Part 26, the Department has set an overall goal for DBE participation in its federally assisted contracts. That goal applies to all federal-aid funds the Department will expend in its federally assisted contracts for the subject reporting fiscal year. The Department is required to make a good faith effort to achieve the overall goal. The dollar amount paid to all approved DBE companies performing work called for in this contract is eligible to be credited toward fulfillment of the Department's overall goal.

CONTRACT GOAL TO BE ACHIEVED BY THE CONTRACTOR. This contract includes a specific DBE utilization goal established by the Department. The goal has been included because the Department has determined that the work of this contract has subcontracting opportunities that may be suitable for performance by DBE companies. The determination is

based on an assessment of the type of work, the location of the work, and the availability of DBE companies to do a part of the work. The assessment indicates that, in the absence of unlawful discrimination, and in an arena of fair and open competition, DBE companies can be expected to perform 22.00 % of the work. This percentage is set as the DBE participation goal for this contract. Consequently, in addition to the other award criteria established for this contract, the Department will only award this contract to a bidder who makes a good faith effort to meet this goal of DBE participation in the performance of the work. A bidder makes a good faith effort for award consideration if either of the following is done in accordance with the procedures set for in this Special Provision:

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

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

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

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

(a) The bidder shall submit a Disadvantaged Business Utilization Plan on Department forms SBE 2025 and 2026 with the bid.

(b) The Utilization Plan shall indicate that the bidder either has obtained sufficient DBE participation commitments to meet the contract goal or has not obtained enough DBE participation commitments in spite of a good faith effort to meet the goal. The Utilization Plan shall further provide the name, telephone number, and telefax number of a responsible official of the bidder designated for purposes of notification of plan approval or disapproval under the procedures of this Special Provision.

(c) The Utilization Plan shall include a DBE Participation Commitment Statement, Department form SBE 2025, for each DBE proposed for the performance of work to achieve the contract goal. For bidding purposes, submission of the completed SBE 2025 forms, signed by the DBEs and faxed to the bidder will be acceptable as long as the original is available and provided upon request. All elements of information indicated on the said form shall be provided, including but not limited to the following:

(1) The names and addresses of DBE firms that will participate in the contract;

(2) A description, including pay item numbers, of the work each DBE will perform;

(3) The dollar amount of the participation of each DBE firm participating. The dollar amount of participation for identified work shall specifically state the quantity, unit price, and total subcontract price for the work to be completed by the DBE. If partial pay items are to be performed by the DBE, indicate the portion of each item, a unit price where appropriate and the subcontract price amount;

(4) DBE Participation Commitment Statements, form SBE 2025, signed by the bidder and each participating DBE firm documenting the commitment to use the DBE subcontractors whose participation is submitted to meet the contract goal;

(5) if the bidder is a joint venture comprised of DBE companies and non-DBE companies, the plan must also include a clear identification of the portion of the work to be performed by the DBE partner(s); and,

(6) If the contract goal if not met, evidence of good faith efforts.

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

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

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

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

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

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

b. A bidder using good business judgment would consider a number of factors in negotiating with subcontractors, including DBE subcontractors, and would take a firm's price and capabilities as well as contract goals into consideration. However, the fact that there may be some additional costs involved in finding and using DBE companies is not in itself sufficient reason for a bidder's failure to meet the contract DBE goal, as long as such costs are reasonable. Also the ability or desire of a bidder to perform the work of a contract with its own organization does not relieve the bidder of the responsibility to make good faith efforts. Bidders are not, however, required to accept higher quotes from DBE companies if the price difference is excessive or unreasonable.

(5) Not rejecting DBE companies as being unqualified without sound reasons based on a thorough investigation of their capabilities. The bidder's standing within its industry, membership in specific groups, organizations, or associations and political or social affiliations (for example union vs. non-union employee status) are not legitimate causes for the rejection or non-solicitation of bids in the bidder's efforts to meet the project goal.

(6) Making efforts to assist interested DBE companies in obtaining bonding, lines of credit, or insurance as required by the recipient or Contractor.

(7) Making efforts to assist interested DBE companies in obtaining necessary equipment, supplies, materials, or related assistance or services.

(8) Effectively using the services of available minority/women community organizations; minority/women contractors' groups; local, state, and federal minority/women business assistance offices; and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and placement of DBE companies.

(b) If the Department determines that the apparent successful bidder has made a good faith effort to secure the work commitment of DBE companies to meet the contract goal, the Department will award the contract provided that it is otherwise eligible for award. If the Department determines that the bidder has failed to meet the requirements of this Special Provision or that a good faith effort has not been made, the Department will notify the responsible company official designated in the Utilization Plan that the bid is not responsive. The notification shall include a statement of reasons for the determination.

(c) The bidder may request administrative reconsideration of a determination adverse to the bidder within the five working days after the receipt of the notification date of the determination by delivering the request to the Department of Transportation, Bureau of Small Business Enterprises, Contract Compliance Section, 2300 South Dirksen Parkway, Room 319, Springfield, Illinois 62764 (Telefax: (217)785-1524). Deposit of the request in the United States mail on or before the fifth business day shall not be deemed delivery. The determination shall become final if a request is not made and delivered. A request may provide additional written documentation and/or argument concerning the issues raised in the determination statement of reasons, provided the documentation and arguments address efforts made prior to submitting the bid. The request will be forwarded to the Department's Reconsideration Officer. The Reconsideration Officer will extend an opportunity to the bidder to meet in person in order to consider all issues of documentation and whether the bidder made a good faith effort to meet the goal. After the review by the Reconsideration Officer, the bidder will be sent a written decision within ten working days after receipt of the request for consideration, explaining the basis for finding that the bidder did or did not meet the goal or make adequate good faith efforts to do so. A final decision by the Reconsideration Officer that a good faith effort was made shall approve the Utilization Plan submitted by the bidder and shall clear the contract for award. A final decision that a good faith effort was not made shall render the bid not responsive.

CALCULATING DBE PARTICIPATION. The Utilization Plan values represent work anticipated to be performed and paid for upon satisfactory completion. The Department is only able to count toward the achievement of the overall goal and the contract goal the value of payments made for the work actually performed by DBE companies. In addition, a DBE must perform a commercially useful function on the contract to be counted. A commercially useful function is

generally performed when the DBE is responsible for the work and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. The Department and Contractor are governed by the provisions of 49 CFR Part 26.55(c) on questions of commercially useful functions as it affects the work. Specific counting guidelines are provided in 49 CFR Part 26.55, the provisions of which govern over the summary contained herein.

(a) DBE as the Contractor: 100 percent goal credit for that portion of the work performed by the DBE's own forces, including the cost of materials and supplies. Work that a DBE subcontracts to a non-DBE does not count toward the DBE goals.

(b) DBE as a joint venture Contractor: 100 percent goal credit for that portion of the total dollar value of the contract equal to the distinct, clearly defined portion of the work performed by the DBE's own forces.

(c) DBE as a subcontractor: 100 percent goal credit for the work of the subcontract performed by the DBE's own forces, including the cost of materials and supplies, excluding the purchase of materials and supplies or the lease of equipment by the DBE subcontractor from the prime Contractor or its affiliates. Work that a DBE subcontractor in turn subcontracts to a non-DBE does not count toward the DBE goal.

(d) DBE as a trucker: 100 percent goal credit for trucking participation provided the DBE is responsible for the management and supervision of the entire trucking operation for which it is responsible. At least one truck owned, operated, licensed, and insured by the DBE must be used on the contract. Credit will be given for the following:

(1) The DBE may lease trucks from another DBE firm, including an owner-operator who is certified as a DBE. The DBE who leases trucks from another DBE receives credit for the total value of the transportation services the lessee DBE provides on the contract.

(2) The DBE may also lease trucks from a non-DBE firm, including from an owner-operator. The DBE who leases trucks from a non-DBE is entitled to credit only for the fee or commission is receives as a result of the lease arrangement.

(e) DBE as a material supplier:

(1) 60 percent goal credit for the cost of the materials or supplies purchased from a DBE regular dealer.

(2) 100 percent goal credit for the cost of materials of supplies obtained from a DBE manufacturer.

(3) 100 percent credit for the value of reasonable fees and commissions for the procurement of materials and supplies if not a regular dealer or manufacturer.

CONTRACT COMPLIANCE. Compliance with this Special Provision is an essential part of the contract. The Department is prohibited by federal regulations from crediting the participation of a DBE included in the Utilization Plan toward either the contract goal or the Department's overall goal until the amount to be applied toward the goals has been paid to the DBE. The following administrative procedures and remedies govern the compliance by the Contractor with the contractual obligations established by the Utilization Plan. After approval of the Utilization Plan and award of the contract, the Utilization Plan and individual DBE Participation Statements become part of the contract. If the Contractor did not succeed in obtaining enough DBE participation to achieve the advertised contract goal, and the Utilization Plan was approved and contract awarded based upon a determination of good faith, the total dollar value of DBE work calculated in the approved Utilization Plan as a percentage of the awarded contract value shall become the amended contract goal. All work indicated for performance by an approved DBE shall be performed, managed, and supervised by the DBE executing the Participation Statement.

(a) NO AMENDMENT. No amendment to the Utilization Plan may be made without prior written approval from the Department's Bureau of Small Business Enterprises. All requests for amendment to the Utilization Plan shall be submitted to the Department of Transportation, Bureau of Small Business Enterprises, Contract Compliance Section, 2300 South Dirksen Parkway, Room 319, Springfield, Illinois 62764. Telephone number (217)785-4611. Telefax number (217)785-1524.

(b) TERMINATION OR REPLACEMENT. The Contractor shall not terminate or replace a DBE listed on the approved Utilization Plan, or perform with other forces work designated for a listed DBE except as provided in the Special Provision.

(c) CHANGES TO WORK. Any deviation from the DBE condition-of-award or contract plans, specifications, or special provisions must be approved, in writing, by the Department as provided elsewhere in the Contract. The Contractor shall notify affected DBEs in writing of any changes in the scope of work which result in a reduction in the dollar amount condition-of-award to the contract. Where the revision includes work committed to a new DBE subcontractor, not previously involved in the project, then a Request for Approval of Subcontractor, Department form BC 260A, must be signed and submitted. If the commitment of work is in the form of additional tasks assigned to an existing subcontract, than a new Request for Approval of Subcontractor shall not be required. However, the Contractor must document efforts to assure that the existing DBE subcontractor is capable of performing the additional work and has agreed in writing to the change.

(d) ALTERNATIVE WORK METHODS. In addition to the above requirements for reductions in the condition of award, additional requirements apply to the two cases of Contractor-initiated work substitution proposals. Where the contract allows alternate work methods which serve to delete or create underruns in condition of award DBE work, and the Contractor selects that alternate method or, where the Contractor proposes a substitute work method or material that serves to diminish or delete work committed to a DBE and replace it with other work, then the Contractor must demonstrate one of the following:

(1) That the replacement work will be performed by the same DBE (as long as the DBE is certified in the respective item of work) in a modification of the condition of award; or

(2) That the DBE is aware that its work will be deleted or will experience underruns and has agreed in writing to the change. If this occurs, the Contractor shall substitute other work of equivalent value to a certified DBE or provide documentation of good faith efforts to do so; or

(3) That the DBE is not capable of performing the replacement work or has declined to perform the work at a reasonable competitive price. If this occurs, the Contractor shall substitute other work of equivalent value to a certified DBE or provide documentation of good faith efforts to do so.

(e) TERMINATION AND REPLACEMENT PROCEDURES. The Contractor shall not terminate or replace a DBE subcontractor listed in the approved Utilization Plan without prior written consent. This includes, but is not limited to, instances in which the Contractor seeks to perform work originally designated for a DBE subcontractor with its own forces or those of an affiliate, a non-DBE firm, or with another DBE firm. Written consent will be granted only if the Bureau of Small Business Enterprises agrees, for reasons stated in its concurrence document, that the Contractor has good cause to terminate or replace the DBE firm. Before transmitting to the Bureau of Small Business Enterprises any request to terminate and/or substitute a DBE subcontractor, the Contractor shall give notice in writing to the DBE subcontractor, with a copy to the Bureau, of its intent to request to terminate and/or substitute, and the reason for the request. The Contractor shall give the DBE five days to respond to the Contractor's notice. The DBE so notified shall advise the Bureau and the Contractor of the reasons, if any, why it objects to the proposed termination of its subcontract and why the Bureau should not approve the Contractor's action. If required in a particular case as a matter of public necessity, the Bureau may provide a response period shorter than five days.

For purposes of this paragraph, good cause includes the following circumstances:

(1) The listed DBE subcontractor fails or refuses to execute a written contract;

(2) The listed DBE subcontractor fails or refuses to perform the work of its subcontract in a way consistent with normal industry standards. Provided, however, that good cause does not exist if the failure or refusal of the DBE subcontractor to perform its work on the subcontract results from the bad faith or discriminatory action of the prime contractor;

(3) The listed DBE subcontractor fails or refuses to meet the prime Contractor's reasonable, nondiscriminatory bond requirements;

(4) The listed DBE subcontractor becomes bankrupt, insolvent, or exhibits credit unworthiness;

(5) The listed DBE subcontractor is ineligible to work on public works projects because of suspension and debarment proceedings pursuant 2 CFR Parts 180, 215 and 1,200 or applicable state law.

(6) You have determined that the listed DBE subcontractor is not a responsible contractor;

(7) The listed DBE subcontractor voluntarily withdraws from the projects and provides to you written notice of its withdrawal;

(8) The listed DBE is ineligible to receive DBE credit for the type of work required;

(9) A DBE owner dies or becomes disabled with the result that the listed DBE contractor is unable to complete its work on the contract;

(10) Other documented good cause that compels the termination of the DBE subcontractor. Provided, that good cause does not exist if the prime Contractor seeks to terminate a DBE it relied upon to obtain the contract so that the prime Contractor can self-perform the work for which the DBE contractor was engaged or so that the prime Contractor can substitute another DBE or non-DBE contractor after contract award.

When a DBE is terminated, or fails to complete its work on the Contract for any reason the Contractor shall make a good faith effort to find another DBE to substitute for the original DBE to perform at least the same amount of work under the contract as the terminated DBE to the extent needed to meet the established Contract goal.

(f) PAYMENT RECORDS. The Contractor shall maintain a record of payments for work performed to the DBE participants. The records shall be made available to the Department for inspection upon request. After the performance of the final item of work or delivery of material by a DBE and final payment therefore to the DBE by the Contractor, but not later than thirty calendar days after payment has been made by the Department to the Contractor for such work or material, the Contractor shall submit a DBE Payment Agreement on Department form SBE 2115 to the Regional Engineer. If full and final payment has not been made to the DBE, the DBE Payment Agreement shall indicate whether a disagreement as to the payment required exists between the Contractor and the DBE or if the Contractor believes that the work has not been satisfactorily completed. If the Contractor does not have the full amount of work indicated in the Utilization Plan performed by the BDE companies indicated in the Utilization Plan and after good faith efforts are reviewed, the Department may deduct from contract payments to the Contractor the amount of the goal not achieved as liquidated and ascertained damages. The Contractor may request an administrative

reconsideration of any amount deducted as damages pursuant to subsection (h) of this part.

(g) ENFORCEMENT. The Department reserves the right to withhold payment to the Contractor to enforce the provisions of this Special Provision. Final payment shall not be made on the contract until such time as the Contractor submits sufficient documentation demonstrating achievement of the goal in accordance with this Special Provision or after liquidated damages have been determined and collected.

(h) RECONSIDERATION. Notwithstanding any other provision of the contract, including but not limited to Article 109.09 of the Standard Specifications, the Contractor my request administrative reconsideration of a decision to deduct the amount of the goal not achieved as liquidated damages. A request to reconsider shall be delivered to the Contract Compliance Section and shall be handled and considered in the same manner as set forth in paragraph (c) of "Good Faith Effort Procedures" of this Special Provision, except a final decision that a good faith effort was not made during contract performance to achieve the goal agreed to in the Utilization Plan shall be the final administrative decision of the Department.

80029

DRAIN PIPE, TILE, DRAINAGE MAT, AND WALL DRAIN (BDE)

Effective: January 1, 2013

Add the following to Article 101.01 of the Standard Specifications.

"NTPEP National Transportation Product Evaluation Program"

Revise Article 1040.03(f) of the Standard Specifications to read:

"(f) Profile Wall Pipe-304. The manufacturer shall be listed as compliant through the NTPEP program and the pipe shall be according to AASHTO M 304."

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

"The manufacturer shall be listed as compliant through the NTPEP program and the pipe shall be according to AASHTO M 252 (nominal size – 3 to 10 in. (75 to 250 mm))."

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

"(b) Corrugated PE Pipe with a Smooth Interior. The manufacturer shall be listed as compliant through the NTPEP program and the pipe shall be according to AASHTO M 294 (nominal size – 12 to 48 in. (300 to 1200 mm)). The pipe shall be Type S or D."

80312

GRANULAR MATERIALS (BDE)

Effective: November 1, 2012

Revise the title of Article 1003.04 of the Standard Specifications to read:

"**1003.04 Fine Aggregate for Bedding, Trench Backfill, Embankment, Porous Granular Backfill, Sand Backfill for Underdrains, and French Drains.**"

Revise Article 1003.04(c) of the Standard Specifications to read:

"(c) Gradation. The fine aggregate gradations for granular embankment, granular backfill, bedding, and trench backfill for pipe culverts and storm sewers shall be FA 1, FA 2, or FA 6 through FA 21.

The fine aggregate gradation for porous granular embankment, porous granular backfill, french drains, and sand backfill for underdrains shall be FA 1, FA 2, or FA 20, except the percent passing the No. 200 (75 µm) sieve shall be 2±2."

Revise Article 1004.05(c) of the Standard Specifications to read:

"(c) Gradation. The coarse aggregate gradations shall be as follows.

Application	Gradation
Blotter	CA 15
Granular Embankment, Granular Backfill, Bedding, and Trench Backfill for Pipe Culverts and Storm Sewers	CA 6, CA 9, CA 10, CA 12, CA17, CA18, and CA 19
Porous Granular Embankment, Porous Granular Backfill, and French Drains	CA 7, CA 8, CA 11, CA 15, CA 16 and CA 18"

80303

HOT-MIX ASPHALT - DENSITY TESTING OF LONGITUDINAL JOINTS (BDE)

Effective: January 1, 2010
Revised: April 1, 2012

Description. This work shall consist of testing the density of longitudinal joints as part of the quality control/quality assurance (QC/QA) of hot-mix asphalt (HMA). Work shall be according to Section 1030 of the Standard Specifications except as follows.

Quality Control/Quality Assurance (QC/QA). Delete the second and third sentence of the third paragraph of Article 1030.05(d)(3) of the Standard Specifications.

Add the following paragraphs to the end of Article 1030.05(d)(3) of the Standard Specifications:

"Longitudinal joint density testing shall be performed at each random density test location. Longitudinal joint testing shall be located at a distance equal to the lift thickness or a minimum of 4 in. (100 mm), from each pavement edge. (i.e. for a 5 in. (125 mm) lift the near edge of the density gauge or core barrel shall be within 5 in. (125 mm) from the edge of pavement.) Longitudinal joint density testing shall be performed using either a correlated nuclear gauge or cores.

a. Confined Edge. Each confined edge density shall be represented by a one-minute nuclear density reading or a core density and shall be included in the average of density readings or core densities taken across the mat which represents the Individual Test.

b. Unconfined Edge. Each unconfined edge joint density shall be represented by an average of three one-minute density readings or a single core density at the given density test location and shall meet the density requirements specified herein. The three one-minute readings shall be spaced ten feet apart longitudinally along the unconfined pavement edge and centered at the random density test location."

Revise the Density Control Limits table in Article 1030.05(d)(4) of the Standard Specifications to read:

"Mixture Composition	Parameter	Individual Test (includes confined edges)	Unconfined Edge Joint Density Minimum
IL-4.75	Ndesign = 50	93.0 – 97.4%	91.0%
IL-9.5, IL-12.5	Ndesign ≥ 90	92.0 – 96.0%	90.0%
IL-9.5,IL-9.5L, IL-12.5	Ndesign < 90	92.5 – 97.4%	90.0%
IL-19.0, IL-25.0	Ndesign ≥ 90	93.0 – 96.0%	90.0%
IL-19.0, IL-19.0L, IL-25.0	Ndesign < 90	93.0 – 97.4%	90.0%

SMA	Ndesign = 50 & 80	93.5 – 97.4%	91.0%
All Other	Ndesign = 30	93.0 - 97.4%	90.0%"

80246

LIQUIDATED DAMAGES (BDE)

Effective: April 1, 2013

Revise the table in Article 108.09 of the Standard Specifications to read:

"Schedule of Deductions for Each Day of Overrun in Contract Time			
Original Contract Amount		Daily Charges	
From More Than	To and Including	Calendar Day	Work Day
$ 0	$ 100,000	$ 475	$ 675
100,000	500,000	750	1,050
500,000	1,000,000	1,025	1,425
1,000,000	3,000,000	1,275	1,725
3,000,000	6,000,000	1,425	2,000
6,000,000	12,000,000	2,300	3,450
12,000,000	And over	6,775	9,525"

80320

PAVEMENT MARKING REMOVAL (BDE)

Effective: April 1, 2009

Add the following to the end of the first paragraph of Article 783.03(a) of the Standard Specifications:

"The use of grinders will not be allowed on new surface courses."

80231

PAVEMENT PATCHING (BDE)

Effective: January 1, 2010

Revise the first sentence of the second paragraph of Article 701.17(e)(1) of the Standard Specifications to read:

"In addition to the traffic control and protection shown elsewhere in the contract for pavement, two devices shall be placed immediately in front of each open patch, open hole, and broken pavement where temporary concrete barriers are not used to separate traffic from the work area."

80254

PAVEMENT REMOVAL (BDE)

Effective: April 1, 2013

Revise Article 440.07(c) of the Standard Specifications to read:

"(c) Adjustment of Quantities. The quantity of pavement removal will be adjusted if the thickness of the existing pavement varies more than 15 percent from that shown on the plans. The quantity will be either increased or decreased according to the following table.

% change of thickness	% change of quantity
0 to less than 15	0
15 to less than 20	10
20 to less than 30	15
30 to less than 50	20

If the thickness of the existing pavement varies by 50 percent or more from that shown on the plans, the character of the work will be considered significantly changed and an adjustment to the contract will be made according to Article 104.02.

When an adjustment is made for variations in pavement thickness a resulting adjustment will also be made in the earthwork quantities when applicable.

No adjustment will be made for variations in the amount of reinforcement."

80321

PAYMENTS TO SUBCONTRACTORS (BDE)

Effective: June 1, 2000
Revised: January 1, 2006

Federal regulations found at 49 CFR §26.29 mandate the Department to establish a contract clause to require Contractors to pay subcontractors for satisfactory performance of their subcontracts and to set the time for such payments.

State law also addresses the timing of payments to be made to subcontractors and material suppliers. Section 7 of the Prompt Payment Act, 30 ILCS 540/7, requires that when a Contractor receives any payment from the Department, the Contractor shall make corresponding, proportional payments to each subcontractor and material supplier performing work or supplying material within 15 calendar days after receipt of the Department payment. Section 7 of the Act further provides that interest in the amount of two percent per month, in addition to the payment due, shall be paid to any subcontractor or material supplier by the Contractor if the payment required by the Act is withheld or delayed without reasonable cause. The Act also provides that the time for payment required and the calculation of any interest due applies to transactions between subcontractors and lower-tier subcontractors and material suppliers throughout the contracting chain.

This Special Provision establishes the required federal contract clause, and adopts the 15 calendar day requirement of the State Prompt Payment Act for purposes of compliance with the federal regulation regarding payments to subcontractors. This contract is subject to the following payment obligations.

When progress payments are made to the Contractor according to Article 109.07 of the Standard Specifications, the Contractor shall make a corresponding payment to each subcontractor and material supplier in proportion to the work satisfactorily completed by each subcontractor and for the material supplied to perform any work of the contract. The proportionate amount of partial payment due to each subcontractor and material supplier throughout the contracting chain shall be determined by the quantities measured or otherwise determined as eligible for payment by the Department and included in the progress payment to the Contractor. Subcontractors and material suppliers shall be paid by the Contractor within 15 calendar days after the receipt of payment from the Department. The Contractor shall not hold retainage from the subcontractors. These obligations shall also apply to any payments made by subcontractors and material suppliers to their subcontractors and material suppliers; and to all payments made to lower tier subcontractors and material suppliers throughout the contracting chain. Any payment or portion of a payment subject to this provision may only be withheld from the subcontractor or material supplier to whom it is due for reasonable cause.

This Special Provision does not create any rights in favor of any subcontractor or material supplier against the State or authorize any cause of action against the State on account of any payment, nonpayment, delayed payment, or interest claimed by application of the State Prompt Payment Act. The Department will not approve any delay or postponement of the 15 day requirement except for reasonable cause shown after notice and hearing pursuant to Section

7(b) of the State Prompt Payment Act. State law creates other and additional remedies available to any subcontractor or material supplier, regardless of tier, who has not been paid for work properly performed or material furnished. These remedies are a lien against public funds set forth in Section 23(c) of the Mechanics Lien Act, 770 ILCS 60/23(c), and a recovery on the Contractor's payment bond according to the Public Construction Bond Act, 30 ILCS 550.

80022

PLACING AND CONSOLIDATING CONCRETE (BDE)

Effective: January 1, 2013

Revise the first paragraph of Article 503.06 of the Standard Specifications to read:

"**503.06 Forms.** Forms shall be set and maintained to the lines and grades shown on the plans, and shall be tight to prevent concrete leakage."

Revise Article 503.07 of the Standard Specifications to read:

"**503.07 Placing and Consolidating.** No concrete shall be placed on ice, snow, or frozen foundation material.

The method and manner of placing concrete shall be such as to avoid segregation or separation of the aggregates or the displacement of the reinforcement. The external surface of all concrete shall be thoroughly worked during the operations of placing in such a manner as to work the mortar against the forms to produce a smooth finish free of honeycomb and with a minimum of water and air pockets.

Open troughs and chutes shall extend as nearly as practicable to the point of deposit. Dropping the concrete a distance of more than 5 ft (1.5 m) or depositing a large quantity at any point and running or working it along the forms will not be permitted. The concrete for walls with an average thickness of 12 in. (300 mm) or less shall be placed with tubes so that the drop is not greater than 5 ft (1.5 m).

For self-consolidating concrete, the maximum distance of horizontal flow from the point of deposit shall be 15 ft (4.6 m). The distance may be increased if the dynamic segregation index (DSI) at the maximum flow distance is 10.0 percent or less according to Illinois Test Procedure SCC-8 (Option C). The maximum distance using the DSI shall be 25 ft (7.6 m). In addition, this specified horizontal flow distance shall apply to precast products. In the case of precast prestressed concrete products, refer to the Department's "Manual of Fabrication for Precast Prestressed Concrete Products" for the specified horizontal flow distance requirements.

When the form height for placing the self-consolidating concrete is greater than 10 ft (3.0 m), direct monitoring of form pressure shall be performed by the Contractor according to Illinois Test Procedure SCC-10. The monitoring requirement is a minimum, and the Contractor shall remain responsible for adequate design of the falsework and forms. The Contractor shall record the formwork pressure during concrete placement. This information shall be used by the Contractor to prevent the placement rate from exceeding the maximum formwork pressure allowed, to monitor the thixotropic change in the concrete during the pour, and to make appropriate adjustments to the mix design. This information shall be provided to the Engineer during the pour.

When concrete is pumped, the equipment shall be suitable in kind and adequate in capacity for the work and arranged so that vibrations will not damage freshly placed concrete. Aluminum

pipe or conduit will not be permitted in pumping or placing concrete. Mixed concrete shall be supplied to maintain continuous operation of the pumping equipment.

When air entrained concrete is pumped, an accessory or accessories shall be incorporated in the discharge components to minimize air loss. The maximum allowable air loss caused by the pumping operation shall be 3.0 percent with the minimum air content at the point of discharge meeting the requirements of Article 1020.04.

Placing of concrete shall be regulated so that the pressures caused by the wet concrete will not exceed those used in the design of the forms. Special care shall be taken to fill each part of the forms by depositing the concrete as near its final position as possible, to work the coarser aggregates back from the face, and to force the concrete under and around the reinforcement bars without displacing them. Leakage through forms onto beams or girders shall not be allowed to harden and shall be removed while in a plastic state.

The concrete shall be consolidated by internal vibration unless self-consolidating concrete is used. Self-consolidating concrete may be used for inaccessible locations where consolidation by internal vibration is not practicable. The self consolidating concrete shall be rodded with a piece of lumber, conduit, or vibrator if the material has lost its fluidity prior to placement of additional concrete. The vibrator may only be permitted if it can be used in a manner that does not cause segregation as determined by the Engineer. Any other method for restoring the fluidity of the concrete shall be approved by the Engineer.

The Contractor shall provide and use a sufficient number of vibrators to ensure that consolidation can be started immediately after the concrete has been deposited in the forms.

The vibrators shall be inserted into the concrete immediately after it is deposited and shall be moved throughout the mass so as to thoroughly work the concrete around the reinforcement, embedded fixtures, and into the corners and angles of the forms. Vibrators shall not be attached to the forms, reinforcement bars, or the surface of the concrete.

Application of vibrators shall be at points uniformly spaced and not farther apart than twice the radius over which the vibration is visibly effective. The duration of the vibration at the points of insertion shall be sufficient to thoroughly consolidate the concrete into place but shall not be continued so as to cause segregation. When consolidating concrete in bridge decks, the vibrator shall be vertically inserted into the concrete for 3 - 5 seconds or for a period of time determined by the Engineer. Vibration shall be supplemented by spading when required by the Engineer. In addition to the internal vibration required herein, formed surfaces which will be exposed to view after completion of the work shall be spaded with a spading tool approved by the Engineer.

Concrete shall be placed in continuous horizontal layers. When it is necessary by reason of an emergency to place less than a complete horizontal layer in one operation, such layer shall terminate in a vertical bulkhead. Separate batches shall follow each other closely and in no case shall the interval of time between the placing of successive batches be greater than 20 minutes.

If mix foaming or detrimental material is observed during placement or at the completion of a pour, the material shall be removed while the concrete is still plastic

After the concrete has taken its initial set, care shall be exercised to avoid jarring the forms or placing any strain on the ends of projecting reinforcement."

Revise Article 516.12(a) of the Standard Specifications to read:

"(a) Free Fall Placement. The free fall placement shall only be permitted in shafts that can be dewatered to ensure less than 3 in. (75 mm) of standing water exist at the time of placement without causing side wall instability. The height of free fall placement shall be a maximum of 60 ft (18.3 m) as measured from the discharge end, but it shall be reduced to a maximum of 30 ft (9.1 m) when self-consolidating concrete is used. The Contractor shall obtain approval from the Engineer to place self-consolidating concrete by free fall.

Concrete placed by free fall shall fall directly to the base without contacting either the rebar cage or shaft sidewall. Drop chutes may be used to direct concrete to the base during free fall placement.

Drop chutes used to direct placement of free fall concrete shall consist of a smooth tube of either one continuous section or multiple pieces that can be added and removed. Concrete may be placed through either a hopper at the top of the tube or side openings as the drop chute is retrieved during concrete placement. The drop chute shall be supported so that free fall does not exceed the specified maximum 60 ft (18.3 m) or 30 ft (9.1 m) at all times from the discharge end, and to ensure the concrete does not strike the rebar cage. If placement cannot be satisfactorily accomplished by free fall in the opinion of the Engineer, either a tremie or pump shall be used to accomplish the pour."

80316

PLANTING WOODY PLANTS (BDE)

Effective: January 1, 2012
Revised: August 1, 2012

Revise the second sentence of Article 253.01 of the Standard Specifications to read:

"This work shall consist of furnishing, transporting, and planting woody plants such as trees, shrubs, evergreens, vines, and seedlings."

Revise Article 253.02(a) of the Standard Specifications to read:

"(a) Trees, Shrubs, Evergreens, Vines and Seedlings ..... 1081.01"

Revise the first sentence of Article 253.08(a) of the Standard Specifications to read:

"(a) Excavation for Deciduous Trees and Evergreen Trees."

Revise the first sentence of Article 253.08(b) of the Standard Specifications to read:

"(b) Excavation for Deciduous Shrubs, Evergreen Shrubs, Vines, and Seedlings."

Revise the first sentence of Article 253.13 of the Standard Specifications to read:

"All deciduous and evergreen trees, with the exception of multi-stem or clump form specimens, over 8 ft (2.5 m) in height shall require three 6 ft (2 m) long steel posts so placed that they are equidistant from each other and adjacent to the outside of the ball."

Revise the first sentence of the second paragraph of Article 253.14 of the Standard Specifications to read:

"This period of establishment for the plants shall not delay acceptance of the entire project and final payment due if the contractor requires and receives from the subcontractor a third party performance bond naming the Department as obligee in the full amount of the planting quantities subject to this period of establishment, multiplied by their contract unit prices."

Revise the third sentence of Article 253.16 of the Standard Specifications to read:

"Trees, shrubs, evergreens, and vines will be measured as each individual plant."

Revise Article 253.17 of the Standard Specifications to read:

"**253.17 Basis of Payment.** This work will be paid for at the contract unit price per each for TREES, SHRUBS, EVERGREENS, or VINES, of the species, root type, and plant size specified; and per unit for SEEDLINGS. Payment will be made according to the following schedule.

(a) Initial Payment. Upon completion of planting, mulch covering, wrapping, and bracing, 90 percent of the pay item(s) will be paid.

(b) Final Payment. Upon inspection and acceptance of the plant material, or upon execution of a third party bond, the remaining ten percent of the pay item(s) will be paid."

Revise the first paragraph of Article 1081.01 of the Standard Specifications to read:

"**1081.01 Trees, Shrubs, Evergreens, Vines, and Seedlings.** Trees, shrubs, evergreens, vines, and seedlings shall be according to the current standards adopted by the ANLA."

80278

PORTLAND CEMENT CONCRETE (BDE)

Effective: January 1, 2012
Revised: January 1, 2013

Revise Notes 1 and 2 of Article 312.24 of the Standard Specifications to read:

"Note 1. Coarse aggregate shall be gradation CA 6, CA 7, CA 9, CA 10, or CA 11, Class D quality or better. Article 1020.05(d) shall apply.

Note 2. Fine aggregate shall be FA 1 or FA 2. Article 1020.05(d) shall apply."

Revise the first paragraph of Article 312.26 of the Standard Specifications to read:

"**312.26 Proportioning and Mix Design.** At least 60 days prior to start of placing CAM II, the Contractor shall submit samples of materials for proportioning and testing. The mixture shall contain a minimum of 200 lb (90 kg) of cement per cubic yard (cubic meter). Portland cement may be replaced with fly ash according to Article 1020.05(c)(1), however the minimum portland cement content in the mixture shall be 170 lbs/cu yd (101 kg/cu m). Blends of coarse and fine aggregates will be permitted, provided the volume of fine aggregate does not exceed the volume of coarse aggregate. The Engineer will determine the proportions of materials for the mixture. However, the Contractor may substitute their own mix design. Article 1020.05(a) shall apply and a Level III PCC Technician shall develop the mix design."

Revise the second paragraph of Article 503.22 of the Standard Specifications to read:

Other cast-in-place concrete for structures will be paid for at the contract unit price per cubic yard (cubic meter) for CONCRETE HANDRAIL, CONCRETE ENCASEMENT, and SEAL COAT CONCRETE."

Add the following to Article 1003.02 of the Standard Specifications:

(e) Alkali Reaction.

(1) ASTM C 1260. Each fine aggregate will be tested by the Department for alkali reaction according to ASTM C 1260. The test will be performed with Type I or II portland cement having a total equivalent alkali content ($Na_2O + 0.658K_2O$) of 0.90 percent or greater. The Engineer will determine the assigned expansion value for each aggregate, and these values will be made available on the Department's Alkali-Silica Potential Reactivity Rating List. The Engineer may differentiate aggregate based on ledge, production method, gradation number, or other factors. An expansion value of 0.03 percent will be assigned to limestone or dolomite fine

aggregates (manufactured stone sand). However, the Department reserves the right to perform the ASTM C 1260 test.

(2) ASTM C 1293 by Department. In some instances, such as chert natural sand or other fine aggregates, testing according to ASTM C 1260 may not provide accurate test results. In this case, the Department may only test according to ASTM C 1293.

(3) ASTM C 1293 by Contractor. If an individual aggregate has an ASTM C 1260 expansion value that is unacceptable to the Contractor, an ASTM C 1293 test may be performed by the Contractor to evaluate the Department's ASTM C 1260 test result. The laboratory performing the ASTM C 1293 test shall be approved by the Department according to the current Bureau of Materials and Physical Research Policy Memorandum "Minimum Laboratory Requirements for Alkali-Silica Reactivity (ASR) Testing".

The ASTM C 1293 test shall be performed with Type I or II portland cement having a total equivalent alkali content ($Na_2O + 0.658K_2O$) of 0.80 percent or greater. The interior vertical wall of the ASTM C 1293 recommended container (pail) shall be half covered with a wick of absorbent material consisting of blotting paper. If the testing laboratory desires to use an alternate container, wick of absorbent material, or amount of coverage inside the container with blotting paper, ASTM C 1293 test results with an alkali-reactive aggregate of known expansion characteristics shall be provided to the Engineer for review and approval. If the expansion is less than 0.040 percent after one year, the aggregate will be assigned an ASTM C 1260 expansion value of 0.08 percent that will be valid for two years, unless the Engineer determines the aggregate has changed significantly. If the aggregate is manufactured into multiple gradation numbers, and the other gradation numbers have the same or lower ASTM C 1260 value, the ASTM C 1293 test result may apply to multiple gradation numbers.

The Engineer reserves the right to verify a Contractor's ASTM C 1293 test result. When the Contractor performs the test, a split sample shall be provided to the Engineer. The Engineer may also independently obtain a sample at any time. The aggregate will be considered reactive if the Contractor or Engineer obtains an expansion value of 0.040 percent or greater.

Revise the first paragraph of Article 1004.01(e)(5) of the Standard Specifications to read:

"Crushed concrete, crushed slag, or lightweight aggregate for portland cement concrete shall be stockpiled in a moist condition (saturated surface dry or greater) and the moisture content shall be maintained uniformly throughout the stockpile by periodic sprinkling."

Revise Article 1004.02(d) of the Standard Specifications to read:

"(d) Combining Sizes. Each size shall be stored separately and care shall be taken to prevent them from being mixed until they are ready to be proportioned. Separate compartments shall be provided to proportion each size.

(1) When Class BS concrete is to be pumped, the coarse aggregate gradation shall have a minimum of 45 percent passing the 1/2 in. (12.5 mm) sieve. The Contractor may combine two or more coarse aggregate sizes, consisting of CA 7, CA 11, CA 13, CA 14, and CA 16, provided a CA 7 or CA 11 is included in the blend.

(2) If the coarse aggregate is furnished in separate sizes, they shall be combined in proportions to provide a uniformly graded coarse aggregate grading within the following limits.

Class of Concrete 1/	Combined Sizes	Sieve Size and Percent Passing						
		2 1/2 in.	2 in.	1 3/4 in.	1 1/2 in.	1 in.	1/2 in.	No. 4
PV 2/								
	CA 5 & CA 7	---	---	100	98±2	72±22	22±12	3±3
	CA 5 & CA 11	---	---	100	98±2	72±22	22±12	3±3
SI and SC 2/								
	CA 3 & CA 7	100	95±5	---	---	55±25	20±10	3±3
	CA 3 & CA 11	100	95±5	---	---	55±25	20±10	3±3
	CA 5 & CA 7	---	---	100	98±2	72±22	22±12	3±3
	CA 5 & CA 11	---	---	100	98±2	72±22	22±12	3±3

Class of Concrete 1/	Combined Sizes	Sieve Size (metric) and Percent Passing						
		63 mm	50 mm	45 mm	37.5 mm	25 mm	12.5 mm	4.75 mm
PV 2/								
	CA 5 & CA 7	---	---	100	98±2	72±22	22±12	3±3
	CA 5 & CA 11	---	---	100	98±2	72±22	22±12	3±3
SI and SC 2/								
	CA 3 & CA 7	100	95±5	---	---	55±25	20±10	3±3
	CA 3 & CA 11	100	95±5	---	---	55±25	20±10	3±3
	CA 5 & CA 7	---	---	100	98±2	72±22	22±12	3±3
	CA 5 & CA 11	---	---	100	98±2	72±22	22±12	3±3

1/ See Table 1 of Article 1020.04.

2/ Any of the listed combination of sizes may be used."

Add the following to Article 1004.02 of the Standard Specifications:

(g) Alkali Reaction.

(1) ASTM C 1260. Each coarse aggregate will be tested by the Department for alkali reaction according to ASTM C 1260. The test will be performed with Type I or II portland cement having a total equivalent alkali content ($Na_2O + 0.658K_2O$) of 0.90 percent or greater. The Engineer will determine the assigned expansion value for each aggregate, and these values will be made available on the Department's Alkali-Silica Potential Reactivity Rating List. The Engineer may differentiate aggregate based on ledge, production method, gradation number, or other factors. An expansion value of 0.05 percent will be assigned to limestone or dolomite coarse aggregates. However, the Department reserves the right to perform the ASTM C 1260 test.

(2) ASTM C 1293 by Department. In some instances testing a coarse aggregate according to ASTM C 1260 may not provide accurate test results. In this case, the Department may only test according to ASTM C 1293.

(3) ASTM C 1293 by Contractor. If an individual aggregate has an ASTM C 1260 expansion value that is unacceptable to the Contractor, an ASTM C 1293 test may be performed by the Contractor according to Article 1003.02(e)(3).

Revise the first paragraph of Article 1019.06 of the Standard Specifications to read:

"**1019.06 Contractor Mix Design.** A Contractor may submit their own mix design and may propose alternate fine aggregate materials, fine aggregate gradations, or material proportions. Article 1020.05(a) shall apply and a Level III PCC Technician shall develop the mix design."

Revise Section 1020 of the Standard Specifications to read:

"SECTION 1020. PORTLAND CEMENT CONCRETE

1020.01 Description. This item shall consist of the materials, mix design, production, testing, curing, low air temperature protection, and temperature control of concrete.

1020.02 Materials. Materials shall be according to the following.

Item	Article/Section
(a) Cement	1001
(b) Water	1002
(c) Fine Aggregate	1003
(d) Coarse Aggregate	1004

(e) Concrete Admixtures 1021
(f) Finely Divided Minerals 1010
(g) Concrete Curing Materials 1022
(h) Straw ..... 1081.06(a)(1)
(i) Calcium Chloride 1013.01

1020.03 Equipment. Equipment shall be according to the following.

Item	Article/Section
(a) Concrete Mixers and Trucks	1103.01
(b) Batching and Weighing Equipment	1103.02
(c) Automatic and Semi-Automatic Batching Equipment	1103.03
(d) Water Supply Equipment	1103.11
(e) Membrane Curing Equipment	1101.09
(f) Mobile Portland Cement Concrete Plants	1103.04

1020.04 Concrete Classes and General Mix Design Criteria. The classes of concrete shown in Table 1 identify the various mixtures by the general uses and mix design criteria. If the class of concrete for a specific item of construction is not specified, Class SI concrete shall be used.

For the minimum cement factor in Table 1, it shall apply to portland cement, portland-pozzolan cement, and portland blast-furnace slag except when a particular cement is specified in the Table.

The Contractor shall not assume that the minimum cement factor indicated in Table 1 will produce a mixture that will meet the specified strength. In addition, the Contractor shall not assume that the maximum finely divided mineral allowed in a mix design according to Article 1020.05(c) will produce a mixture that will meet the specified strength. The Contractor shall select a cement factor within the allowable range that will obtain the specified strength. The Contractor shall take into consideration materials selected, seasonal temperatures, and other factors which may require the Contractor to submit multiple mix designs.

For a portland-pozzolan cement, portland blast-furnace slag cement, or when replacing portland cement with finely divided minerals per Articles 1020.05(c) and 1020.05(d), the portland cement content in the mixture shall be a minimum of 375 lbs/cu yd (222 kg/cu m). When the total of organic processing additions, inorganic processing additions, and limestone exceed 5.0 percent in the cement, the minimum portland cement content in the mixture shall be 400 lbs/cu yd (237 kg/cu m). When calculating the portland cement portion in the portland-pozzolan or portland blast-furnace slag cement, the AASHTO M 240 tolerance may be ignored.

Special classifications may be made for the purpose of including the concrete for a particular use or location as a separate pay item in the contract. The concrete used in such cases shall conform to this section.

TABLE 1. CLASSES OF CONCRETE AND MIX DESIGN CRITERIA

Class of Conc.	Use	Specification Section Reference	Cement Factor cwt/cu yd (3) Min.	Cement Factor cwt/cu yd (3) Max	Water / Cement Ratio lb/lb	Slump in. (4)	Mix Design Compressive Strength (Flexural Strength) psi, minimum Days 3	14	28	Air Content %	Coarse Aggregate Gradations (14)
PV	Pavement Base Course Base Course Widening Driveway Pavement Shoulders Shoulder Curb	420 or 421 353 354 423 483 662	5.65 (1) 6.05 (2)	7.05	0.32 - 0.42	2 - 4 (5)	Ty III 3500 (650)	3500 (650)		5.0 - 8.0 (5)	CA 5 & CA 7, CA 5 & CA 11, CA 7, CA 11, or CA 14
PP	Pavement Patching Bridge Deck Patching (10)	442					3200 (600) Article 701.17(e)(3)b.				CA 7, CA 11, CA 13, CA 14, or CA 16
	PP-1		6.50 6.20 (Ty III)	7.50 7.20 (Ty III)	0.32 - 0.44	2 - 4	at 48 hours			4.0 - 7.0	
	PP-2		7.35	8.20	0.32 - 0.38	2 - 6	at 24 hours			4.0 - 6.0	
	PP-3		7.35 (Ty III) (8)	7.35 (Ty III) (8)	0.32 - 0.35	2 - 4	at 16 hours			4.0 - 6.0	
	PP-4		6.00 (9)	6.25 (9)	0.32 - 0.50	2 - 6	at 8 hours			4.0 - 6.0	
	PP-5		6.75 (9)	6.75 (9)	0.32 - 0.40	2 - 8	at 4 hours			4.0 - 6.0	
RR	Railroad Crossing	422	6.50 6.20 (Ty III)	7.50 7.20 (Ty III)	0.32 - 0.44	2 - 4	3500 (650) at 48 hours			4.0 - 7.0	CA 7, CA 11, or CA 14
BS	Bridge Superstructure Bridge Approach Slab	503	6.05	7.05	0.32 - 0.44	2 - 4 (5)		4000 (675)		5.0 - 8.0 (5)	CA 7, CA 11, or CA 14 (7)
PC	Various Precast Concrete Items Wet Cast Dry Cast	1042	5.65 5.65 (TY III)	7.05 7.05 (TY III)	0.32 - 0.44 0.25 - 0.40	1 - 4 0 - 1	See Section 1042			5.0 - 8.0 N/A	CA7, CA11,CA 13, CA 14, CA 16, or CA 7 & CA 16
PS	Precast Prestressed Members	504	5.65 5.65 (TY III)	7.05 7.05 (TY III)	0.32 - 0.44	1 - 4			Plans	5.0 - 8.0	CA 11 (11), CA 13, CA 14 (11), or CA 16
	Precast Prestressed Piles and Extensions	512							5000		
	Precast Prestressed Sight Screen	639							3500		

TABLE 1. CLASSES OF CONCRETE AND MIX DESIGN CRITERIA

Class of Conc.	Use	Specification Section Reference	Cement Factor cwt/cu yd (3)		Water / Cement Ratio lb/lb	Slump in. (4)	Mix Design Compressive Strength (Flexural Strength) psi, minimum			Air Content %	Coarse Aggregate Gradations (14)
							Days				
			Min.	Max			3	14	28		
DS	Drilled Shaft (12) Metal Shell Piles (12) Sign Structures Drilled Shaft (12) Light Tower Foundation (12)	516 512 734 837	6.65	7.05	0.32 - 0.44	6 - 8 (6)		4000 (675)		5.0 - 8.0	CA 13, CA 14, CA 16, or a blend of these gradations.
SC	Seal Coat	503	5.65 (1) 6.05 (2)	7.05	0.32 - 0.44	3 - 5		3500 (650)		Optional 6.0 max.	CA 3 & CA 7, CA 3 & CA 11, CA 5 & CA 7, CA 5 & CA 11, CA 7, or CA 11
SI	Structures (except Superstructure) Sidewalk Slope Wall Encasement Box Culverts End Section and Collar Curb, Gutter, Curb & Gutter, Median, and Paved Ditch Concrete Barrier Sign Structures Spread Footing Concrete Foundation Pole Foundation (12) Traffic Signal Foundation Drilled Shaft (12) Square or Rectangular	503 424 511 512 540 542 606 637 734 836 878	5.65 (1) 6.05 (2)	7.05	0.32 - 0.44	2 - 4 (5)		3500 (650)		5.0 - 8.0 (5)	CA 3 & CA 7, CA 3 & CA 11, CA 5 & CA 7, CA 5 & CA 11, CA 7, CA 11, CA 13, CA 14, or CA 16 (13)

Notes:

(1) Central-mixed.

(2) Truck-mixed or shrink-mixed.

(3) For Class SC concrete and for any other class of concrete that is to be placed underwater, except Class DS concrete, the cement factor shall be increased by ten percent.

(4) The maximum slump may be increased to 7 in. when a high range water-reducing admixture is used for all classes of concrete, except Class PV, SC, and PP. For Class SC, the maximum slump may be increased to 8 in. For Class PP-1, the maximum slump may be increased to 6 in. For Class PS, the 7 in. maximum slump may be increased to 8 1/2 in. if the high range water-reducing admixture is the polycarboxylate type.

(5) The slump range for slipform construction shall be 1/2 to 2 1/2 in. and the air content range shall be 5.5 to 8.0 percent.

(6) If concrete is placed to displace drilling fluid, or against temporary casing, the slump shall be 8 - 10 in. at the point of placement. If a water-reducing admixture is used in lieu of a high range water-reducing admixture according to Article 1020.05(b)(7), the slump shall be 2 - 4 in.

(7) For Class BS concrete used in bridge deck patching, the coarse aggregate gradation shall be CA 13, CA 14, or CA 16, except CA 11 may be used for full-depth patching.

(8) In addition to the Type III portland cement, 100 lb/cu yd of ground granulated blast-furnace slag and 50 lb/cu yd of microsilica (silica fume) shall be used. For an air temperature greater than 85 ºF, the Type III portland cement may be replaced with Type I or II portland cement.

(9) The cement shall be a rapid hardening cement from the Department's "Approved List of Packaged, Dry, Rapid Hardening Cementitious Materials for Concrete Repairs" for PP-4 and calcium aluminate cement for PP-5.

(10) For Class PP concrete used in bridge deck patching, the coarse aggregate gradation shall be CA 13, CA 14, or CA 16, except CA 11 may be used for full-depth patching. In addition, the mix design shall have 72 hours to obtain a 4,000 psi compressive or 675 psi flexural strength for all PP mix designs.

(11) The nominal maximum size permitted is 3/4 in. Nominal maximum size is defined as the largest sieve which retains any of the aggregate sample particles.

(12) The concrete mix shall be designed to remain fluid throughout the anticipated duration of the pour plus one hour. At the Engineer's discretion, the Contractor may be required to conduct a minimum 2 cu yd trial batch to verify the mix design.

(13) CA 3 or CA 5 may be used when the nominal maximum size does not exceed two-thirds the clear distance between parallel reinforcement bars, or between the reinforcement bar and the form. Nominal maximum size is defined in Note 11.

(14) Alternate combinations of gradation sizes may be used with the approval of the Engineer. Refer also to Article 1004.02(d) for additional information on combining sizes.

TABLE 1. CLASSES OF CONCRETE AND MIX DESIGN CRITERIA (metric)

Class of Conc.	Use	Specification Section Reference	Cement Factor kg/cu m (3)		Water / Cement Ratio kg/kg	Slump mm (4)	Mix Design Compressive Strength (Flexural Strength) kPa, minimum			Air Content %	Coarse Aggregate Gradations (14)
							Days				
			Min.	Max			3	14	28		
PV	Pavement Base Course Base Course Widening Driveway Pavement Shoulders Shoulder Curb	420 or 421 353 354 423 483 662	335 (1) 360 (2)	418	0.32 - 0.42	50 - 100 (5)	Ty III 24,000 (4500)	24,000 (4500)		5.0 - 8.0 (5)	CA 5 & CA 7, CA 5 & CA 11, CA 7, CA 11, or CA 14
PP	Pavement Patching Bridge Deck Patching (10)	442					22,100 (4150) Article 701.17(e)(3)b.				CA 7, CA 11, CA 13, CA 14, or CA 16
	PP-1		385 365 (Ty III)	445 425 (Ty III)	0.32 - 0.44	50 - 100	at 48 hours			4.0 - 7.0	
	PP-2		435	485	0.32 - 0.38	50 - 150	at 24 hours			4.0 - 6.0	
	PP-3		435 (Ty III) (8)	435 (Ty III) (8)	0.32 - 0.35	50 - 100	at 16 hours			4.0 - 6.0	
	PP-4		355 (9)	370 (9)	0.32 - 0.50	50 - 150	at 8 hours			4.0 - 6.0	
	PP-5		400 (9)	400 (9)	0.32 – 0.40	50 - 200	at 4 hours			4.0 – 6.0	
RR	Railroad Crossing	422	385 365 (Ty III)	445 425 (Ty III)	0.32 - 0.44	50 - 100	24,000 (4500) at 48 hours			4.0 - 7.0	CA 7, CA 11, or CA 14
BS	Bridge Superstructure Bridge Approach Slab	503	360	418	0.32 - 0.44	50 - 100 (5)		27,500 (4650)		5.0 - 8.0 (5)	CA 7, CA 11, or CA 14 (7)
PC	Various Precast Concrete Items Wet Cast Dry Cast	1042	335 335 (TY III)	418 418 (TY III)	0.32 - 0.44 0.25 - 0.40	25 - 100 0 - 25	See Section 1042			5.0 - 8.0 N/A	CA7, CA11, CA13, CA 14, CA 16, or CA 7 & CA 16
PS	Precast Prestressed Members	504	335 335 (TY III)	418 418 (TY III)	0.32 - 0.44	25 - 100			Plans	5.0 - 8.0	CA 11 (11), CA 13, CA 14 (11), or CA 16
	Precast Prestressed Piles and Extensions	512							34,500		
	Precast Prestressed Sight Screen	639							24,000		

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TABLE 1. CLASSES OF CONCRETE AND MIX DESIGN CRITERIA (metric)

Class of Conc.	Use	Specification Section Reference	Cement Factor kg/cu m (3)		Water / Cement Ratio kg/kg	Slump mm (4)	Mix Design Compressive Strength (Flexural Strength) kPa, minimum			Air Content %	Coarse Aggregate Gradations (14)
							Days				
			Min.	Max			3	14	28		
DS	Drilled Shaft (12) Metal Shell Piles (12) Sign Structures Drilled Shaft (12) Light Tower Foundation (12)	516 512 734 837	395	418	0.32 - 0.44	150 -200 (6)		27,500 (4650)		5.0 - 8.0	CA 13, CA 14, CA 16, or a blend of these gradations.
SC	Seal Coat	503	335 (1) 360 (2)	418	0.32 - 0.44	75 - 125		24,000 (4500)		Optional 6.0 max.	CA 3 & CA 7, CA 3 & CA 11, CA 5 & CA 7, CA 5 & CA 11, CA 7, or CA 11
SI	Structures (except Superstructure) Sidewalk Slope Wall Encasement Box Culverts End Section and Collar Curb, Gutter, Curb & Gutter, Median, and Paved Ditch Concrete Barrier Sign Structures Spread Footing Concrete Foundation Pole Foundation (12) Traffic Signal Foundation Drilled Shaft (12) Square or Rectangular	503 424 511 512 540 542 606 637 734 836 878	335 (1) 360 (2)	418	0.32 - 0.44	50 - 100 (5)		24,000 (4500)		5.0 - 8.0 (5)	CA 3 & CA 7, CA 3 & CA 11, CA 5 & CA 7, CA 5 & CA 11, CA 7, CA 11, CA 13, CA 14, or CA 16 (13)

Notes:
(1) Central-mixed.
(2) Truck-mixed or shrink-mixed.
(3) For Class SC concrete and for any other class of concrete that is to be placed underwater, except Class DS concrete, the cement factor shall be increased by ten percent.
(4) The maximum slump may be increased to 175 mm when a high range water-reducing admixture is used for all classes of concrete except Class PV, SC, and PP. For Class SC, the maximum slump may be increased to 200 mm. For Class PP-1, the maximum slump may be increased to 150 mm. For Class PS, the 175 mm maximum slump may be increased to 215 mm if the high range water-reducing admixture is the polycarboxylate type.
(5) The slump range for slipform construction shall be 13 to 64 mm and the air content range shall be 5.5 to 8.0 percent.
(6) If concrete is placed to displace drilling fluid, or against temporary casing, the slump shall be 200 - 250 mm at the point of placement. If a water-reducing admixture is used in lieu of a high range water-reducing admixture according to Article 1020.05(b)(7), the slump shall be 50 – 100 mm.
(7) For Class BS concrete used in bridge deck patching, the coarse aggregate gradation shall be CA 13, CA 14, or CA 16, except CA 11 may be used for full-depth patching.
(8) In addition to the Type III portland cement, 60 kg/cu m of ground granulated blast-furnace slag and 30 kg/cu m of microsilica (silica fume) shall be used. For an air temperature greater than 30 ºC, the Type III portland cement may be replaced with Type I or II portland cement.
(9) The cement shall be a rapid hardening cement from the Department's "Approved List of Packaged, Dry, Rapid Hardening Cementitious Materials for Concrete Repairs" for PP-4 and calcium aluminate cement for PP-5.
(10) For Class PP concrete used in bridge deck patching, the coarse aggregate gradation shall be CA 13, CA 14, or CA 16, except CA 11 may be used for full-depth patching. In addition, the mix design shall have 72 hours to obtain a 27,500 kPa compressive or 4,650 kPa flexural.
(11) The nominal maximum size permitted is 19 mm. Nominal maximum size is defined as the largest sieve which retains any of the aggregate sample particles.
(12) The concrete mix shall be designed to remain fluid throughout the anticipated duration of the pour plus one hour. At the Engineer's discretion, the Contractor may be required to conduct a minimum 1.5 cu m trial batch to verify the mix design.
(13) CA 3 or CA 5 may be used when the nominal maximum size does not exceed two-thirds the clear distance between parallel reinforcement bars, or between the reinforcement bar and the form. Nominal maximum size is defined in Note 11.
(14) Alternate combinations of gradation sizes may be used with the approval of the Engineer. Refer also to Article 1004.02(d) for additional information on combining sizes.

Self-consolidating concrete is a flowable mixture that does not require mechanical vibration for consolidation. Self-consolidating concrete mix designs may be developed for Class BS, PC, PS, DS, and SI concrete. Self-consolidating concrete mix designs may also be developed for precast concrete products that are not subjected to Class PC concrete requirements according to Section 1042. The mix design criteria for the concrete mixture shall be according to Article 1020.04 with the following exceptions.

(a) The slump requirements shall not apply.

(b) The concrete mixture should be uniformly graded, and information in the "Portland Cement Concrete Level III Technician Course – Manual of Instructions for Design of Concrete Mixtures" may be used to develop the uniformly graded mix design. The coarse aggregate gradations shall be CA 11, CA 13, CA 14, CA 16, or a blend of these gradations. However, the final gradation when using a single coarse aggregate or combination of coarse aggregates shall have 100 percent pass the 1 in. (25 mm) sieve, and minimum 95 percent pass the 3/4 in. (19 mm) sieve. The fine aggregate proportion shall be a maximum 50 percent by weight (mass) of the total aggregate used.

(c) The slump flow range shall be 22 in. (560 mm) minimum to 28 in. (710 mm) maximum and tested according to Illinois Test Procedure SCC-2.

(d) The visual stability index shall be a maximum of 1 and tested according to Illinois Test Procedure SCC-2.

(e) The J-Ring value shall be a maximum of 2 in. (50 mm) and tested according to Illinois Test Procedure SCC-3. The L-Box blocking ratio shall be a minimum of 80 percent and tested according to Illinois Test Procedure SCC-3. The Contractor has the option to select either test.

(f) The hardened visual stability index shall be a maximum of 1 and tested according to Illinois Test Procedure SCC-6.

(g) If Class PC concrete requirements do not apply to the precast concrete product according to Section 1042, the maximum cement factor shall be 7.05 cwt/cu yd (418 kg/cu m) and the maximum allowable water/cement ratio shall be 0.44.

(h) If the measured slump flow, visual stability index, J-Ring value, or L-Box blocking ratio fall outside the limits specified, a check test will be made. In the event of a second failure, the Engineer may refuse to permit the use of the batch of concrete represented.

The Contractor may use water or self-consolidating admixtures at the jobsite to obtain the specified slump flow, visual stability index, J-ring value, or L-box blocking ratio. The maximum design water/cement ratio shall not be exceeded.

1020.05 Other Concrete Criteria. The concrete shall be according to the following.

(a) Proportioning and Mix Design. For all Classes of concrete, it shall be the Contractor's responsibility to determine mix design material proportions and to proportion each batch of concrete. A Level III PCC Technician shall develop the mix design for all Classes of concrete, except Classes PC and PS. The mix design, submittal information, trial batch, and Engineer verification shall be according to the "Portland Cement Concrete Level III Technician" course material.

The Contractor shall provide the mix designs a minimum of 45 calendar days prior to production. More than one mix design may be submitted for each class of concrete.

The Engineer will verify the mix design submitted by the Contractor. Verification of a mix design shall in no manner be construed as acceptance of any mixture produced. Once a mix design has been verified, the Engineer shall be notified of any proposed changes.

Tests performed at the jobsite will determine if a mix design can meet specifications. If the tests indicate it cannot, the Contractor shall make adjustments to a mix design, or submit a new mix design if necessary, to comply with the specifications.

(b) Admixtures. The Contractor shall be responsible for using admixtures and determining dosages for all Classes of concrete, cement aggregate mixture II, and controlled low-strength material that will produce a mixture with suitable workability, consistency, and plasticity. In addition, admixture dosages shall result in the mixture meeting the specified plastic and hardened properties. The Contractor shall obtain approval from the Engineer to use an accelerator when the concrete temperature is greater than 60 °F (16 °C). However, this accelerator approval by the Engineer will not be required for Class PP, RR, PC, and PS concrete. The accelerator shall be the non-chloride type unless otherwise specified in the contract plans.

The Department will maintain an Approved List of Corrosion Inhibitors. Corrosion inhibitor dosage rates shall be according to Article 1020.05(b)(10). For information on approved controlled low-strength material air-entraining admixtures, refer to Article 1019.02. The Department will also maintain an Approved List of Concrete Admixtures, and an admixture technical representative shall be consulted by the Contractor prior to the pour when determining an admixture dosage from this list or when making minor admixture dosage adjustments at the jobsite. The dosage shall be within the range indicated on the approved list unless the influence by other admixtures, jobsite conditions (such as a very short haul time), or other circumstances warrant a dosage outside the range. The Engineer shall be notified when a dosage is proposed outside the range. To determine an admixture dosage, air temperature, concrete temperature, cement source and quantity, finely divided mineral sources and quantity, influence of other admixtures, haul time, placement conditions, and other factors as appropriate shall be considered. The Engineer may request the Contractor to have a batch of concrete mixed in the lab or field to verify the admixture dosage is correct. An admixture dosage or combination of admixture dosages shall not delay the initial set of concrete by more than one hour. When a retarding admixture is required or appropriate for a bridge deck or bridge deck overlay pour, the initial set time shall be delayed until the deflections due

to the concrete dead load are no longer a concern for inducing cracks in the completed work. However, a retarding admixture shall not be used to further extend the pour time and justify the alteration of a bridge deck pour sequence.

When determining water in admixtures for water/cement ratio, the Contractor shall calculate 70 percent of the admixture dosage as water, except a value of 50 percent shall be used for a latex admixture used in bridge deck latex concrete overlays.

The sequence, method, and equipment for adding the admixtures shall be approved by the Engineer. Admixtures shall be added to the concrete separately. An accelerator shall always be added prior to a high range water-reducing admixture, if both are used.

Admixture use shall be according to the following.

(1) When the atmosphere or concrete temperature is 65 °F (18 °C) or higher, a retarding admixture shall be used in the Class BS concrete and concrete bridge deck overlays. The proportions of the ingredients of the concrete shall be the same as without the retarding admixture, except that the amount of mixing water shall be reduced, as may be necessary, in order to maintain the consistency of the concrete as required. In addition, a high range water-reducing admixture shall be used in bridge deck concrete. At the option of the Contractor, a water-reducing admixture may be used with the high range water-reducing admixture in Class BS concrete.

(2) At the Contractor's option, admixtures in addition to an air-entraining admixture may be used for Class PP-1 or RR concrete. When the air temperature is less than 55 °F (13 °C) and an accelerator is used, the non-chloride accelerator shall be calcium nitrite.

(3) When Class C fly ash or ground granulated blast-furnace slag is used in Class PP-1 or RR concrete, a water-reducing or high range water-reducing admixture shall be used.

(4) For Class PP-2 or PP-3 concrete, a non-chloride accelerator followed by a high range water-reducing admixture shall be used, in addition to the air-entraining admixture. The Contractor has the option to use a water-reducing admixture with the high range water-reducing admixture. For Class PP-3 concrete, the non-chloride accelerator shall be calcium nitrite. For Class PP-2 concrete, the non-chloride accelerator shall be calcium nitrite when the air temperature is less than 55 °F (13 °C).

(5) For Class PP-4 concrete, a high range water-reducing admixture shall be used in addition to the air-entraining admixture. The Contractor has the option to use a water-reducing admixture with the high range water-reducing admixture. An accelerator shall not be used. For stationary or truck-mixed concrete, a retarding admixture shall be used to allow for haul time. The Contractor has the option to use

a mobile portland cement concrete plant, but a retarding admixture shall not be used unless approved by the Engineer.

For PP-5 concrete, a non-chloride accelerator, high range water-reducing admixture, and air-entraining admixture shall be used. The accelerator, high range water-reducing admixture, and air-entraining admixture shall be per the Contractor's recommendation and dosage. The approved list of concrete admixtures shall not apply. A mobile portland cement concrete plant shall be used to produce the patching mixture.

(6) When a calcium chloride accelerator is specified in the contract, the maximum chloride dosage shall be 1.0 quart (1.0 L) of solution per 100 lb (45 kg) of cement. The dosage may be increased to a maximum 2.0 quarts (2.0 L) per 100 lb (45 kg) of cement if approved by the Engineer. When a calcium chloride accelerator for Class PP-2 concrete is specified in the contract, the maximum chloride dosage shall be 1.3 quarts (1.3 L) of solution per 100 lb (45 kg) of cement. The dosage may be increased to a maximum 2.6 quarts (2.6 L) per 100 lb (45 kg) of cement if approved by the Engineer.

(7) For Class DS concrete a retarding admixture and a high range water-reducing admixture shall be used. For dry excavations that are 10 ft (3 m) or less, the high range water-reducing admixture may be replaced with a water-reducing admixture if the concrete is vibrated. The use of admixtures shall take into consideration the slump loss limits specified in Article 516.12 and the fluidity requirement in Article 1020.04 (Note 12).

(8) At the Contractor's option, when a water-reducing admixture or a high range water-reducing admixture is used for Class PV, PP-1, RR, SC, and SI concrete, the cement factor may be reduced a maximum 0.30 hundredweight/cu yd (18 kg/cu m). However, a cement factor reduction will not be allowed for concrete placed underwater.

(9) When Type F or Type G high range water-reducing admixtures are used, the initial slump shall be a minimum of 1 1/2 in. (40 mm) prior to addition of the Type F or Type G admixture, except as approved by the Engineer.

(10) When specified, a corrosion inhibitor shall be added to the concrete mixture utilized in the manufacture of precast, prestressed concrete members and/or other applications. It shall be added, at the same rate, to all grout around post-tensioning steel when specified.

When calcium nitrite is used, it shall be added at the rate of 4 gal/cu yd (20 L/cu m), and shall be added to the mix immediately after all compatible admixtures have been introduced to the batch.

When Rheocrete 222+ is used, it shall be added at the rate of 1.0 gal/cu yd (5.0 L/cu m), and the batching sequence shall be according to the manufacturer's instructions.

(c) Finely Divided Minerals. Use of finely divided minerals shall be according to the following.

(1) Fly Ash. At the Contractor's option, fly ash from approved sources may partially replace portland cement in cement aggregate mixture II, Class PV, PP-1, PP-2, RR, BS, PC, PS, DS, SC, and SI concrete.

The use of fly ash shall be according to the following.

a. Measurements of fly ash and portland cement shall be rounded up to the nearest 5 lb (2.5 kg).

b. When Class F fly ash is used in cement aggregate mixture II, Class PV, BS, PC, PS, DS, SC, and SI concrete, the amount of portland cement replaced shall not exceed 25 percent by weight (mass).

c. When Class C fly ash is used in cement aggregate mixture II, Class PV, PP-1, PP-2, RR, BS, PC, PS, DS, SC, and SI concrete, the amount of portland cement replaced shall not exceed 30 percent by weight (mass).

d. Fly ash may be used in concrete mixtures when the air temperature is below 40 °F (4 °C), but the Engineer may request a trial batch of the concrete mixture to show the mix design strength requirement will be met.

(2) Ground Granulated Blast-Furnace (GGBF) Slag. At the Contractor's option, GGBF slag may partially replace portland cement in Class PV, PP-1, PP-2, RR, BS, PC, PS, DS, SC, and SI concrete. For Class PP-3 concrete, GGBF slag shall be used according to Article 1020.04.

The use of GGBF slag shall be according to the following.

a. Measurements of GGBF slag and portland cement shall be rounded up to the nearest 5 lb (2.5 kg).

b. When GGBF slag is used in Class PV, PP-1, PP-2, RR, BS, PC, PS, DS, SC and SI concrete, the amount of portland cement replaced shall not exceed 35 percent by weight (mass).

c. GGBF slag may be used in concrete mixtures when the air temperature is below 40 °F (4 °C), but the Engineer may request a trial batch of the concrete mixture to show the mix design strength requirement will be met.

(3) Microsilica. At the Contractor's option, microsilica may be added at a maximum of 5.0 percent by weight (mass) of the cement and finely divided minerals summed together.

Microsilica shall be used in Class PP-3 concrete according to Article 1020.04.

(4) High Reactivity Metakaolin (HRM). At the Contractor's option, HRM may be added at a maximum of 5.0 percent by weight (mass) of the cement and finely divided minerals summed together.

(5) Mixtures with Multiple Finely Divided Minerals. Except as specified for Class PP-3 concrete, the Contractor has the option to use more than one finely divided mineral in Class PV, PP-1, PP-2, RR, BS, PC, PS, DS, SC, and SI concrete as follows.

a. The mixture shall contain a maximum of two finely divided minerals. The finely divided mineral in portland-pozzolan cement or portland blast-furnace slag cement shall count toward the total number of finely divided minerals allowed. The finely divided minerals shall constitute a maximum of 35.0 percent of the total cement plus finely divided minerals. The fly ash portion shall not exceed 30.0 percent for Class C fly ash or 25.0 percent for Class F fly ash. The Class C and F fly ash combination shall not exceed 30.0 percent. The ground granulated blast-furnace slag portion shall not exceed 35.0 percent. The microsilica or high-reactivity metakaolin portion used together or separately shall not exceed ten percent. The finely divided mineral in the portland-pozzolan cement or portland blast-furnace slag blended cement shall apply to the maximum 35.0 percent.

b. Central Mixed. For Class PV, SC, and SI concrete, the mixture shall contain a minimum of 565 lbs/cu yd (335 kg/cu m) of cement and finely divided minerals summed together. If a water-reducing or high-range water-reducing admixture is used, the Contractor has the option to use a minimum of 535 lbs/cu yd (320 kg/cu m).

c. Truck-Mixed or Shrink-Mixed. For Class PV, SC, and SI concrete, the mixture shall contain a minimum of 605 lbs/cu yd (360 kg/cu m) of cement and finely divided minerals summed together. If a water-reducing or high-range water-reducing admixture is used, the Contractor has the option to use a minimum of 575 lbs/cu yd (345 kg/cu m).

d. Central-Mixed, Truck-Mixed or Shrink-Mixed. For Class PP-1 and RR concrete, the mixture shall contain a minimum of 650 lbs/cu yd (385 kg/cu m) of cement and finely divided minerals summed together. For Class PP-1 and RR concrete using Type III portland cement, the mixture shall contain a minimum of 620 lbs/cu yd (365 kg/cu m).

For Class PP-2 concrete, the mixture shall contain a minimum of 735 lbs/cu yd (435 kg/cu m) of cement and finely divided minerals summed together. For Class BS concrete, the mixture shall contain a minimum of 605 lbs/cu yd (360 kg/cu m). For Class DS concrete, the mixture shall contain a minimum of 665 lbs/cu yd (395 kg/cu m).

If a water-reducing or high range water-reducing admixture is used in Class PP-1 and RR concrete, the Contractor has the option to use a minimum of 620 lbs/cu yd (365 kg/cu m) of cement and finely divided minerals summed together. If a water-reducing or high-range water-reducing admixture is used with Type III portland cement in Class PP-1 and RR concrete, the Contractor has the option to use a minimum of 590 lbs/cu yd (350 kg/cu m).

e. Central-Mixed or Truck-Mixed. For Class PC and PS concrete, the mixture shall contain a minimum of 565 lbs/cu yd (335 kg/cu m) of cement and finely divided minerals summed together.

f. The mixture shall contain a maximum of 705 lbs/cu yd (418 kg/cu m) of cement and finely divided mineral(s) summed together for Class PV, BS, PC, PS, DS, SC, and SI concrete. For Class PP-1 and RR concrete, the mixture shall contain a maximum of 750 lbs/cu yd (445 kg/cu m). For Class PP-1 and RR concrete using Type III portland cement, the mixture shall contain a maximum of 720 lbs/cu yd (425 kg/cu m). For Class PP-2 concrete, the mixture shall contain a maximum of 820 lbs/cu yd (485 kg/cu m).

g. For Class SC concrete and for any other class of concrete that is to be placed underwater, except Class DS concrete, the allowable cement and finely divided minerals summed together shall be increased by ten percent.

h. The combination of cement and finely divided minerals shall comply with Article 1020.05(d).

(d) Alkali-Silica Reaction. For cast-in-place (includes cement aggregate mixture II and latex mixtures), precast, and precast prestressed concrete, one of the mixture options provided in Article 1020.05(d)(2) shall be used to reduce the risk of a deleterious alkali-silica reaction in concrete exposed to humid or wet conditions. The mixture options are not intended or adequate for concrete exposed to potassium acetate, potassium formate, sodium acetate, or sodium formate. The mixture options will not be required for the dry environment (humidity less than 60 percent) found inside buildings for residential or commercial occupancy.

The mixture options shall not apply to concrete revetment mats, insertion lining of pipe culverts, portland cement mortar fairing course, controlled low-strength material, miscellaneous grouts that are not prepackaged, Class PP-3 concrete, Class PP-4 concrete, and Class PP-5 concrete.

(1) Aggregate Groups. Each combination of aggregates used in a mixture will be assigned to an aggregate group. The point at which the coarse aggregate and fine aggregate expansion values intersect in the following table will determine the group.

Aggregate Groups			
Coarse Aggregate or Coarse Aggregate Blend ASTM C 1260 Expansion	Fine Aggregate Or Fine Aggregate Blend ASTM C 1260 Expansion		
	≤0.16%	>0.16% - 0.27%	>0.27%
≤0.16%	Group I	Group II	Group III
>0.16% - 0.27%	Group II	Group II	Group III
>0.27%	Group III	Group III	Group IV

(2) Mixture Options. Based upon the aggregate group, the following mixture options shall be used. However, the Department may prohibit a mixture option if field performance shows a deleterious alkali-silica reaction or Department testing indicates the mixture may experience a deleterious alkali-silica reaction.

Reduction of Risk for Deleterious Alkali-Silica Reaction					
Aggregate Groups	Mixture Options				
	Option 1	Option 2	Option 3	Option 4	Option 5
Group I	Mixture options are not applicable. Use any cement or finely divided mineral.				
Group II	X	X	X	X	X
Group III	X	Combine Option 2 with Option 3	Combine Option 2 with Option 3	X	X
Group IV	X	Combine Option 2 with Option 4	Invalid Option	Combine Option 2 with Option 4	X

"X" denotes valid mixture option for aggregate group.

a. Mixture Option 1. The coarse or fine aggregates shall be blended to place the material in a group that will allow the selected cement or finely divided mineral to be used. Coarse aggregate may only be blended with another coarse aggregate. Fine aggregate may only be blended with another fine aggregate. Blending of

coarse with fine aggregate to place the material in another group will not be permitted.

When a coarse or fine aggregate is blended, the weighted expansion value shall be calculated separately for the coarse and fine aggregate as follows:

Weighted Expansion Value = (a/100 x A) + (b/100 x B) + (c/100 x C) + ...

Where: a, b, c... = percentage of aggregate in the blend;
A, B, C... = expansion value for that aggregate.

b. Mixture Option 2. A finely divided mineral shall be used as described in 1), 2), 3), or 4) that follow. In addition, a blended cement with a finely divided mineral may be added to a separate finely divided mineral to meet the following requirements, provided the finely divided minerals are the same material. However, adding together two different finely divided minerals to obtain the specified minimum percentage of one material will not be permitted for 1), 2), 3), and 4). Refer to Mixture Option 5 to address this situation.

1. Class F Fly Ash. For cement aggregate mixture II, Class PV, BS, PC, PS, MS, DS, SC and SI concrete, the Class F fly ash shall be a minimum 25.0 percent by weight (mass) of the cement and finely divided minerals summed together.

   If the maximum total equivalent available alkali content ($Na_2O + 0.658K_2O$) exceeds 4.50 percent for the Class F fly ash, it may be used only if it complies with Mixture Option 5.

2. Class C Fly Ash. For cement aggregate mixture II, Class PV, PP-1, PP-2, RR, BS, PC, PS, DS, SC, and SI concrete, Class C fly ash shall be a minimum of 25.0 percent by weight (mass) of the cement and finely divided minerals summed together.

   If the maximum total equivalent available alkali content ($Na_2O + 0.658K_2O$) exceeds 4.50 percent or the calcium oxide exceeds 26.50 percent for the Class C fly ash, it may be used only per Mixture Option 5.

3. Ground Granulated Blast-Furnace Slag. For Class PV, PP-1, PP-2, RR, BS, PC, PS, DS, SC, and SI concrete, ground granulated blast-furnace slag shall be a minimum of 25.0 percent by weight (mass) of the cement and finely divided minerals summed together.

   If the maximum total equivalent available alkali content ($Na_2O + 0.658K_2O$) exceeds 1.00 percent for the ground granulated blast-furnace slag, it may be used only per Mixture Option 5.

4. Microsilica or High Reactivity Metakaolin, Microsilica solids or high reactivity metakaolin shall be a minimum 5.0 percent by weight (mass) of the cement and finely divided minerals summed together.

   If the maximum total equivalent available alkali content ($Na_2O + 0.658K_2O$) exceeds 1.00 percent for the Microsilica or High Reactivity Metakaolin, it may be used only if it complies with Mixture Option 5.

c. Mixture Option 3. The cement used shall have a maximum total equivalent alkali content ($Na_2O + 0.658K_2O$) of 0.60 percent. When aggregate in Group II is involved and the Contractor desires to use a finely divided mineral, any finely divided mineral may be used with the cement unless the maximum total equivalent available alkali content ($Na_2O + 0.658K_2O$) exceeds 4.50 percent for the fly ash; or 1.00 percent for the ground granulated blast-furnace slag, microsilica or high reactivity metakaolin. If the alkali content is exceeded, the finely divided mineral may be used only per Mixture Option 5.

d. Mixture Option 4. The cement used shall have a maximum total equivalent alkali content ($Na_2O + 0.658K_2O$) of 0.45 percent. When aggregate in Group II or III is involved and the Contractor desires to use a finely divided mineral, any finely divided mineral may be used with the cement unless the maximum total equivalent available alkali content ($Na_2O + 0.658K_2O$) exceeds 4.50 percent for the fly ash; or 1.00 percent for the ground granulated blast-furnace slag, microsilica, or high reactivity metakaolin. If the alkali content is exceeded, the finely divided mineral may be used only per Mixture Option 5.

e. Mixture Option 5. The proposed cement or finely divided mineral may be used if the ASTM C 1567 expansion value is $\leq$ 0.16 percent when performed on the aggregate in the concrete mixture with the highest ASTM C 1260 test result. The laboratory performing the ASTM C 1567 test shall be approved by the Department according to the current Bureau of Materials and Physical Research Policy Memorandum "Minimum Laboratory Requirements for Alkali-Silica Reactivity (ASR) Testing". The ASTM C 1567 test will be valid for two years, unless the Engineer determines the materials have changed significantly.

   For latex concrete, the ASTM C 1567 test shall be performed without the latex.

   The 0.20 percent autoclave expansion limit in ASTM C 1567 shall not apply.

   If during the two year time period the Contractor needs to replace the cement, and the replacement cement has an equal or lower total equivalent alkali content ($Na_2O + 0.658K_2O$), a new ASTM C 1567 test will not be required.

   The Engineer reserved the right to verify a Contractor's ASTM C 1567 test result. When the Contractor performs the test, a split sample may be requested by the Engineer. The Engineer may also independently obtain a sample at any time.

The proposed cement or finely divided mineral will not be allowed for use if the Contractor or Engineer obtains an expansion value greater than 0.16 percent.

1020.06 Water/Cement Ratio. The water/cement ratio shall be determined on a weight (mass) basis. When a maximum water/cement ratio is specified, the water shall include mixing water, water in admixtures, free moisture on the aggregates, and water added at the jobsite. The quantity of water may be adjusted within the limit specified to meet slump requirements.

When fly ash, ground granulated blast-furnace slag, high-reactivity metakaolin, or microsilica (silica fume) are used in a concrete mix, the water/cement ratio will be based on the total cement and finely divided minerals contained in the mixture.

1020.07 Slump. The slump shall be determined according to Illinois Modified AASHTO T 119.

If the measured slump falls outside the limits specified, a check test will be made. In the event of a second failure, the Engineer may refuse to permit the use of the batch of concrete represented.

If the Contractor is unable to add water to prepare concrete of the specified slump without exceeding the maximum design water/cement ratio, a water-reducing admixture shall be added.

1020.08 Air Content. The air content shall be determined according to Illinois Modified AASHTO T 152 or Illinois Modified AASHTO T 196. The air-entrainment shall be obtained by the use of cement with an approved air-entraining admixture added during the mixing of the concrete or the use of air-entraining cement.

If the air-entraining cement furnished is found to produce concrete having air content outside the limits specified, its use shall be discontinued immediately and the Contractor shall provide other air-entraining cement which will produce air contents within the specified limits.

If the air content obtained is above the specified maximum limit at the jobsite, the Contractor may have the concrete further mixed, within the limits of time and revolutions specified, to reduce the air content. If the air content obtained is below the specified minimum limit, the Contractor may add to the concrete a sufficient quantity of an approved air-entraining admixture at the jobsite to bring the air content within the specified limits.

1020.09 Strength Tests. The specimens shall be molded and cured according to Illinois Modified AASHTO T 23. Specimens shall be field cured with the construction item as specified in Illinois Modified AASHTO T 23. The compressive strength shall be determined according to Illinois Modified AASHTO T 22. The flexural strength shall be determined according to Illinois Modified AASHTO T 177.

Except for Class PC and PS concrete, the Contractor shall transport the strength specimens from the site of the work to the field laboratory or other location as instructed by the Engineer. During transportation in a suitable light truck, the specimens shall be embedded in straw,

burlap, or other acceptable material in a manner meeting with the approval of the Engineer to protect them from damage; care shall be taken to avoid impacts during hauling and handling. For strength specimens, the Contractor shall provide a field curing box for initial curing and a water storage tank for final curing. The field curing box will be required when an air temperature below 60 °F (16 °C) is expected during the initial curing period. The device shall maintain the initial curing temperature range specified in Illinois Modified AASHTO T 23, and may be insulated or power operated as appropriate.

1020.10 Handling, Measuring, and Batching Materials. Aggregates shall be handled in a manner to prevent mixing with soil and other foreign material.

Aggregates shall be handled in a manner which produces a uniform gradation, before placement in the plant bins. Aggregates delivered to the plant in a nonuniform gradation condition shall be stockpiled. The stockpiled aggregate shall be mixed uniformly before placement in the plant bins.

Aggregates shall have a uniform moisture content before placement in the plant bins. This may require aggregates to be stockpiled for 12 hours or more to allow drainage, or water added to the stockpile, or other methods approved by the Engineer. Moisture content requirements for crushed concrete, crushed slag or lightweight aggregate shall be according to Article 1004.01(e)(5).

Aggregates, cement, and finely divided minerals shall be measured by weight (mass). Water and admixtures shall be measured by volume or weight (mass).

The Engineer may permit aggregates, cement, and finely divided minerals to be measured by volume for small isolated structures and for miscellaneous items. Aggregates, cement, and finely divided minerals shall be measured individually. The volume shall be based upon dry, loose materials.

1020.11 Mixing Portland Cement Concrete. The mixing of concrete shall be according to the following.

(a) Ready-Mixed Concrete. Ready-mixed concrete is central-mixed, truck-mixed, or shrink-mixed concrete transported and delivered in a plastic state ready for placement in the work and shall be according to the following.

(1) Central-Mixed Concrete. Central-mixed concrete is concrete which has been completely mixed in a stationary mixer and delivered in a truck agitator, a truck mixer operating at agitating speed, or a nonagitator truck.

The stationary mixer shall operate at the drum speed for which it was designed. The batch shall be charged into the drum so that some of the water shall enter in advance of the cement, finely divided minerals, and aggregates. The flow of the water shall be uniform and all water shall be in the drum by the end of the first 15 seconds of the mixing period. Water shall begin to enter the drum from zero to

two seconds in advance of solid material and shall stop flowing within two seconds of the beginning of mixing time.

Some coarse aggregate shall enter in advance of other solid materials. For the balance of the charging time for solid materials, the aggregates, finely divided minerals, and cement (to assure thorough blending) shall each flow at acceptably uniform rates, as determined by visual observation. Coarse aggregate shall enter two seconds in advance of other solid materials and a uniform rate of flow shall continue to within two seconds of the completion of charging time.

The entire contents of the drum, or of each single compartment of a multiple-drum mixer, shall be discharged before the succeeding batch is introduced.

The volume of concrete mixed per batch shall not exceed the mixer's rated capacity as shown on the standard rating plate on the mixer by more than ten percent.

The minimum mixing time shall be 75 seconds for a stationary mixer having a capacity greater than 2 cu yd (1.5 cu m). For a mixer with a capacity equal to or less than 2 cu yd (1.5 cu m) the mixing time shall be 60 seconds. Transfer time in multiple drum mixers is included in the mixing time. Mixing time shall begin when all materials are in the mixing compartment and shall end when the discharge of any part of the batch is started. The required mixing times will be established by the Engineer for all types of stationary mixers.

When central-mixed concrete is to be transported in a truck agitator or a truck mixer, the stationary-mixed batch shall be transferred to the agitating unit without delay and without loss of any portion of the batch. Agitating shall start immediately thereafter and shall continue without interruption until the batch is discharged from the agitator. The ingredients of the batch shall be completely discharged from the agitator before the succeeding batch is introduced. Drums and auxiliary parts of the equipment shall be kept free from accumulations of materials.

The vehicles used for transporting the mixed concrete shall be of such capacity, or the batches shall be so proportioned, that the entire contents of the mixer drum can be discharged into each vehicle load.

(2) Truck-Mixed Concrete. Truck-mixed concrete is completely mixed and delivered in a truck mixer. When the mixer is charged with fine and coarse aggregates simultaneously, not less than 60 nor more than 100 revolutions of the drum or blades at mixing speed shall be required, after all of the ingredients including water are in the drum. When fine and coarse aggregates are charged separately, not less than 70 revolutions will be required. For self-consolidating concrete, a minimum of 100 revolutions is required in all cases. Additional mixing beyond 100 revolutions shall be at agitating speed unless additions of water, admixtures, or other materials are made at the jobsite. The mixing operation shall begin immediately after the cement and water, or the cement and wet aggregates, come in contact. The

ingredients of the batch shall be completely discharged from the drum before the succeeding batch is introduced. The drum and auxiliary parts of the equipment shall be kept free from accumulations of materials. If additional water or an admixture is added at the jobsite, the concrete batch shall be mixed a minimum of 40 additional revolutions after each addition.

(3) Shrink-Mixed Concrete. Shrink-mixed concrete is mixed partially in a stationary mixer and completed in a truck mixer for delivery. The mixing time of the stationary mixer may be reduced to a minimum of 30 seconds to intermingle the ingredients, before transferring to the truck mixer. All ingredients for the batch shall be in the stationary mixer and partially mixed before any of the mixture is discharged into the truck mixer. The partially mixed batch shall be transferred to the truck mixer without delay and without loss of any portion of the batch, and mixing in the truck mixer shall start immediately. The mixing time in the truck mixer shall be not less than 50 nor more than 100 revolutions of the drum or blades at mixing speed. For self-consolidating concrete, a minimum of 100 revolutions is required in the truck mixer. Additional mixing beyond 100 revolutions shall be at agitating speed, unless additions of water, admixtures, or other materials are made at the jobsite. Units designed as agitators shall not be used for shrink mixing. The ingredients of the batch shall be completely discharged from the drum before the succeeding batch is introduced. The drum and auxiliary parts of the equipment shall be kept free from accumulations of materials. If additional water or an admixture is added at the jobsite, the concrete batch shall be mixed a minimum of 40 additional revolutions after each addition.

(4) Mixing Water. Wash water shall be completely discharged from the drum or container before a batch is introduced. All mixing water shall be added at the plant and any adjustment of water at the jobsite by the Contractor shall not exceed the specified maximum water/cement ratio or slump. If strength specimens have been made for a batch of concrete, and subsequently during discharge there is more water added, additional strength specimens shall be made for the batch of concrete. No additional water may be added at the jobsite to central-mixed concrete if the mix design has less than 565 lbs/cu yd (335 kg/cu m) of cement and finely divided minerals summed together.

(5) Mixing and Agitating Speeds. The mixing or agitating speeds used for truck mixers or truck agitators shall be per the manufacturer's rating plate.

(6) Capacities. The volume of plastic concrete in a given batch will be determined according to AASHTO T 121, based on the total weight (mass) of the batch, determined either from the weight (masses) of all materials, including water, entering the batch or directly from the net weight (mass) of the concrete in the batch as delivered.

The volume of mixed concrete in truck mixers or truck agitators shall in no case be greater than the rated capacity determined according to the Truck Mixer, Agitator,

and Front Discharge Concrete Carrier Standards of the Truck Mixer Manufacturer's Bureau, as shown by the rating plate attached to the truck. If the truck mixer does not have a rating plate, the volume of mixed concrete shall not exceed 63 percent of the gross volume of the drum or container, disregarding the blades. For truck agitators, the value is 80 percent.

(7) Time of Haul. Haul time shall begin when the delivery ticket is stamped. The delivery ticket shall be stamped no later than five minutes after the addition of the mixing water to the cement, or after the addition of the cement to the aggregate when the combined aggregates contain free moisture in excess of two percent by weight (mass). If more than one batch is required for charging a truck using a stationary mixer, the time of haul shall start with mixing of the first batch. Haul time shall end when the truck is emptied for incorporation of the concrete into the work.

The time elapsing from when water is added to the mix until it is deposited in place at the site of the work shall not exceed 30 minutes when the concrete is transported in nonagitating trucks.

The maximum haul time for concrete transported in truck mixers or truck agitators shall be according to the following.

Concrete Temperature at Point of Discharge °F (°C)	Haul Time	
	Hours	Minutes
50-64 (10-17.5)	1	30
>64 (>17.5) - without retarder	1	0
>64 (>17.5) - with retarder	1	30

To encourage start-up testing for mix adjustments at the plant, the first two trucks will be allowed an additional 15 minutes haul time whenever such testing is performed.

For a mixture which is not mixed on the jobsite, a delivery ticket shall be required for each load. The following information shall be recorded on each delivery ticket: (1) ticket number; (2) name of producer and plant location; (3) contract number; (4) name of Contractor; (5) stamped date and time batched; (6) truck number; (7) quantity batched; (8) amount of admixture(s) in the batch; (9) amount of water in the batch; and (10) Department mix design number.

For concrete mixed in jobsite stationary mixers, the above delivery ticket may be waived, but a method of verifying the haul time shall be established to the satisfaction of the Engineer.

(8) Production and Delivery. The production of ready-mixed concrete shall be such that the operations of placing and finishing will be continuous insofar as the job operations require. The Contractor shall be responsible for producing concrete that will have the required workability, consistency, and plasticity when delivered to the work. Concrete which is unsuitable for placement as delivered will be rejected. The

Contractor shall minimize the need to adjust the mixture at the jobsite, such as adding water and admixtures prior to discharging.

(9) Use of Multiple Plants in the Same Construction Item. The Contractor may simultaneously use central-mixed, truck-mixed, and shrink-mixed concrete from more than one plant, for the same construction item, on the same day, and in the same pour. However, the following criteria shall be met.

a. Each plant shall use the same cement, finely divided minerals, aggregates, admixtures, and fibers.

b. Each plant shall use the same mix design. However, material proportions may be altered slightly in the field to meet slump and air content criteria. Field water adjustments shall not result in a difference that exceeds 0.02 between plants for water/cement ratio. The required cement factor for central-mixed concrete shall be increased to match truck-mixed or shrink-mixed concrete, if the latter two types of mixed concrete are used in the same pour.

c. The maximum slump difference between deliveries of concrete shall be 3/4 in. (19 mm) when tested at the jobsite. If the difference is exceeded, but test results are within specification limits, the concrete may be used. The Contractor shall take immediate corrective action and shall test subsequent deliveries of concrete until the slump difference is corrected. For each day, the first three truck loads of delivered concrete from each plant shall be tested for slump by the Contractor. Thereafter, when a specified test frequency for slump is to be performed, it shall be conducted for each plant at the same time.

d. The maximum air content difference between deliveries of concrete shall be 1.5 percent when tested at the jobsite. If the difference is exceeded, but test results are within specification limits, the concrete may be used. The Contractor shall take immediate corrective action and shall test subsequent deliveries of concrete until the air content difference is corrected. For each day, the first three truck loads of delivered concrete from each plant shall be tested for air content by the Contractor. Thereafter, when a specified test frequency for air content is to be performed, it shall be conducted for each plant at the same time.

e. Strength tests shall be performed and taken at the jobsite for each plant. When a specified strength test is to be performed, it shall be conducted for each plant at the same time. The difference between plants for strength shall not exceed 900 psi (6200 kPa) compressive and 90 psi (620 kPa) flexural. If the strength difference requirements are exceeded, the Contractor shall take corrective action.

f. The maximum haul time difference between deliveries of concrete shall be 15 minutes. If the difference is exceeded, but haul time is within specification

limits, the concrete may be used. The Contractor shall take immediate corrective action and check subsequent deliveries of concrete.

(b) Class PC Concrete. The concrete shall be central-mixed or truck-mixed. Variations in plastic concrete properties shall be minimized between batches.

(c) Class PV Concrete. The concrete shall be central-mixed, truck-mixed, or shrink-mixed.

The required mixing time for stationary mixers with a capacity greater than 2 cu yd (1.5 cu m) may be less than 75 seconds upon satisfactory completion of a mixer performance test. Mixer performance tests may be requested by the Contractor when the quantity of concrete to be placed exceeds 50,000 sq yd (42,000 sq m). The testing shall be conducted according to the current Bureau of Materials and Physical Research's Policy Memorandum, "Field Test Procedures for Mixer Performance and Concrete Uniformity Tests".

The Contractor will be allowed to test two mixing times within a range of 50 to 75 seconds. If satisfactory results are not obtained from the required tests, the mixing time shall continue to be 75 seconds for the remainder of the contract. If satisfactory results are obtained, the mixing time may be reduced. In no event will mixing time be less than 50 seconds.

The Contractor shall furnish the labor, equipment, and material required to perform the testing according to the current Bureau of Materials and Physical Research's Policy Memorandum, "Field Test Procedures for Mixer Performance and Concrete Uniformity Tests".

A contract which has 12 ft (3.6 m) wide pavement or base course, and a continuous length of 1/2 mile (0.8 km) or more, shall have the following additional requirements.

(1) The plant and truck delivery operation shall be able to provide a minimum of 50 cu yd (38 cu m) of concrete per hour.

(2) The plant shall have automatic or semi-automatic batching equipment.

(d) All Other Classes of Concrete. The concrete shall be central-mixed, truck-mixed, or shrink-mixed concrete.

1020.12 Mobile Portland Cement Concrete Plants. The use of a mobile portland cement concrete plant may be approved under the provisions of Article 1020.10 for volumetric proportioning in small isolated structures, thin overlays, and for miscellaneous and incidental concrete items.

The first 1 cu ft (0.03 cu m) of concrete produced may not contain sufficient mortar and shall not be incorporated in the work. The side plate on the cement feeder shall be removed

periodically (normally the first time the mixer is used each day) to see if cement is building up on the feed drum.

Sufficient mixing capacity of mixers shall be provided to enable continuous placing and finishing insofar as the job operations and the specifications require.

Slump and air tests made immediately after discharge of the mix may be misleading, since the aggregates may absorb a significant amount of water for four or five minutes after mixing.

1020.13 Curing and Protection. The method of curing, curing period, and method of protection for each type of concrete construction is included in the following Index Table.

INDEX TABLE OF CURING AND PROTECTION OF CONCRETE CONSTRUCTION			
TYPE OF CONSTRUCTION	CURING METHODS	CURING PERIOD DAYS	LOW AIR TEMPERATURE PROTECTION METHODS
Cast-in-Place Concrete [11/]			
Pavement Shoulder	1020.13(a)(1)(2)(3)(4)(5) [3/ 5/]	3	1020.13(c)
Base Course Base Course Widening	1020.13(a)(1)(2)(3)(4)(5) [2/]	3	1020.13(c)
Driveway Median Barrier Curb Gutter Curb & Gutter Sidewalk Slope Wall Paved Ditch	1020.13(a)(1)(2)(3)(4)(5) [4/ 5/]	3	1020.13(c) [16/]
Catch Basin Manhole Inlet Valve Vault	1020.13(a)(1)(2)(3)(4)(5) [4/]	3	1020.13(c)
Pavement Patching	1020.13(a)(1)(2)(3)(4)(5) [2/]	3 [12/]	1020.13(c)
Bridge Deck Patching	1020.13(a)(3)(5)	3 or 7 [12/]	1020.13(c)
Railroad Crossing	1020.13(a)(3)(5)	1	1020.13(c)
Piles and Drilled Shafts	1020.13(a)(3)(5)	7	1020.13(d)(1)(2)(3)
Foundations & Footings Seal Coat	1020.13(a)(1)(2)(3)(4)(5) [4/ 6/]	7	1020.13(d)(1)(2)(3)
Substructure	1020.13(a)(1)(2)(3)(4)(5) [1/ 7/]	7	1020.13(d)(1)(2)(3)
Superstructure (except deck)	1020.13(a)(1)(2)(3)(5) [8/]	7	1020.13(d)(1)(2)
Deck Bridge Approach Slab	1020.13(a)(5)	7	1020.13(d)(1)(2) [17/]
Retaining Walls	1020.13(a)(1)(2)(3)(4)(5) [1/ 7/]	7	1020.13(d)(1)(2)
Pump Houses	1020.13(a)(1)(2)(3)(4)(5) [1/]	7	1020.13(d)(1)(2)
Culverts	1020.13(a)(1)(2)(3)(4)(5) [4/ 6/]	7	1020.13(d)(1)(2) [18/]
Other Incidental Concrete	1020.13(a)(1)(2)(3)(5)	3	1020.13(c)
Precast Concrete [11/]			
Bridge Slabs Piles and Pile Caps Other Structural Members	1020.13(a)(3)(5) [9/ 10/]	As [13/] Required	9/
All Other Precast Items	1020.13(a)(3)(4)(5) [2/ 9/ 10/]	As [14/] Required	9/
Precast, Prestressed Concrete [11/]			
All Items	1020(a)(3)(5) [9/ 10/]	Until Strand Tensioning is Released [15/]	9/

Notes-General:

1/ Type I, membrane curing only

2/ Type II, membrane curing only

3/ Type III, membrane curing only

4/ Type I, II and III membrane curing

5/ Membrane Curing will not be permitted between November 1 and April 15.

6/ The use of water to inundate foundations and footings, seal coats or the bottom slab of culverts is permissible when approved by the Engineer, provided the water temperature can be maintained at 45 °F (7 °C) or higher.

7/ Asphalt emulsion for waterproofing may be used in lieu of other curing methods when specified and permitted according to Article 503.18.

8/ On non-traffic surfaces which receive protective coat according to Article 503.19, a linseed oil emulsion curing compound may be used as a substitute for protective coat and other curing methods. The linseed oil emulsion curing compound will be permitted between April 16 and October 31 of the same year, provided it is applied with a mechanical sprayer according to Article 1101.09(b).

9/ Steam, supplemental heat, or insulated blankets (with or without steam/supplemental heat) are acceptable and shall be according to the Bureau of Materials and Physical Research's Policy Memorandum "Quality Control/Quality Assurance Program for Precast Concrete Products" and the "Manual for Fabrication of Precast, Prestressed Concrete Products".

10/ A moist room according to AASHTO M 201 is acceptable for curing.

11/ If curing is required and interrupted because of form removal for cast-in-place concrete items, precast concrete products, or precast prestressed concrete products, the curing shall be resumed within two hours from the start of the form removal.

12/ Curing maintained only until opening strength is attained for pavement patching, with a maximum curing period of three days. For bridge deck patching the curing period shall be three days if Class PP concrete is used and 7 days if Class BS concrete is used.

13/ The curing period shall end when the concrete has attained the mix design strength. The producer has the option to discontinue curing when the concrete has attained 80 percent of the mix design strength or after seven days. All strength test specimens shall remain with the units and shall be subjected to the same curing method and environmental condition as the units, until the time of testing.

14/ The producer shall determine the curing period or may elect to not cure the product. All strength test specimens shall remain with the units and shall be subjected to the same curing method and environmental condition as the units, until the time of testing.

15/ The producer has the option to continue curing after strand release.

16/ When structural steel or structural concrete is in place above slope wall, Article 1020.13(c) shall not apply. The protection method shall be according to Article 1020.13(d)(1).

17/ When Article 1020.13(d)(2) is used to protect the deck, the housing may enclose only the bottom and sides. The top surface shall be protected according to Article 1020.13(d)(1).

18/ For culverts having a waterway opening of 10 sq ft (1 sq m) or less, the culverts may be protected according to Article 1020.13(d)(3).

(a) Methods of Curing. Except as provided for in the Index Table of Curing and Protection of Concrete Construction, curing shall be accomplished by one of the following described methods. When water is required to wet the surface, it shall be applied as a fine spray so that it will not mar or pond on the surface. Except where otherwise specified, the curing period shall be at least 72 hours.

(1) Waterproof Paper Method. The surface of the concrete shall be covered with waterproof paper as soon as the concrete has hardened sufficiently to prevent marring the surface. The surface of the concrete shall be wetted immediately before the paper is placed. The blankets shall be lapped at least 12 in. (300 mm) end to end, and these laps shall be securely weighted with a windrow of earth, or other approved method, to form a closed joint. The same requirements shall apply to the longitudinal laps where separate strips are used for curing edges, except the lap shall be at least 9 in. (225 mm). The edges of the blanket shall be weighted securely with a continuous windrow of earth or any other means satisfactory to the Engineer to provide an air-tight cover. Any torn places or holes in the paper shall be repaired immediately by patches cemented over the openings, using a bituminous cement having a melting point of not less than 180 °F (82 °C). The blankets may be reused, provided they are air-tight and kept serviceable by proper repairs.

A longitudinal pleat shall be provided in the blanket to permit shrinkage where the width of the blanket is sufficient to cover the entire surface. The pleat will not be required where separate strips are used for the edges. Joints in the blanket shall be sewn or cemented together in such a manner that they will not separate during use.

(2) Polyethylene Sheeting Method. The surface of the concrete shall be covered with white polyethylene sheeting as soon as the concrete has hardened sufficiently to prevent marring the surface. The surface of the concrete shall be wetted immediately before the sheeting is placed. The edges of the sheeting shall be weighted securely with a continuous windrow of earth or any other means satisfactory to the Engineer to provide an air-tight cover. Adjoining sheets shall overlap not less than 12 in. (300 mm) and the laps shall be securely weighted with earth, or any other means satisfactory to the Engineer, to provide an air tight cover.

For surface and base course concrete, the polyethylene sheets shall be not less than 100 ft (30 m) in length nor longer than can be conveniently handled, and shall be of such width that, when in place, they will cover the full width of the surface, including the edges, except that separate strips may be used to cover the edges. Any tears or holes in the sheeting shall be repaired. When sheets are no longer serviceable as a single unit, the Contractor may select from such sheets and reuse those which will serve for further applications, provided two sheets are used as a single unit; however, the double sheet units will be rejected when the Engineer deems that they no longer provide an air tight cover.

(3) Wetted Burlap Method. The surface of the concrete shall be covered with wetted burlap blankets as soon as the concrete has hardened sufficiently to prevent marring the surface. The blankets shall overlap 6 in. (150 mm). At least two layers of wetted burlap shall be placed on the finished surface. The burlap shall be kept saturated by means of a mechanically operated sprinkling system. In place of the sprinkling system, at the Contractor's option, two layers of burlap covered with impermeable covering shall be used. The burlap shall be kept saturated with water. Plastic coated burlap may be substituted for one layer of burlap and impermeable covering.

The blankets shall be placed so that they are in contact with the edges of the concrete, and that portion of the material in contact with the edges shall be kept saturated with water.

(4) Membrane Curing Method. Membrane curing will not be permitted where a protective coat, concrete sealer, or waterproofing is to be applied, or at areas where rubbing or a normal finish is required, or at construction joints other than those necessary in pavement or base course. Concrete at these locations shall be cured by another method specified in Article 1020.13(a).

After all finishing work to the concrete surface has been completed, it shall be sealed with membrane curing compound of the type specified within ten minutes. The seal shall be maintained for the specified curing period. The edges of the concrete shall, likewise, be sealed within ten minutes after the forms are removed. Two separate applications, applied at least one minute apart, each at the rate of not less than 1 gal/250 sq ft (0.16 L/sq m) will be required upon the surfaces and edges of the concrete. These applications shall be made with the mechanical equipment specified. Type III compound shall be agitated immediately before and during the application.

At locations where the coating is discontinuous or where pin holes show or where the coating is damaged due to any cause and on areas adjacent to sawed joints, immediately after sawing is completed, an additional coating of membrane curing compound shall be applied at the above specified rate. The equipment used may be of the same type as that used for coating variable widths of pavement. Before the additional coating is applied adjacent to sawed joints, the cut faces of the joint shall be protected by inserting a suitable flexible material in the joint, or placing an

adhesive width of impermeable material over the joint, or by placing the permanent sealing compound in the joint. Material, other than the permanent sealing compound, used to protect cut faces of the joint, shall remain in place for the duration of the curing period. In lieu of applying the additional coating, the area of the sawed joint may be cured according to any other method permitted.

When rain occurs before an application of membrane curing compound has dried, and the coating is damaged, the Engineer may require another application be made in the same manner and at the same rate as the original coat. The Engineer may order curing by another method specified, if unsatisfactory results are obtained with membrane curing compound.

(5) Wetted Cotton Mat Method. After the surface of concrete has been textured or finished, it shall be covered immediately with dry or damp cotton mats. The cotton mats shall be placed in a manner which will not mar the concrete surface. A texture resulting from the cotton mat material is acceptable. The cotton mats shall then be wetted immediately and thoroughly soaked with a gentle spray of water. For bridge decks, a foot bridge shall be used to place and wet the cotton mats.

The cotton mats shall be maintained in a wetted condition until the concrete has hardened sufficiently to place soaker hoses without marring the concrete surface. The soaker hoses shall be placed on top of the cotton mats at a maximum 4 ft (1.2 m) spacing. The cotton mats shall be kept wet with a continuous supply of water for the remainder of the curing period. Other continuous wetting systems may be used if approved by the Engineer.

After placement of the soaker hoses, the cotton mats shall be covered with white polyethylene sheeting or burlap-polyethylene blankets.

For construction items other than bridge decks, soaker hoses or a continuous wetting system will not be required if the alternative method keeps the cotton mats wet. Periodic wetting of the cotton mats is acceptable.

For areas inaccessible to the cotton mats on bridge decks, curing shall be according to Article 1020.13(a)(3).

(b) Removing and Replacing Curing Covering. When curing methods specified above in Article 1020.13(a), (1), (2), or (3) are used for concrete pavement, the curing covering for each day's paving shall be removed to permit testing of the pavement surface with a profilograph or straightedge, as directed by the Engineer.

Immediately after testing, the surface of the pavement shall be wetted thoroughly and the curing coverings replaced. The top surface and the edges of the concrete shall not be left unprotected for a period of more than 1/2 hour.

(c) Protection of Concrete, Other Than Structures, From Low Air Temperatures. When the official National Weather Service forecast for the construction area predicts a low of 32 °F (0 °C), or lower, or if the actual temperature drops to 32 °F (0 °C), or lower, concrete less than 72 hours old shall be provided at least the following protection.

Minimum Temperature	Protection
25 – 32 °F (-4 – 0 °C)	Two layers of polyethylene sheeting, one layer of polyethylene and one layer of burlap, or two layers of waterproof paper.
Below 25 °F (-4 °C)	6 in. (150 mm) of straw covered with one layer of polyethylene sheeting or waterproof paper.

These protective covers shall remain in place until the concrete is at least 96 hours old. When straw is required on pavement cured with membrane curing compound, the compound shall be covered with a layer of burlap, polyethylene sheeting or waterproof paper before the straw is applied.

After September 15, there shall be available to the work within four hours, sufficient clean, dry straw to cover at least two days production. Additional straw shall be provided as needed to afford the protection required. Regardless of the precautions taken, the Contractor shall be responsible for protection of the concrete placed and any concrete damaged by cold temperatures shall be removed and replaced.

(d) Protection of Concrete Structures From Low Air Temperatures. When the official National Weather Service forecast for the construction area predicts a low below 45 °F (7 °C), or if the actual temperature drops below 45 °F (7 °C), concrete less than 72 hours old shall be provided protection. Concrete shall also be provided protection when placed during the winter period of December 1 through March 15. Concrete shall not be placed until the materials, facilities, and equipment for protection are approved by the Engineer.

When directed by the Engineer, the Contractor may be required to place concrete during the winter period. When winter construction is specified, the Contractor shall proceed with the construction, including excavation, pile driving, concrete, steel erection, and all appurtenant work required for the complete construction of the item, except at times when weather conditions make such operations impracticable.

Regardless of the precautions taken, the Contractor shall be responsible for protection of the concrete placed and any concrete damaged by cold temperatures shall be removed and replaced.

(1) Protection Method I. The concrete shall be completely covered with insulating material such as fiberglass, rock wool, or other approved commercial insulating material having the minimum thermal resistance R, as defined in ASTM C 168, for

the corresponding minimum dimension of the concrete unit being protected as shown in the following table.

Minimum Pour Dimension		Thermal Resistance R
in.	(mm)	
6 or less	(150 or less)	R=16
> 6 to 12	(> 150 to 300)	R=10
> 12 to 18	(> 300 to 450)	R=6
> 18	(> 450)	R=4

The insulating material manufacturer shall clearly mark the insulating material with the thermal resistance R value.

The insulating material shall be completely enclosed on sides and edges with an approved waterproof liner and shall be maintained in a serviceable condition. Any tears in the liner shall be repaired in a manner approved by the Engineer. The Contractor shall provide means for checking the temperature of the surface of the concrete during the protection period.

On formed surfaces, the insulating material shall be attached to the outside of the forms with wood cleats or other suitable means to prevent any circulation of air under the insulation and shall be in place before the concrete is placed. The blanket insulation shall be applied tightly against the forms. The edges and ends shall be attached so as to exclude air and moisture. If the blankets are provided with nailing flanges, the flanges shall be attached to the studs with cleats. Where tie rods or reinforcement bars protrude, the areas adjacent to the rods or bars shall be adequately protected in a manner satisfactory to the Engineer. Where practicable, the insulation shall overlap any previously placed concrete by at least 1 ft (300 mm). Insulation on the underside of floors on steel members shall cover the top flanges of supporting members. On horizontal surfaces, the insulating material shall be placed as soon as the concrete has set, so that the surface will not be marred and shall be covered with canvas or other waterproof covering. The insulating material shall remain in place for a period of seven days after the concrete is placed.

The Contractor may remove the forms, providing the temperature is 35 °F (2 °C) and rising and the Contractor is able to wrap the particular section within two hours from the time of the start of the form removal. The insulation shall remain in place for the remainder of the seven days curing period.

(2) Protection Method II. The concrete shall be enclosed in adequate housing and the air surrounding the concrete kept at a temperature of not less than 50 °F (10 °C) nor more than 80 °F (27 °C) for a period of seven days after the concrete is placed. The Contractor shall provide means for checking the temperature of the surface of the concrete or air temperature within the housing during the protection period. All exposed surfaces within the housing shall be cured according to the Index Table.

The Contractor shall provide adequate fire protection where heating is in progress and such protection shall be accessible at all times. The Contractor shall maintain labor to keep the heating equipment in continuous operation.

At the close of the heating period, the temperature shall be decreased to the approximate temperature of the outside air at a rate not to exceed 15 °F (8 °C) per 12 hour period, after which the housing maybe removed. The surface of the concrete shall be permitted to dry during the cooling period.

(3) Protection Method III. As soon as the surface is sufficiently set to prevent marring, the concrete shall be covered with 12 in. (300 mm) of loose, dry straw followed by a layer of impermeable covering. The edges of the covering shall be sealed to prevent circulation of air and prevent the cover from flapping or blowing. The protection shall remain in place until the concrete is seven days old. If construction operations require removal, the protection removed shall be replaced immediately after completion or suspension of such operations.

1020.14 Temperature Control for Placement. Temperature control for concrete placement shall be according to the following.

(a) Concrete other than Structures. Concrete may be placed when the air temperature is above 35 °F (2 °C) and rising, and concrete placement shall stop when the falling temperature reaches 40 °F (4 °C) or below, unless otherwise approved by the Engineer.

The temperature of concrete immediately before placement shall be a minimum of 50 °F (10 °C) and a maximum of 90 °F (32 °C). If concrete is pumped, the temperature of the concrete at point of placement shall be a minimum of 50 °F (10 °C) and a maximum of 90 °F (32 °C). A maximum concrete temperature shall not apply to Class PP concrete.

(b) Concrete in Structures. Concrete may be placed when the air temperature is above 40 °F (4 °C) and rising, and concrete placement shall stop when the falling temperature reaches 45 °F (7 °C) or below, unless otherwise approved by the Engineer.

The temperature of the concrete immediately before placement shall be a minimum of 50 °F (10 °C) and a maximum of 90 °F (32 °C). If concrete is pumped, the temperature of the concrete at point of placement shall be a minimum of 50 °F (10 °C) and a maximum of 90 °F (32 °C).

When insulated forms are used according to Article 1020.13(d)(1), the maximum temperature of the concrete mixture immediately before placement shall be 80 °F (25 °C).

When concrete is placed in contact with previously placed concrete, the temperature of the freshly mixed concrete may be increased to 80 °F (25 °C) by the Contractor to offset anticipated heat loss.

(c) All Classes of Concrete. Aggregates and water shall be heated or cooled uniformly and as necessary to produce concrete within the specified temperature limits. No frozen aggregates shall be used in the concrete.

(d) Temperature. The concrete temperature shall be determined according to Illinois Modified AASHTO T 309.

1020.15 Heat of Hydration Control for Concrete Structures. The Contractor shall control the heat of hydration for concrete structures when the least dimension for a drilled shaft, foundation, footing, substructure, or superstructure concrete pour exceeds 5.0 ft (1.5 m). The work shall be according to the following.

(a) Temperature Restrictions. The maximum temperature of the concrete after placement shall not exceed 150 °F (66 °C). The maximum temperature differential between the internal concrete core and concrete 2 to 3 in. (50 to 75 mm) from the exposed surface shall not exceed 35 °F (19 °C). The Contractor shall perform temperature monitoring to ensure compliance with the temperature restrictions.

(b) Thermal Control Plan. The Contractor shall provide a thermal control plan a minimum of 28 calendar days prior to concrete placement for review by the Engineer. Acceptance of the thermal control plan by the Engineer shall not preclude the Contractor from specification compliance, and from preventing cracks in the concrete. At a minimum, the thermal control plan shall provide detailed information on the following requested items and shall comply with the specific specifications indicated for each item.

(1) Concrete mix design(s) to be used. Grout mix design if post-cooling with embedded pipe.

The mix design requirements in Articles 1020.04 and 1020.05 shall be revised to include the following additional requirements to control the heat of hydration.

a. The concrete mixture should be uniformly graded and preference for larger size aggregate should be used in the mix design. Article 1004.02(d)(2) shall apply and information in the "Portland Cement Concrete Level III Technician Course – Manual of Instructions for Design of Concrete Mixtures" may be used to develop the uniformly graded mixture.

b. The following shall apply to all concrete except Class DS concrete or when self-consolidating concrete is desired. For central-mixed concrete, the Contractor shall have the option to develop a mixture with a minimum of 520 lbs/cu yd (309 kg/cu m) of cement and finely divided minerals summed together. For truck-mixed or shrink-mixed concrete, the Contractor shall have the option to develop a mixture with a minimum of 550 lbs/cu yd (326 kg/cu m) of cement and finely divided minerals summed together. A water-reducing or high range water-reducing admixture shall be used in the central mixed, truck-mixed or shrink-

mixed concrete mixture. For any mixture to be placed underwater, the minimum cement and finely divided minerals shall be 550 lbs/cu yd (326 kg/cu m) for central-mixed concrete, and 580 lbs/cu yd (344 kg/cu m) for truck-mixed or shrink-mixed concrete.

For Class DS concrete, CA 11 may be used. If CA 11 is used, the Contractor shall have the option to develop a mixture with a minimum cement and finely divided minerals of 605 lbs/cu yd (360 kg/cu m) summed together. If CA 11 is used and either Class DS concrete is placed underwater or a self-consolidating concrete mixture is desired, the Contractor shall have the option to develop a mixture with a minimum cement and finely divided minerals of 635 lbs/cu yd (378 kg/cu m) summed together.

c. The minimum portland cement content in the mixture shall be 375 lbs/cu yd (222 kg/cu m). When the total of organic processing additions, inorganic processing additions, and limestone addition exceed 5.0 percent in the cement, the minimum portland cement content in the mixture shall be 400 lbs/cu yd (237 kg/cu m). For a drilled shaft, foundation, footing, or substructure, the minimum portland cement may be reduced to as low as 330 lbs/cu yd (196 kg/cu m) if the concrete has adequate freeze/thaw durability. The Contractor shall provide freeze/thaw test results according to AASHTO T 161 Procedure A or B, and the relative dynamic modulus of elasticity of the mix design shall be a minimum of 80 percent. Freeze/thaw testing will not be required for concrete that will not be exposed to freezing and thawing conditions as determined by the Engineer.

d. The maximum cement replacement with fly ash shall be 40.0 percent. The maximum cement replacement with ground granulated blast-furnace slag shall be 65.0 percent. When cement replacement with ground granulated blast-furnace slag exceeds 35.0 percent, only Grade 100 shall be used.

e. The mixture may contain a maximum of two finely divided minerals. The finely divided mineral in portland-pozzolan cement or portland blast-furnace slag cement shall count toward the total number of finely divided minerals allowed. The finely divided minerals shall constitute a maximum of 65.0 percent of the total cement plus finely divided minerals. The fly ash portion shall not exceed 40.0 percent. The ground granulated blast-furnace slag portion shall not exceed 65.0 percent. The microsilica or high-reactivity metakaolin portion used together or separately shall not exceed 5.0 percent.

f. The time to obtain the specified strength may be increased to a maximum 56 days, provided the curing period specified in Article 1020.13 is increased to a minimum of 14 days.

The minimum grout strength for filling embedded pipe shall be as specified for the concrete, and testing shall be according to AASHTO T 106.

(2) The selected mathematical method for evaluating heat of hydration thermal effects, which shall include the calculated adiabatic temperature rise, calculated maximum concrete temperature, and calculated maximum temperature differential between the internal concrete core and concrete 2 to 3 in. (50 to 75 mm) from the exposed surface. The time when the maximum concrete temperature and maximum temperature differential will occur is required.

Acceptable mathematical methods include ACI 207.2R "Report on Thermal and Volume Change Effects on Cracking of Mass Concrete" as well as other proprietary methods. The Contractor shall perform heat of hydration testing on the cement and finely divided minerals to be used in the concrete mixture. The test shall be according to ASTM C 186 or other applicable test methods, and the result for heat shall be used in the equation to calculate adiabatic temperature rise. Other required test parameters for the mathematical model may be assumed if appropriate.

The Contractor has the option to propose a higher maximum temperature differential between the internal concrete core and concrete 2 to 3 in. (50 to 75 mm) from the exposed surface, but the proposed value shall not exceed 50 °F (28 °C). In addition, based on strength gain of the concrete, multiple maximum temperature differentials at different times may be proposed. The proposed value shall be justified through a mathematical method.

(3) Proposed maximum concrete temperature or temperature range prior to placement.

Article 1020.14 shall apply except a minimum 40 °F (4 °C) concrete temperature will be permitted.

(4) Pre-cooling, post-cooling, and surface insulation methods that will be used to ensure the concrete will comply with the specified maximum temperature and specified or proposed temperature differential. For reinforcement that extends beyond the limits of the pour, the Contractor shall indicate if the reinforcement is required to be covered with insulation.

Refer to ACI 207.4R "Cooling and Insulating Systems for Mass Concrete" for acceptable methods that will be permitted. If embedded pipe is used for post-cooling, the material shall be polyvinyl chloride or polyethylene. The embedded pipe system shall be properly supported, and the Contractor shall subsequently inspect glued joints to ensure they are able to withstand free falling concrete. The embedded pipe system shall be leak tested after inspection of the glued joints, and prior to the concrete placement. The leak test shall be performed at maximum service pressure or higher for a minimum of 15 minutes. All leaks shall be repaired. The embedded pipe cooling water may be from natural sources such as streams and rivers, but shall be filtered to prevent system stoppages. When the embedded pipe is no longer needed, the surface connections to the pipe shall be removed to a depth of 4 in. (100 mm) below the surface of the concrete. The remaining pipe shall be

completely filled with grout. The 4 in. (100 mm) deep concrete hole shall be filled with nonshrink grout. Form and insulation removal shall be done in a manner to prevent cracking and ensure the maximum temperature differential is maintained. Insulation shall be in good condition as determined by the Engineer and properly attached.

(5) Dimensions of each concrete pour, location of construction joints, placement operations, pour pattern, lift heights, and time delays between lifts.

Refer to ACI 207.1R "Guide to Mass Concrete" for acceptable placement operations that will be permitted.

(6) Type of temperature monitoring system, the number of temperature sensors, and location of sensors.

A minimum of two independent temperature monitoring systems and corresponding sensors shall be used.

The temperature monitoring system shall have a minimum temperature range of 32 °F (0 °C) to 212 °F (100 °C), an accuracy of ± 2 °F (± 1 °C), and be able to automatically record temperatures without external power. Temperature monitoring shall begin once the sensor is encased in concrete, and with a maximum interval of one hour. Temperature monitoring may be discontinued after the maximum concrete temperature has been reached, post-cooling is no longer required, and the maximum temperature differential between the internal concrete core and the ambient air temperature does not exceed 35 °F (19 °C). The Contractor has the option to select a higher maximum temperature differential, but the proposed value shall not exceed 50 °F (28 °C). The proposed value shall be justified through a mathematical method.

At a minimum, a temperature sensor shall be located at the theoretical hottest portion of the concrete, normally the geometric center, and at the exterior face that will provide the maximum temperature differential. At the exterior face, the sensor shall be located 2 to 3 in. (50 to 75 mm) from the surface of the concrete. Sensors shall also be located a minimum of 1 in. (25 mm) away from reinforcement, and equidistant between cooling pipes if either applies. A sensor will also be required to measure ambient air temperature. The entrant/exit cooling water temperature for embedded pipe shall also be monitored.

Temperature monitoring results shall be provided to the Engineer a minimum of once each day and whenever requested by the Engineer. The report may be electronic or hard copy. The report shall indicate the location of each sensor, the temperature recorded, and the time recorded. The report shall be for all sensors and shall include ambient air temperature and entrant/exit cooling water temperatures. The temperature data in the report may be provided in tabular or graphical format, and the report shall indicate any corrective actions during the monitoring period. At the

completion of the monitoring period, the Contractor shall provide the Engineer a final report that includes all temperature data and corrective actions.

(7) Indicate contingency operations to be used if the maximum temperature or temperature differential of the concrete is reached after placement.

(c) Temperature Restriction Violations. If the maximum temperature of the concrete after placement exceeds 150 °F (66 °C), but is equal to or less than 158 °F (70 °C), the concrete will be accepted if no cracking or other unacceptable defects are identified. If cracking or unacceptable defects are identified, Article 105.03 shall apply. If the concrete temperature exceeds 158 °F (70 °C), Article 105.03 shall apply.

If a temperature differential between the internal concrete core and concrete 2 to 3 in. (50 to 75 mm) from the exposed surface exceeds the specified or proposed maximum value allowed, the concrete will be accepted if no cracking or other unacceptable defects are identified. If unacceptable defects are identified, Article 105.03 shall apply.

When the maximum 150 °F (66 °C) concrete temperature or the maximum allowed temperature differential is violated, the Contractor shall implement corrective action prior to the next pour. In addition, the Engineer reserves the right to request a new thermal control plan for acceptance before the Contractor is allowed to pour again.

(d) Inspection and Repair of Cracks. The Engineer will inspect the concrete for cracks after the temperature monitoring is discontinued, and the Contractor shall provide access for the Engineer to do the inspection. A crack may require repair by the Contractor as determined by the Engineer. The Contractor shall be responsible for the repair of all cracks. Protective coat or a concrete sealer shall be applied to a crack less than 0.007 in. (0.18 mm) in width. A crack that is 0.007 in. (0.18 mm) or greater shall be pressure injected with epoxy according to Section 590.

80279

QUALITY CONTROL/QUALITY ASSURANCE OF CONCRETE MIXTURES (BDE)

Effective: January 1, 2012
Revised: January 1, 2013

Add the following to Section 1020 of the Standard Specifications:

"**1020.16 Quality Control/Quality Assurance of Concrete Mixtures.** This Article specifies the quality control responsibilities of the Contractor for concrete mixtures (except Class PC and PS concrete), cement aggregate mixture II, and controlled low-strength material incorporated in the project, and defines the quality assurance and acceptance responsibilities of the Engineer.

A list of quality control/quality assurance (QC/QA) documents is provided in Article 1020.16(g), Schedule D.

A Level I Portland Cement Concrete (PCC) Technician shall be defined as an individual who has successfully completed the Department's training for concrete testing.

A Level II Portland Cement Concrete (PCC) Technician shall be defined as an individual who has successfully completed the Department's training for concrete proportioning.

A Level III Portland Cement Concrete (PCC) Technician shall be defined as an individual who has successfully completed the Department's training for concrete mix design.

A Concrete Tester shall be defined as an individual who has successfully completed the Department's training to assist with concrete testing and is monitored on a daily basis.

Aggregate Technician shall be defined as an individual who has successfully completed the Department's training for gradation testing involving aggregate production and mixtures.

Mixture Aggregate Technician shall be defined as an individual who has successfully completed the Department's training for gradation testing involving mixtures.

Gradation Technician shall be defined as an individual who has successfully completed the Department's training to assist with gradation testing and is monitored on a daily basis.

(a) Equipment/Laboratory. The Contractor shall provide a laboratory and test equipment to perform their quality control testing.

The laboratory shall be of sufficient size and be furnished with the necessary equipment, supplies, and current published test methods for adequately and safely performing all required tests. The laboratory will be approved by the Engineer according to the current Bureau of Materials and Physical Research Policy Memorandum "Minimum Private Laboratory Requirements for Construction Materials Testing or Mix Design". Production of a mixture shall not begin until the Engineer provides written approval of the laboratory.

The Contractor shall refer to the Department's "Required Sampling and Testing Equipment for Concrete" for equipment requirements.

Test equipment shall be maintained and calibrated as required by the appropriate test method, and when required by the Engineer. This information shall be documented on the Department's "Calibration of Concrete Testing Equipment" form.

Test equipment used to determine compressive or flexural strength shall be calibrated each 12 month period by an independent agency, using calibration equipment traceable to the National Institute of Standards and Technology (NIST). The Contractor shall have the calibration documentation available at the test equipment location.

The Engineer will have unrestricted access to the plant and laboratory at any time to inspect measuring and testing equipment, and will notify the Contractor of any deficiencies. Defective equipment shall be immediately repaired or replaced by the Contractor.

(b) Quality Control Plan. The Contractor shall submit, in writing, a proposed Quality Control (QC) Plan to the Engineer. The QC Plan shall be submitted a minimum of 45 calendar days prior to the production of a mixture. The QC Plan shall address the quality control of the concrete, cement aggregate mixture II, and controlled low-strength material incorporated in the project. The Contractor shall refer to the Department's "Model Quality Control Plan for Concrete Production" to prepare a QC Plan. The Engineer will respond in writing to the Contractor's proposed QC Plan within 15 calendar days of receipt.

Production of a mixture shall not begin until the Engineer provides written approval of the QC Plan. The approved QC Plan shall become a part of the contract between the Department and the Contractor, but shall not be construed as acceptance of any mixture produced.

The QC Plan may be amended during the progress of the work, by either party, subject to mutual agreement. The Engineer will respond in writing to a Contractor's proposed QC Plan amendment within 15 calendar days of receipt. The response will indicate the approval or denial of the Contractor's proposed QC Plan amendment.

(c) Quality Control by Contractor. The Contractor shall perform quality control inspection, sampling, testing, and documentation to meet contract requirements. Quality control includes the recognition of obvious defects and their immediate correction. Quality control also includes appropriate action when passing test results are near specification limits, or to resolve test result differences with the Engineer. Quality control may require increased testing, communication of test results to the plant or the jobsite, modification of operations, suspension of mixture production, rejection of material, or other actions as appropriate. The Engineer shall be immediately notified of any failing tests and subsequent remedial action. Passing tests shall be reported no later than the start of the next work day.

When a mixture does not comply with specifications, the Contractor shall reject the material; unless the Engineer accepts the material for incorporation in the work, according to Article 105.03.

(1) Personnel Requirements. The Contractor shall provide a Quality Control (QC) Manager who will have overall responsibility and authority for quality control. The jobsite and plant personnel shall be able to contact the QC Manager by cellular phone, two-way radio or other methods approved by the Engineer.

The QC Manager shall visit the jobsite a minimum of once a week. A visit shall be performed the day of a bridge deck pour, the day a non-routine mixture is placed as determined by the Engineer, or the day a plant is anticipated to produce more than 1000 cu yd (765 cu m). Any of the three required visits may be used to meet the once per week minimum requirement.

The Contractor shall provide personnel to perform the required inspections, sampling, testing and documentation in a timely manner. The Contractor shall refer to the Department's "Qualifications and Duties of Concrete Quality Control Personnel" document.

A Level I PCC Technician shall be provided at the jobsite during mixture production and placement, and may supervise concurrent pours on the project. For concurrent pours, a minimum of one Concrete Tester shall be required at each pour location. If the Level I PCC Technician is at one of the pour locations, a Concrete Tester is still required at the same location. Each Concrete Tester shall be able to contact the Level I PCC Technician by cellular phone, two-way radio or other methods approved by the Engineer. A single Level I PCC Technician shall not supervise concurrent pours for multiple contracts.

A Level II PCC Technician shall be provided at the plant, or shall be available, during mixture production and placement. A Level II PCC Technician may supervise a maximum of three plants. Whenever the Level II PCC Technician is not at the plant during mixture production and placement, a Concrete Tester or Level I PCC Technician shall be present at the plant to perform any necessary concrete tests. The Concrete Tester, Level I PCC Technician, or other individual shall also be trained to perform any necessary aggregate moisture tests, if the Level II PCC Technician is not at the plant during mixture production and placement. The Concrete Tester, Level I PCC Technician, plant personnel, and jobsite personnel shall have the ability to contact the Level II PCC Technician by cellular phone, two-way radio, or other methods approved by the Engineer.

For a mixture which is produced and placed with a mobile portland cement concrete plant as defined in Article 1103.04, a Level II PCC Technician shall be provided. The Level II PCC Technician shall be present at all times during mixture production and placement. However, the Level II PCC Technician may request to be available if

operations are satisfactory. Approval shall be obtained from the Engineer, and jobsite personnel shall have the ability to contact the Level II PCC Technician by cellular phone, two-way radio, or other methods approved by the Engineer.

A Concrete Tester, Mixture Aggregate Technician, and Aggregate Technician may provide assistance with sampling and testing. A Gradation Technician may provide assistance with testing. A Concrete Tester shall be supervised by a Level I or Level II PCC Technician. A Gradation Technician shall be supervised by a Level II PCC Technician, Mixture Aggregate Technician, or Aggregate Technician.

(2) Required Plant Tests. Sampling and testing shall be performed at the plant, or at a location approved by the Engineer, to control the production of a mixture. The required minimum Contractor plant sampling and testing is indicated in Article 1020.16(g) Schedule A.

(3) Required Field Tests. Sampling and testing shall be performed at the jobsite to control the production of a mixture, and to comply with specifications for placement. For standard curing, after initial curing, and for strength testing; the location shall be approved by the Engineer. The required minimum Contractor jobsite sampling and testing is indicated in Article 1020.16(g), Schedule B.

(d) Quality Assurance by Engineer. The Engineer will perform quality assurance tests on independent samples and split samples. An independent sample is a field sample obtained and tested by only one party. A split sample is one of two equal portions of a field sample, where two parties each receive one portion for testing. The Engineer may request the Contractor to obtain a split sample. Aggregate split samples and any failing strength specimen shall be retained until permission is given by the Engineer for disposal. The results of all quality assurance tests by the Engineer will be made available to the Contractor. However, Contractor split sample test results shall be provided to the Engineer before Department test results are revealed. The Engineer's quality assurance independent sample and split sample testing is indicated in Article 1020.16(g), Schedule C.

(1) Strength Testing. For strength testing, Article 1020.09 shall apply, except the Contractor and Engineer strength specimens may be placed in the same field curing box for initial curing and may be cured in the same water storage tank for final curing.

(2) Comparing Test Results. Differences between the Engineer's and the Contractor's split sample test results will be considered reasonable if within the following limits:

Test Parameter	Acceptable Limits of Precision
Slump	0.75 in. (20 mm)
Air Content	0.9%
Compressive Strength	900 psi (6200 kPa)

Flexural Strength	90 psi (620 kPa)
Slump Flow (Self-Consolidating Concrete (SCC))	1.5 in. (40 mm)
Visual Stability Index (SCC)	Not Applicable
J-Ring (SCC)	1.5 in. (40 mm)
L-Box (SCC)	10 %
Hardened Visual Stability Index (SCC)	Not Applicable
Dynamic Segregation Index (SCC)	1.0 %
Flow (Controlled Low-Strength Material (CLSM))	1.5 in. (40 mm)
Strength (Controlled Low-Strength Material (CLSM))	40 psi (275 kPa)
Aggregate Gradation	See "Guideline for Sample Comparison" in Appendix "A" of the Manual of Test Procedures for Materials.

When acceptable limits of precision have been met, but only one party is within specification limits, the failing test shall be resolved before the material may be considered for acceptance.

(3)Test Results and Specification Limits.

a. Split Sample Testing. If either the Engineer's or the Contractor's split sample test result is not within specification limits, and the other party is within specification limits; immediate retests on a split sample shall be performed for slump, air content, slump flow, visual stability index, J-Ring, L-Box, dynamic segregation index, flow (CLSM), or aggregate gradation. A passing retest result by each party will require no further action. If either the Engineer's or Contractor's slump, air content, slump flow, visual stability index, J-Ring, L-Box, dynamic segregation index, flow (CLSM), or aggregate gradation split sample retest result is a failure; or if either the Engineer's or Contractor's strength or hardened visual stability index test result is a failure, and the other party is within specification limits; the following actions shall be initiated to investigate the test failure:

1. The Engineer and the Contractor shall investigate the sampling method, test procedure, equipment condition, equipment calibration, and other factors.

2. The Engineer or the Contractor shall replace test equipment, as determined by the Engineer.

3. The Engineer and the Contractor shall perform additional testing on split samples, as determined by the Engineer.

For aggregate gradation, jobsite slump, jobsite air content, jobsite slump flow, jobsite visual stability index, jobsite J-Ring, jobsite L-Box, jobsite dynamic segregation index, and jobsite flow (CLSM); if the failing split sample test result is not resolved according to 1., 2., or 3., and the mixture has not been placed, the Contractor shall reject the material; unless the Engineer accepts the material for

incorporation in the work according to Article 105.03. If the mixture has already been placed, or if a failing strength or hardened visual stability index test result is not resolved according to 1., 2., or 3., the material will be considered unacceptable.

If a continued trend of difference exists between the Engineer's and the Contractor's split sample test results, or if split sample test results exceed the acceptable limits of precision, the Engineer and the Contractor shall investigate according to items 1., 2., and 3.

b. Independent Sample Testing. For aggregate gradation, jobsite slump, jobsite air content jobsite slump flow, jobsite visual stability index, jobsite J-Ring, jobsite L-Box, jobsite dynamic segregation index, jobsite flow (CLSM); if the result of a quality assurance test on a sample independently obtained by the Engineer is not within specification limits, and the mixture has not been placed, the Contractor shall reject the material, unless the Engineer accepts the material for incorporation in the work according to Article 105.03. If the mixture has already been placed or the Engineer obtains a failing strength or hardened visual stability index test result, the material will be considered unacceptable.

(e) Acceptance by the Engineer. Final acceptance will be based on the Standard Specifications and the following:

(1) The Contractor's compliance with all contract documents for quality control.

(2) Validation of Contractor quality control test results by comparison with the Engineer's quality assurance test results using split samples. Any quality control or quality assurance test determined to be flawed may be declared invalid only when reviewed and approved by the Engineer. The Engineer will declare a test result invalid only if it is proven that improper sampling or testing occurred. The test result is to be recorded and the reason for declaring the test invalid will be provided by the Engineer.

(3) Comparison of the Engineer's quality assurance test results with specification limits using samples independently obtained by the Engineer.

The Engineer may suspend mixture production, reject materials, or take other appropriate action if the Contractor does not control the quality of concrete, cement aggregate mixture II, or controlled low-strength material for acceptance. The decision will be determined according to (1), (2), or (3).

(f) Documentation.

(1) Records. The Contractor shall be responsible for documenting all observations, inspections, adjustments to the mix design, test results, retest results, and corrective actions in a bound hardback field book, bound hardback diary, or appropriate

Department form, which shall become the property of the Department. The documentation shall include a method to compare the Engineer's test results with the Contractor's results. The Contractor shall be responsible for the maintenance of all permanent records whether obtained by the Contractor, the consultants, the subcontractors, or the producer of the mixture. The Contractor shall provide the Engineer full access to all documentation throughout the progress of the work.

The Department's form MI 504M, form BMPR MI654, and form BMPR MI655 shall be completed by the Contractor, and shall be submitted to the Engineer weekly or as required by the Engineer. A correctly completed form MI 504M, form BMPR MI654, and form BMPR MI655 are required to authorize payment by the Engineer, for applicable pay items.

(2) Delivery Truck Ticket. The following information shall be recorded on each delivery ticket or in a bound hardback field book: initial revolution counter reading (final reading optional) at the jobsite, if the mixture is truck-mixed; time discharged at the jobsite; total amount of each admixture added at the jobsite; and total amount of water added at the jobsite.

(g) Basis of Payment and Schedules. Quality Control/Quality Assurance of portland cement concrete mixtures will not be paid for separately, but shall be considered as included in the cost of the various concrete contract items.

SCHEDULE A

CONTRACTOR PLANT SAMPLING AND TESTING			
Item	Test	Frequency	IL Modified AASHTO or Department Test Method [1/]
Aggregates (Arriving at Plant)	Gradation [2/]	As needed to check source for each gradation number	2, 11, 27, and 248
Aggregates (Stored at Plant in Stockpiles or Bins)	Gradation [2/]	2,500 cu yd (1,900 cu m) for each gradation number [3/]	2, 11, 27, and 248
Aggregates (Stored at Plant in Stockpiles or Bins)	Moisture [4/]: Fine Aggregate	Once per week for moisture sensor, otherwise daily for each gradation number	Flask, Dunagan, Pychnometer Jar, or 255
	Moisture [4/]: Coarse Aggregate	As needed to control production for each gradation number	Dunagan, Pychnometer Jar, or 255
Mixture [5/]	Slump Air Content Unit Weight / Yield Slump Flow (SCC) Visual Stability Index (SCC) J-Ring (SCC) [6/] L-Box (SCC) [6/] Temperature	As needed to control production	T 141 and T 119 T 141 and T 152 or T 196 T 141 and T 121 SCC-1 and SCC-2 SCC-1 and SCC-2 SCC-1 and SCC-3 SCC-1 and SCC-4 T 141 and T 309
Mixture (CLSM) [7/]	Flow Air Content Temperature	As needed to control production	Illinois Test Procedure 307

1/ Refer to the Department's "Manual of Test Procedures for Materials".

2/ All gradation tests shall be washed. Testing shall be completed no later than 24 hours after the aggregate has been sampled.

3/ One per week (Sunday through Saturday) minimum unless the stockpile has not received additional aggregate material since the previous test.

One per day minimum for a bridge deck pour unless the stockpile has not received additional aggregate material since the previous test. The sample shall be taken and testing completed prior to the pour. The bridge deck aggregate sample may be taken the day before the pour or as approved by the Engineer.

4/ If the moisture test and moisture sensor disagree by more than 0.5 percent, retest. If the difference remains, adjust the moisture sensor to an average of two or more moisture tests. The Department's "Water/Cement Ratio Worksheet" form shall be completed when applicable.

5/ The Contractor may also perform strength testing according to Illinois Modified AASHTO T 141, T 23, and T 22 or T 177; or water content testing according to Illinois Modified AASHTO T 318.

The Contractor may also perform other available self-consolidating concrete (SCC) tests at the plant to control mixture production.

6/ The Contractor shall select the J-Ring or L-Box test for plant sampling and testing.

7/ The Contractor may also perform strength testing according to Illinois Test Procedure 307.

SCHEDULE B

CONTRACTOR JOBSITE SAMPLING & TESTING [1/]			
Item	Measured Property	Random Sample Testing Frequency per Mix Design and per Plant [2/]	IL Modified AASHTO Test Method
Pavement, Shoulder, Base Course, Base Course Widening, Driveway Pavement, Railroad Crossing, Cement Aggregate Mixture II	Slump [3/ 4/]	1 per 500 cu yd (400 cu m) or minimum 1/day	T 141 and T 119
	Air Content [3/ 5/ 6/]	1 per 100 cu yd (80 cu m) or minimum 1/day	T 141 and T 152 or T 196
	Compressive Strength [7/ 8/] or Flexural Strength [7/ 8/]	1 per 1250 cu yd (1000 cu m) or minimum 1/day	T 141, T 22 and T 23 or T 141, T 177 and T 23
Bridge Approach Slab [9/], Bridge Deck [9/], Bridge Deck Overlay [9/], Superstructure [9/], Substructure, Culvert, Miscellaneous Drainage Structures, Retaining Wall, Building Wall, Drilled Shaft Pile & Encasement Footing, Foundation, Pavement Patching, Structural Repairs	Slump [3/ 4/]	1 per 50 cu yd (40 cu m) or minimum 1/day	T 141 and T 119
	Air Content [3/ 5/ 6/]	1 per 50 cu yd (40 cu m) or minimum 1/day	T 141 and T 152 or T 196
	Compressive Strength [7/ 8/] or Flexural Strength [7/ 8/]	1 per 250 cu yd (200 cu m) or minimum 1/day	T 141, T 22 and T 23 or T 141, T 177 and T 23
Seal Coat	Slump [3/]	1 per 250 cu yd (200 cu m) or minimum 1/day	T 141 and T 119
	Air Content [3/ 5/ 6/]	1 per 250 cu yd (200 cu m) or minimum 1/day when air is entrained	T 141 and T 152 or T 196
	Compressive Strength [7/ 8/] or Flexural Strength [7/ 8/]	1 per 250 cu yd (200 cu m) or minimum 1/day	T 141, T 22 and T 23 or T 141, T 177 and T 23

CONTRACTOR JOBSITE SAMPLING & TESTING [1/]			
Curb, Gutter, Median, Barrier, Sidewalk, Slope Wall, Paved Ditch, Fabric Formed Concrete Revetment Mat [10/], Miscellaneous Items, Incidental Items	Slump [3/ 4/]	1 per 100 cu yd (80 cu m) or minimum 1/day	T 141 and T 119
	Air Content [3/ 5/ 6/]	1 per 50 cu yd (40 cu m) or minimum 1/day	T 141 and T 152 or T 196
	Compressive Strength [7/ 8/] or Flexural Strength [7/ 8/]	1 per 400 cu yd (300 cu m) or minimum 1/day	T 141, T 22 and T 23 or T 141, T 177 and T 23
The Item will use a Self-Consolidating Concrete Mixture	Slump Flow [3/] VSI [3/] J-Ring [3/ 11/] L-Box [3/ 11/]	Perform at same frequency that is specified for the Item's slump	SCC-1 & SCC-2 SCC-1 & SCC-2 SCC-1 & SCC-3 SCC-1 & SCC-4
The Item will use a Self-Consolidating Concrete Mixture	HVSI [12/]	Minimum 1/day at start of production for that day	SCC-1 and SCC-6
The Item will use a Self-Consolidating Concrete Mixture	Dynamic Segregation Index (DSI)	Minimum 1/week at start of production for that week	SCC-1 and SCC-8 (Option C)
The Item will use a Self-Consolidating Concrete Mixture	Air Content [3/ 5/ 6/]	Perform at same frequency that is specified for the Item's air content	SCC-1 and T 152 or T 196
The Item will use a Self-Consolidating Concrete Mixture	Compressive Strength 7/ 8/ or Flexural Strength [7/ 8/]	Perform at same frequency that is specified for the Item's strength	SCC-1, T 22 and T 23 or SCC-1, T 177 and T 23
All	Temperature [3/]	As needed to control production	T 141 and T 309
Controlled Low-Strength Material (CLSM)	Flow, Air Content, Compressive Strength (28-day) [13/], and Temperature	First truck load delivered and as needed to control production thereafter	Illinois Test Procedure 307

1/ Sampling and testing of small quantities of curb, gutter, median, barrier, sidewalk, slope wall, paved ditch, miscellaneous items, and incidental items may be waived by the Engineer if requested by the Contractor. However, quality control personnel are still required according to Article 1020.16(c)(1) The Contractor shall also provide recent evidence that similar material has been found to be satisfactory under normal sampling and testing procedures. The total quantity that may be waived for testing shall not exceed 100 cu yd (76 cu m) per contract.

If the Contractor's or Engineer's test result for any jobsite mixture test is not within the specification limits, all subsequent truck loads delivered shall be tested by the Contractor until the problem is corrected.

2/ If one mix design is being used for several construction items during a day's production, one testing frequency may be selected to include all items. The construction items shall have the same slump, air content, and water/cement ratio specifications. For self-consolidating concrete, the construction items shall have the same slump flow, visual stability index, J-Ring, L-Box, air content, and water/cement ratio specifications. The frequency selected shall equal or exceed the testing required for the construction item.

One sufficiently sized sample shall be taken to perform the required test(s). Random numbers shall be determined according to the Department's "Method for Obtaining Random Samples for Concrete". The Engineer will provide random sample locations.

3/ The temperature, slump, and air content tests shall be performed on the first truck load delivered, for each pour. For self consolidating concrete, the temperature, slump flow, visual stability index, J-Ring or L-Box, and air content tests shall be performed on the first truck load delivered, for each pour. Unless a random sample is required for the first truck load, testing the first truck load does not satisfy random sampling requirements.

4/ The slump random sample testing frequency shall be a minimum 1/day for a construction item which is slipformed.

5/ If a pump or conveyor is used for placement, a correction factor shall be established to allow for a loss of air content during transport. The first three truck loads delivered shall be tested, before and after transport by the pump or conveyor, to establish the correction factor. Once the correction is determined, it shall be re-checked after an additional 50 cu yd (40 cu m) is pumped, or an additional 100 cu yd (80 cu m) is conveyored. This shall continue throughout the pour. If the re-check indicates the correction factor has changed, a minimum of two truckloads is required to re-establish the correction factor. The correction factor shall also be re-established when significant changes in temperature, distance, pump or conveyor arrangement, and other factors have occurred. If the correction factor is >3.0 percent, the Contractor shall take corrective action to reduce the loss of air content during transport by the pump or conveyor. The Contractor shall record all air content test results, correction factors and corrected air contents. The corrected air content shall be reported on form BMPR MI654.

6/ If the Contractor's or Engineer's air content test result is within the specification limits, and 0.2 percent or closer to either limit, the next truck load delivered shall be tested by the Contractor. For example, if the specified air content range is 5.0 to 8.0 percent and the test result is 5.0, 5.1, 5.2, 7.8, 7.9 or 8.0 percent, the next truck shall be tested by the Contractor.

7/ The test of record for strength shall be the day indicated in Article 1020.04. For cement aggregate mixture II, a strength requirement is not specified and testing is not required. Additional strength testing to determine early falsework and form removal, early pavement or bridge opening to traffic, or to monitor strengths is at the discretion of the Contractor. Strength shall be defined as the average of at least two cylinder or two beam breaks for field tests.

8/ In addition to the strength test, a slump test, air content test, and temperature test shall be performed on the same sample. For self-consolidating concrete, a slump flow test, visual stability index test, J-Ring or L-Box test, air content test, and temperature test shall be performed on the same sample as the strength test. For mixtures pumped or conveyored, the Contractor shall sample according to Illinois Modified AASHTO T 141.

9/ The air content test will be required for each delivered truck load.

10/ For fabric formed concrete revetment mat, the slump test is not required and the flexural strength test is not applicable.

11/ The Contractor shall select the J-Ring or L-Box test for jobsite sampling and testing.

12/ In addition to the hardened visual stability index (HVSI) test, a slump flow test, visual stability index (VSI) test, J-Ring or L-Box test, air content test, and temperature test shall be performed on the same sample. The Contractor shall retain all hardened visual stability index cut cylinder specimens until the Engineer notifies the Contractor that the specimens may be discarded.

13/ The test of record for strength shall be the day indicated in Article 1019.04. In addition to the strength test, a flow test, air content test, and temperature test shall be performed on the same sample. The strength test may be waived by the Engineer if future removal of the material is not a concern.

SCHEDULE C

ENGINEER QUALITY ASSURANCE INDEPENDENT SAMPLE TESTING		
Location	Measured Property	Testing Frequency [1/]
Plant	Gradation of aggregates stored in stockpiles or bins, Slump and Air Content	As determined by the Engineer.
Jobsite	Slump, Air Content, Slump Flow, Visual Stability Index, J-Ring, L-Box, Hardened Visual Stability Index, Dynamic Segregation Index and Strength	As determined by the Engineer.
	Flow, Air Content, Strength (28-day), and Dynamic Cone Penetration for Controlled Low-Strength Material (CLSM)	As determined by the Engineer

ENGINEER QUALITY ASSURANCE SPLIT SAMPLE TESTING		
Location	Measured Property	Testing Frequency [1/]
Plant	Gradation of aggregates stored in stockpiles or bins [2/]	At the beginning of the project, the first test performed by the Contractor. Thereafter, a minimum of 10% of total tests required of the Contractor will be performed per aggregate gradation number and per plant.
	Slump and Air Content	As determined by the Engineer.
Jobsite	Slump [2/], Air Content [2/ 3/], Slump Flow [2/], Visual Stability Index [2/], J-Ring [2/] and L-box [2/]	At the beginning of the project, the first three tests performed by the Contractor. Thereafter, a minimum of 20% of total tests required of the Contractor will be performed per plant, which will include a minimum of one test per mix design.
	Hardened Visual Stability Index [2/]	As determined by the Engineer.
	Dynamic Segregation Index [2/]	As determined by the Engineer.
	Strength [2/]	At the beginning of the project, the first test performed by the Contractor. Thereafter, a minimum of 20% of total tests required of the Contractor will be performed per plant, which will include a minimum of one test per mix design.
	Flow, Air Content, and Strength (28-day) for Controlled Low-Strength Material (CLSM)	As determined by the Engineer.

1/ The Engineer will perform the testing throughout the period of quality control testing by the Contractor.

2/ The Engineer will witness and take immediate possession of or otherwise secure the Department's split sample obtained by the Contractor.

3/ Before transport by pump or conveyor, a minimum of 20 percent of total tests required of the Contractor will be performed per mix design and per plant. After transport by pump or conveyor, a minimum of 20 percent of total tests required of the Contractor will be performed per mix design and per plant.

SCHEDULE D

CONCRETE QUALITY CONTROL AND QUALITY ASSURANCE DOCUMENTS

(a) Model Quality Control Plan for Concrete Production (*)

(b) Qualifications and Duties of Concrete Quality Control Personnel (*)

(c) Development of Gradation Bands on Incoming Aggregate at Mix Plants (*)

(d) Required Sampling and Testing Equipment for Concrete (*)

(e) Method for Obtaining Random Samples for Concrete (*)

(f) Calibration of Concrete Testing Equipment (BMPR PCCQ01 through BMPR PCCQ09) (*)

(g) Water/Cement Ratio Worksheet (BMPR PCCW01) (*)

(h) Field/Lab Gradations (MI 504M) (*)

(i) Concrete Air, Slump and Quantity (BMPR MI654) (*)

(j) P.C. Concrete Strengths (BMPR MI655) (*)

(k) Aggregate Technician Course or Mixture Aggregate Technician Course (*)

(l) Portland Cement Concrete Tester Course (*)

(m) Portland Cement Concrete Level I Technician Course - Manual of Instructions for Concrete Testing (*)

(n) Portland Cement Concrete Level II Technician Course - Manual of Instructions for Concrete Proportioning (*)

(o) Portland Cement Concrete Level III Technician Course - Manual of Instructions for Design of Concrete Mixtures (*)

(p) Manual of Test Procedures for Materials

* Refer to Appendix C of the Manual of Test Procedures for Materials for more information."

80281

REMOVAL AND DISPOSAL OF REGULATED SUBSTANCES (BDE)

Effective: January 1, 2012
Revised: November 2, 2012

Revise Article 669.01 of the Standard Specifications to read:

"**669.01 Description.** This work shall consist of the transportation and proper disposal of contaminated soil and water. This work shall also consist of the removal, transportation, and proper disposal of underground storage tanks (UST), their content and associated underground piping to the point where the piping is above the ground, including determining the content types and estimated quantities."

Revise Article 669.08 of the Standard Specifications to read:

"**669.08 Contaminated Soil and/or Groundwater Monitoring.** The Contractor shall hire a qualified environmental firm to monitor the area containing the regulated substances. The affected area shall be monitored with a photoionization detector (PID) utilizing a lamp of 10.6eV or greater or a flame ionization detector (FID). Any field screen reading on the PID or FID in excess of background levels indicates the potential presence of contaminated material requiring handling as a non-special waste, special waste, or hazardous waste. No excavated soils can be taken to a clean construction and demolition debris (CCDD) facility or an uncontaminated soil fill operation with detectable PID or FID meter readings that are above background. The PID or FID meter shall be calibrated on-site and background level readings taken and recorded daily. All testing shall be done by a qualified engineer/technician. Such testing and monitoring shall be included in the work. The Contractor shall identify the exact limits of removal of non-special waste, special waste, or hazardous waste. All limits shall be approved by the Engineer prior to excavation. The Contractor shall take all necessary precautions.

Based upon the land use history of the subject property and/or PID or FID readings indicating contamination, a soil or groundwater sample shall be taken from the same location and submitted to an approved laboratory. Soil or groundwater samples shall be analyzed for the contaminants of concern, including pH, based on the property's land use history or the parameters listed in the maximum allowable concentration (MAC) for chemical constituents in uncontaminated soil established pursuant to Subpart F of 35 Illinois Administrative Code 1100.605. The analytical results shall serve to document the level of soil contamination. Soil and groundwater samples may be required at the discretion of the Engineer to verify the level of soil and groundwater contamination.

Samples shall be grab samples (not combined with other locations). The samples shall be taken with decontaminated or disposable instruments. The samples shall be placed in sealed containers and transported in an insulated container to the laboratory. The container shall maintain a temperature of 39 °F (4 °C). All samples shall be clearly labeled. The labels shall indicate the sample number, date sampled, location and elevation, and any other observations.

The laboratory shall use analytical methods which are able to meet the lowest appropriate practical quantitation limits (PQL) or estimated quantitation limit (EQL) specified in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods", EPA Publication No. SW-846 and "Methods for the Determination of Organic Compounds in Drinking Water", EPA, EMSL, EPA-600/4-88/039. For parameters where the specified cleanup objective is below the acceptable detection limit (ADL), the ADL shall serve as the cleanup objective. For other parameters the ADL shall be equal to or below the specified cleanup objective."

Replace the first two paragraphs of Article 669.09 of the Standard Specifications with the following:

"**669.09 Contaminated Soil and/or Groundwater Management and Disposal.** The management and disposal of contaminated soil and/or groundwater shall be according to the following:

(a) Soil Analytical Results Exceed Most Stringent MAC. When the soil analytical results indicate that detected levels exceed the most stringent maximum allowable concentration (MAC) for chemical constituents in uncontaminated soil established pursuant to Subpart F of 35 Illinois Administrative Code 1100.605, the soil shall be managed as follows:

(1) When analytical results indicate inorganic chemical constituents exceed the most stringent MAC but they are still considered within area background levels by the Engineer, the excavated soil can be utilized within the construction limits as fill, when suitable. Such soil excavated for storm sewers can be placed back into the excavated trench as backfill, when suitable, unless trench backfill is specified. If the soils cannot be utilized within the construction limits, they shall be managed and disposed of off-site as a non-special waste, special waste, or hazardous waste as applicable.

(2) When analytical results indicate chemical constituents exceed the most stringent MAC but do not exceed the MAC for a Metropolitan Statistical Area (MSA) County, the excavated soil can be utilized within the construction limits as fill, when suitable, or managed and disposed of off-site as "uncontaminated soil" at a CCDD facility or an uncontaminated soil fill operation within an MSA County provided the pH of the soil is within the range of 6.25 - 9.0, inclusive.

(3) When analytical results indicate chemical constituents exceed the most stringent MAC but do not exceed the MAC for an MSA County excluding Chicago, or the MAC within the Chicago corporate limits, the excavated soil can be utilized within the construction limits as fill, when suitable, or managed and disposed of off-site as "uncontaminated soil" at a CCDD facility or an uncontaminated soil fill operation within an MSA County excluding Chicago or within the Chicago corporate limits provided the pH of the soil is within the range of 6.25 - 9.0, inclusive.

(4) When analytical results indicate chemical constituents exceed the most stringent MAC but do not exceed the MAC for an MSA County excluding Chicago, the excavated soil can be utilized within the construction limits as fill, when suitable, or managed and disposed of off-site as "uncontaminated soil" at a CCDD facility or an uncontaminated soil fill operation within an MSA County excluding Chicago provided the pH of the soil is within the range of 6.25 - 9.0, inclusive.

(5) When the Engineer determines soil cannot be managed according to Articles 669.09(a)(1) through (a)(4) above, the soil shall be managed and disposed of off-site as a non-special waste, special waste, or hazardous waste as applicable.

(b) Soil Analytical Results Do Not Exceed Most Stringent MAC. When the soil analytical results indicate that detected levels do not exceed the most stringent MAC but the pH of the soil is less than 6.25 or greater than 9.0, the excavated soil can be utilized within the construction limits or managed and disposed of off-site as "uncontaminated soil" according to Article 202.03. However the excavated soil cannot be taken to a CCDD facility or an uncontaminated soil fill operation.

(c) Groundwater. When groundwater analytical results indicate the detected levels are above Appendix B, Table E of 35 Illinois Administrative Code 742, the most stringent Tier 1 Groundwater Remediation Objectives for Groundwater Component of the Groundwater Ingestion Route for Class 1 groundwater, the groundwater shall be managed off-site as a special waste.

All groundwater encountered within lateral trenches may be managed within the trench and allowed to infiltrate back into the ground. If the groundwater cannot be managed within the trench it must be removed as a special or hazardous waste. The Contractor is prohibited from managing groundwater within the trench by discharging it through any existing or new storm sewer. The Contractor shall install backfill plugs within the area of groundwater contamination.

One backfill plug shall be placed down gradient to the area of groundwater contamination. Backfill plugs shall be installed at intervals not to exceed 50 ft (15 m). Backfill plugs are to be 4 ft (1.2 m) long, measured parallel to the trench, full trench width and depth. Backfill plugs shall not have any fine aggregate bedding or backfill, but shall be entirely cohesive soil or any class of concrete. The Contractor shall provide test data that the material has a permeability of less than 10^{-7} cm/sec according to ASTM D 5084, Method A or per another test method approved by the Engineer."

Revise Article 669.14 of the Standard Specifications to read:

"**669.14 Final Environmental Construction Report.** At the end of the project, the Contractor will prepare and submit three copies of the Environmental Construction Report on the activities conducted during the life of the project, one copy shall be submitted to the Resident Engineer, one copy shall be submitted to the District's Environmental Studies Unit, and one copy shall be submitted with an electronic copy in Adode.pdf format to the Geologic

and Waste Assessment Unit, Bureau of Design and Environment, IDOT, 2300 South Dirksen Parkway, Springfield, Illinois 62764. The technical report shall include all pertinent information regarding the project including, but not limited to:

(a) Measures taken to identify, monitor, handle, and dispose of soil or groundwater containing regulated substances, to prevent further migration of regulated substances, and to protect workers,

(b) Cost of identifying, monitoring, handling, and disposing of soil or groundwater containing regulated substances, the cost of preventing further migration of regulated substances, and the cost for worker protection from the regulated substances. All cost should be in the format of the contract pay items listed in the contract plans (identified by the preliminary environmental site investigation (PESA) site number),

(c) Plan sheets showing the areas containing the regulated substances,

(d) Field sampling and testing results used to identify the nature and extent of the regulated substances,

(e) Waste manifests (identified by the preliminary environmental site investigation (PESA) site number) for special or hazardous waste disposal, and

(f) Landfill tickets (identified by the preliminary environmental site investigation (PESA) site number) for non-special waste disposal."

Revise the second paragraph of Article 669.16 of the Standard Specifications to read:

"The transportation and disposal of soil and other materials from an excavation determined to be contaminated will be paid for at the contract unit price per cubic yard (cubic meter) for NON-SPECIAL WASTE DISPOSAL, SPECIAL WASTE DISPOSAL, or HAZARDOUS WASTE DISPOSAL."

80283

REMOVAL AND DISPOSAL OF SURPLUS MATERIALS (BDE)

Effective: November 2, 2012

Revise the first four paragraphs of Article 202.03 of the Standard Specifications to read:

"**202.03 Removal and Disposal of Surplus, Unstable, Unsuitable, and Organic Materials.** Suitable excavated materials shall not be wasted without permission of the Engineer. The Contractor shall dispose of all surplus, unstable, unsuitable, and organic materials, in such a manner that public or private property will not be damaged or endangered.

Suitable earth, stones and boulders naturally occurring within the right-of-way may be placed in fills or embankments in lifts and compacted according to Section 205. Broken concrete without protruding metal bars, bricks, rock, stone, reclaimed asphalt pavement with no expansive aggregate, or uncontaminated dirt and sand generated from construction or demolition activities may be used in embankment or in fill. If used in fills or embankments, these materials shall be placed and compacted to the satisfaction of the Engineer; shall be buried under a minimum of 2 ft (600 mm) of earth cover (except when the materials include only uncontaminated dirt); and shall not create an unsightly appearance or detract from the natural topographic features of an area. Broken concrete without protruding metal bars, bricks, rock, or stone may be used as riprap as approved by the Engineer. If the materials are used for fill in locations within the right-of-way but outside project construction limits, the Contractor must specify to the Engineer, in writing, how the landscape restoration of the fill areas will be accomplished. Placement of fill in such areas shall not commence until the Contractor's landscape restoration plan is approved by the Engineer.

Aside from the materials listed above, all other construction and demolition debris or waste shall be disposed of in a licensed landfill, recycled, reused, or otherwise disposed of as allowed by State or Federal laws and regulations. When the Contractor chooses to dispose of uncontaminated soil at a clean construction and demolition debris (CCDD) facility or at an uncontaminated soil fill operation, it shall be the Contractor's responsibility to have the pH of the material tested to ensure the value is between 6.25 and 9.0, inclusive. A copy of the pH test results shall be provided to the Engineer.

A permit shall be obtained from IEPA and made available to the Engineer prior to open burning of organic materials (i.e., plant refuse resulting from pruning or removal of trees or shrubs) or other construction or demolition debris. Organic materials originating within the right-of-way limits may be chipped or shredded and placed as mulch around landscape plantings within the right-of-way when approved by the Engineer. Chipped or shredded material to be placed as mulch shall not exceed a depth of 6 in. (150 mm)."

80319

SUBCONTRACTOR MOBILIZATION PAYMENTS (BDE)

Effective: April 2, 2005
Revised: April 1, 2011

To account for the preparatory work and operations necessary for the movement of subcontractor personnel, equipment, supplies, and incidentals to the project site and for all other work or operations that must be performed or costs incurred when beginning work approved for subcontracting according to Article 108.01 of the Standard Specifications, the Contractor shall make a mobilization payment to each subcontractor.

This mobilization payment shall be made at least 14 days prior to the subcontractor starting work. The amount paid shall be equal to 3 percent of the amount of the subcontract reported on form BC 260A submitted for the approval of the subcontractor's work.

The mobilization payment to the subcontractor is an advance payment of the reported amount of the subcontract and is not a payment in addition to the amount of the subcontract; therefore, the amount of the advance payment will be deducted from future progress payments.

This provision shall be incorporated directly or by reference into each subcontract approved by the Department.

80143

SYNTHETIC FIBERS IN CONCRETE GUTTER, CURB, MEDIAN, AND PAVED DITCH (BDE)

Effective: November 1, 2012

Add the following to Article 606.02 of the Standard Specifications.

"(g) Grout 1024.01
(h) Synthetic Fibers (Note 1)

Note 1. Synthetic fibers may be used in the concrete mixture for slipform applications. Synthetic fibers shall be Type III according to ASTM C 1116. The synthetic fiber shall have a minimum length of 1/2 in. (13 mm) and a maximum length of 0.75 in. (19 mm).

The synthetic fibers shall be added to the concrete and mixed per the manufacturer's recommendation. The maximum dosage rate in the concrete mixture shall be 1.5 lb/cu yd (0.9 kg/cu m).

The Department will maintain an "Approved List of Synthetic Fibers"."

Revise the second paragraph of Article 606.11 of the Standard Specifications to read:

"Forms shall be removed within 24 hours after the concrete has been placed, and minor defects shall be filled with grout consisting of one part cement and two parts sand mixed with water."

80308

TEMPORARY EROSION AND SEDIMENT CONTROL (BDE)

Effective: January 1, 2012

Revise the first paragraph of Article 280.04(f) of the Standard Specifications to read:

"(f) Temporary Erosion Control Seeding. This system consists of seeding all erodible/bare areas to minimize the amount of exposed surface area. Seed bed preparation will not be required if the surface of the soil is uniformly smooth and in a loose condition. Light disking shall be done if the soil is hard packed or caked. Erosion rills greater than 1 in. (25 mm) in depth shall be filled and area blended with the surrounding soil. Fertilizer nutrients will not be required."

Delete the last sentence of Article 280.08(e) of the Standard Specifications.

80286

TRAFFIC CONTROL DEFICIENCY DEDUCTION (BDE)

Effective: August 1, 2011

Revise the third sentence of the third paragraph of Article 105.03(b) of the Standard Specifications to read:

"The daily monetary deduction will be $2,500."

80273

TRAINING SPECIAL PROVISIONS (BDE)

This Training Special Provision supersedes Section 7b of the Special Provision entitled "Specific Equal Employment Opportunity Responsibilities," and is in implementation of 23 U.S.C. 140(a).

As part of the contractor's equal employment opportunity affirmative action program, training shall be provided as follows:

The contractor shall provide on-the-job training aimed at developing full journeyman in the type of trade or job classification involved. The number of trainees to be trained under this contract will be 1. In the event the contractor subcontracts a portion of the contract work, he shall determine how many, if any, of the trainees are to be trained by the subcontractor, provided however, that the contractor shall retain the primary responsibility for meeting the training requirements imposed by this special provision. The contractor shall also insure that this Training Special Provision is made applicable to such subcontract. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training.

The number of trainees shall be distributed among the work classifications on the basis of the contractor's needs and the availability of journeymen in the various classifications within the reasonable area of recruitment. Prior to commencing construction, the contractor shall submit to the Illinois Department of Transportation for approval the number of trainees to be trained in each selected classification and training program to be used. Furthermore, the contractor shall specify the starting time for training in each of the classifications. The contractor will be credited for each trainee employed by him on the contract work who is currently enrolled or becomes enrolled in an approved program and will be reimbursed for such trainees as provided hereinafter.

Training and upgrading of minorities and women toward journeyman status is a primary objective of this Training Special Provision. Accordingly, the contractor shall make every effort to enroll minority trainees and women (e.g. by conducting systematic and direct recruitment through public and private sources likely to yield minority and women trainees) to the extent such persons are available within a reasonable area of recruitment. The contractor will be responsible for demonstrating the steps that he has taken in pursuance thereof, prior to a determination as to whether the contractor is in compliance with this Training Special Provision. This training commitment is not intended, and shall not be used, to discriminate against any applicant for training, whether a member of a minority group or not.

No employee shall be employed as a trainee in any classification in which he has successfully completed a training course leading to journeyman status or in which he has been employed as a journeyman. The contractor should satisfy this requirement by including appropriate questions in the employee application or by other suitable means. Regardless of the method used the contractor's records should document the findings in each case.

The minimum length and type of training for each classification will be as established in the training program selected by the contractor and approved by the Illinois Department of Transportation and the Federal Highway Administration. The Illinois Department of Transportation and the Federal Highway Administration shall approve a program, if it is reasonably calculated to meet the equal employment opportunity obligations of the contractor and to qualify the average trainee for journeyman status in the classification concerned by the end of the training period. Furthermore, apprenticeship programs registered with the U.S. Department of Labor, Bureau of Apprenticeship and Training, or with a State apprenticeship agency recognized by the Bureau and training programs approved by not necessarily sponsored by the U.S. Department of Labor, Manpower Administration, Bureau of Apprenticeship and Training shall also be considered acceptable provided it is being administered in a manner consistent with the equal employment obligations of Federal-aid highway construction contracts. Approval or acceptance of a training program shall be obtained from the State prior to commencing work on the classification covered by the program. It is the intention of these provisions that training is to be provided in the construction crafts rather then clerk-typists or secretarial-type positions. Training is permissible in lower level management positions such as office engineers, estimators, timekeepers, etc., where the training is oriented toward construction applications. Training in the laborer classification may be permitted provided that significant and meaningful training is provided and approved by the Illinois Department of Transportation and the Federal Highway Administration. Some offsite training is permissible as long as the training is an integral part of an approved training program and does not comprise a significant part of the overall training.

Except as otherwise noted below, the contractor will be reimbursed 80 cents per hour of training given an employee on this contract in accordance with an approved training program. As approved by the Engineer, reimbursement will be made for training of persons in excess of the number specified herein. This reimbursement will be made even though the contractor receives additional training program funds from other sources, provided such other source does not specifically prohibit the contractor from receiving other reimbursement. Reimbursement for offsite training indicated above may only be made to the contractor where he does one or more of the following and the trainees are concurrently employed on a Federal-aid project; contributes to the cost of the training, provides the instruction to the trainee or pays the trainee's wages during the offsite training period.

No payment shall be made to the contractor if either the failure to provide the required training, or the failure to hire the trainee as a journeyman, is caused by the contractor and evidences a lack of good faith on the part of the contractor in meeting the requirement of this Training Special Provision. It is normally expected that a trainee will begin his training on the project as soon as feasible after start of work utilizing the skill involved and remain on the project as long as training opportunities exist in his work classification or until he has completed his training program.

It is not required that all trainees be on board for the entire length of the contract. A contractor will have fulfilled his responsibilities under this Training Special Provision if he has provided acceptable training to the number of trainees specified. The number trained shall be determined on the basis of the total number enrolled on the contract for a significant period.

Trainees will be paid at least 60 percent of the appropriate minimum journeyman's rate specified in the contract for the first half of the training period, 75 percent for the third quarter of the training period, and 90 percent for the last quarter of the training period, unless apprentices or trainees in an approved existing program are enrolled as trainees on this project. In that case, the appropriate rates approved by the Departments of Labor or Transportation in connection with the existing program shall apply to all trainees being trained for the same classification who are covered by this Training Special Provision.

The contractor shall furnish the trainee a copy of the program he will follow in providing the training. The contractor shall provide each trainee with a certification showing the type and length of training satisfactorily complete.

The contractor will provide for the maintenance of records and furnish periodic reports documenting his performance under this Training Special Provision.

METHOD OF MEASUREMENT The unit of measurement is in hours.

BASIS OF PAYMENT This work will be paid for at the contract unit price of 80 cents per hour for TRAINEES. The estimated total number of hours, unit price and total price have been included in the schedule of prices.

20338

WARM MIX ASPHALT (BDE)

Effective: January 1, 2012
Revised: November 1, 2012

Description. This work shall consist of designing, producing and constructing Warm Mix Asphalt (WMA) in lieu of Hot Mix Asphalt (HMA) at the Contractor's option. Work shall be according to Sections 406, 407, 408, 1030, and 1102 of the Standard Specifications, except as modified herein. In addition, any references to HMA in the Standard Specifications, or the special provisions shall be construed to include WMA.

WMA is an asphalt mixture which can be produced at temperatures lower than allowed for HMA utilizing approved WMA technologies. WMA technologies are defined as the use of additives or processes which allow a reduction in the temperatures at which HMA mixes are produced and placed. WMA is produced by the use of additives, a water foaming process, or combination of both. Additives include minerals, chemicals or organics incorporated into the asphalt binder stream in a dedicated delivery system. The process of foaming injects water into the asphalt binder stream, just prior to incorporation of the asphalt binder with the aggregate.

Approved WMA technologies may also be used in HMA provided all the requirements specified herein, with the exception of temperature, are met. However, asphalt mixtures produced at temperatures in excess of 275 °F (135 °C) will not be considered WMA when determining the grade reduction of the virgin asphalt binder grade.

Materials.

Add the following to Article 1030.02 of the Standard Specifications.

"(h) Warm Mix Asphalt (WMA) Technologies (Note 3)"

Add the following note to Article 1030.02 of the Standard Specifications.

"Note 3. Warm mix additives or foaming processes shall be selected from the current Bureau of Materials and Physical Research Approved List, "Warm-Mix Asphalt Technologies"."

Equipment.

Revise the first paragraph of Article 1102.01 of the Standard Specifications to read:

"**1102.01 Hot-Mix Asphalt Plant.** The hot-mix asphalt (HMA) plant shall be the batch-type, continuous-type, or dryer drum plant. The plants shall be evaluated for prequalification rating and approval to produce HMA according to the current Bureau of Materials and Physical Research Policy Memorandum, "Approval of Hot-Mix Asphalt Plants and Equipment". Once approved, the Contractor shall notify the Bureau of Materials and Physical Research to obtain approval of all plant modifications. The plants shall not be used to produce mixtures concurrently for more than one project or for private work unless permission is granted in writing

by the Engineer. The plant units shall be so designed, coordinated and operated that they will function properly and produce HMA having uniform temperatures and compositions within the tolerances specified. The plant units shall meet the following requirements."

Add the following to Article 1102.01(a) of the Standard Specifications.

"(13) Equipment for Warm Mix Technologies.

a. Foaming. Metering equipment for foamed asphalt shall have an accuracy of ± 2 percent of the actual water metered. The foaming control system shall be electronically interfaced with the asphalt binder meter.

b. Additives. Additives shall be introduced into the plant according to the supplier's recommendations and shall be approved by the Engineer. The system for introducing the WMA additive shall be interlocked with the aggregate feed or weigh system to maintain correct proportions for all rates of production and batch sizes."

Mix Design Verification.

Add the following to Article 1030.04 of the Standard Specifications.

"(d) Warm Mix Technologies.

(1) Foaming. WMA mix design verification will not be required when foaming technology is used alone (without WMA additives). However, the foaming technology shall only be used on HMA designs previously approved by the Department.

(2) Additives. WMA mix designs utilizing additives shall be submitted to the Engineer for mix design verification. Additional mixture verification requirements include Hamburg Wheel testing according to Illinois Modified AASHTO T324 and tensile strength testing according to Illinois Modified AASHTO T283 which shall meet the criteria in Tables 1 and 2 respectively herein. The Contractor shall provide the additional material as follows:

a. Four gyratory specimens to be prepared in the Contractor's lab according to Illinois Modified AASHTO T324.

b. Sufficient mixture to conduct tensile strength testing according to Illinois Modified AASHTO T283.

Table 1. Illinois Modified AASHTO T324 Requirements [1/]

Asphalt Binder Grade	# Wheel Passes	Max Rut Depth in. (mm)
PG 76-XX	20,000	1/2 in. (12.5 mm)
PG 70-XX	15,000	1/2 in. (12.5 mm)

PG 64-XX	7,500	1/2 in. (12.5 mm)
PG 58-XX	5,000	1/2 in. (12.5 mm)

1/ Loose WMA shall be oven aged at 270 ± 5 °F (132 ± 3 °C) for two hours prior to gyratory compaction of Hamburg Wheel specimens.

Table 2. Tensile Strength Requirements

Asphalt Binder Grade	Tensile Strength psi (kPa)	
	Minimum	Maximum
PG 76-XX	80 (552)	200 (1379)
PG 70-XX		
PG 64-XX	60 (414)	200 (1379)"
PG 58-XX		

Production.

Revise the second paragraph of Article 1030.06(a) of the Standard Specifications to read:

"At the start of mix production for HMA, WMA, and HMA using WMA technologies, QC/QA mixture start-up will be required for the following situations; at the beginning of production of a new mix of a new mixture design, at the beginning of each production season, and at every plant utilized to produce mixtures, regardless of the mix."

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

"Warm mix technologies shall be as follows.

(1) Mixture sampled to represent the test strip shall include additional material sufficient for the Department to conduct Hamburg Wheel testing according to Illinois Modified AASHTO T324 and tensile strength testing according to Illinois Modified AASHTO T283 (approximately 110 lb (50 kg) total).

(2) Upon completion of the start-up, WMA, or HMA using WMA technologies, production shall cease. The Contractor may revert to conventional HMA production provided a start-up has been previously completed for the current construction season for the mix design. WMA, or HMA using WMA technologies, may resume once all the test results, including Hamburg Wheel results are completed and found acceptable by the Engineer."

Add the following after the first paragraph of Article 1030.05(d)(2)c. of the Standard Specifications:

"During production of each WMA mixture or HMA utilizing WMA technologies, the Engineer will request a minimum of one randomly located sample, identified by

the Engineer, for Hamburg Wheel testing to determine compliance with the requirements specified in Table 1 herein."

Quality Control/Quality Assurance Testing.

Revise the table in Article 1030.05(d)(2)a. of the Standard Specifications to read:

Parameter	Frequency of Tests High ESAL Mixture Low ESAL Mixture	Frequency of Tests All Other Mixtures	Test Method See Manual of Test Procedures for Materials
Aggregate Gradation % passing sieves: 1/2 in. (12.5 mm), No. 4 (4.75 mm), No. 8 (2.36 mm), No. 30 (600 μm) No. 200 (75 μm) Note 1.	1 washed ignition oven test on the mix per half day of production Note 4.	1 washed ignition oven test on the mix per day of production Note 4.	Illinois Procedure
Asphalt Binder Content by Ignition Oven Note 2.	1 per half day of production	1 per day	Illinois-Modified AASHTO T 308
VMA Note 3.	Day's production ≥ 1200 tons: 1 per half day of production	N/A	Illinois-Modified AASHTO R 35
	Day's production < 1200 tons: 1 per half day of production for first 2 days and 1 per day thereafter (first sample of the day)		
Air Voids Bulk Specific Gravity of Gyratory Sample Note 5.	Day's production ≥ 1200 tons: 1 per half day of production	1 per day	Illinois-Modified AASHTO T 312
	Day's production < 1200 tons: 1 per half day of production for first 2 days and 1 per day thereafter (first sample of the day)		

Parameter	Frequency of Tests High ESAL Mixture Low ESAL Mixture	Frequency of Tests All Other Mixtures	Test Method See Manual of Test Procedures for Materials
Maximum Specific Gravity of Mixture	Day's production ≥ 1200 tons: 1 per half day of production	1 per day	Illinois-Modified AASHTO T 209
	Day's production < 1200 tons: 1 per half day of production for first 2 days and 1 per day thereafter (first sample of the day)		

Note 1. The No. 8 (2.36 mm) and No. 30 (600 µm) sieves are not required for All Other Mixtures.

Note 2. The Engineer may waive the ignition oven requirement for asphalt binder content if the aggregates to be used are known to have ignition asphalt binder content calibration factors which exceed 1.5 percent. If the ignition oven requirement is waived, other Department approved methods shall be used to determine the asphalt binder content.

Note 3. The G_{sb} used in the voids in the mineral aggregate (VMA) calculation shall be the same average G_{sb} value listed in the mix design.

Note 4. The Engineer reserves the right to require additional hot bin gradations for batch

Note 5. The WMA compaction temperature for mixture volumetric testing shall be 270 ± 5 °F (132 ± 3 °C) for quality control testing. The WMA compaction temperature for quality assurance testing will be 270 ± 5 °F (132 ± 3 °C) if the mixture is not allowed to cool to room temperature. If the mixture is allowed to cool to room temperature it shall be reheated to standard HMA compaction temperatures."

Construction Requirements.

Revise the second paragraph of Article 406.06(b)(1) of the Standard Specifications to read:

"The HMA shall be delivered at a temperature of 250 to 350 °F (120 to 175 °C). WMA shall be delivered at a minimum temperature of 215 °F (102 °C)."

Basis of Payment.

This work will be paid at the contract unit price bid for the HMA pay items involved. Anti-strip will not be paid for separately, but shall be considered as included in the cost of the work.

80288

WEEKLY DBE TRUCKING REPORTS (BDE)

Effective: June 2, 2012

The Contractor shall provide a weekly report of Disadvantaged Business Enterprise (DBE) trucks hired by the Contractor or subcontractors (i.e. not owned by the Contractor or subcontractors) that are used on the jobsite; or used for the delivery and/or removal of equipment/material to and from the jobsite. The jobsite shall also include offsite locations, such as plant sites or storage sites, when those locations are used solely for this contract.

The report shall be submitted on the form provided by the Department within ten business days following the reporting period. The reporting period shall be Monday through Sunday for each week reportable trucking activities occur. The report shall be submitted to the Engineer and a copy shall be provided to the district EEO Officer.

Any costs associated with providing weekly DBE trucking reports shall be considered as included in the contract unit prices bid for the various items of work involved and no additional compensation will be allowed.

80302

REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under Title 23 (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services). The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in bid proposal or request for proposal documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors.

II. NONDISCRIMINATION

The provisions of this section related to 23 CFR Part 230 are applicable to all Federal-aid construction contracts and to all related construction subcontracts of $10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR 60, 29 CFR 1625-1627, Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding $10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR 60, and 29 CFR 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), and Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR 230, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

1. Equal Employment Opportunity: Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630, 29 CFR 1625-1627, 41 CFR 60 and 49 CFR 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract.

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

2. EEO Officer: The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

8. Reasonable Accommodation for Applicants / Employees with Disabilities: The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established there under. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors and suppliers and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

10. Assurance Required by 49 CFR 26.13(b):

a. The requirements of 49 CFR Part 26 and the State DOT's U.S. DOT-approved DBE program are incorporated by reference.

b. The contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the contracting agency deems appropriate.

11. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women;

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form FHWA-1391. The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of $10,000 or more.

The contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location, under the contractor's control, where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. Davis-Bacon and Related Act Provisions

This section is applicable to all Federal-aid construction projects exceeding $2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size). The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. Contracting agencies may elect to apply these requirements to other projects.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 "Contract provisions and related matters" with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. Minimum wages

a. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.d. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH–1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b.(1) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is utilized in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(3) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. The Wage and Hour Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

c. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

d. If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

2. Withholding

The contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract, or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the contracting agency may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

3. Payrolls and basic records

a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

b. (1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g. , the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH–347 is available for this purpose from the Wage and Hour Division Web site at http://www.dol.gov/esa/whd/forms/wh347instr.htm or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency..

(2) Each payroll submitted shall be accompanied by a “Statement of Compliance,” signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(i) That the payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH–347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(2) of this section.

(4) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FHWA may, after written notice to the contractor, the contracting agency or the State DOT, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and trainees

a. Apprentices (programs of the USDOL).

Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.

The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

b. Trainees (programs of the USDOL).

Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration.

The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

d. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

6. Subcontracts. The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

7. Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for

debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

9. Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility.

a. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

c. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

The following clauses apply to any Federal-aid construction contract in an amount in excess of $100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (1.) of this section, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1.) of this section, in the sum of $10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1.) of this section.

3. Withholding for unpaid wages and liquidated damages. The FHWA or the contacting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2.) of this section.

4. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1.) through (4.) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1.) through (4.) of this section.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term “perform work with its own organization” refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions:

(1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;

(2) the prime contractor remains responsible for the quality of the work of the leased employees;

(3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and

(4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

5. The 30% self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements.

VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C.3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

By submission of this bid/proposal or the execution of this contract, or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any person who is or will be utilized in the performance of this contract is not prohibited from receiving an award due to a violation of Section 508 of the Clean Water Act or Section 306 of the Clean Air Act.
2. That the contractor agrees to include or cause to be included the requirements of paragraph (1) of this Section X in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements.

X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost $25,000 or more – as defined in 2 CFR Parts 180 and 1200.

1**. Instructions for Certification – First Tier Participants:**

a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded,"

as used in this clause, are defined in 2 CFR Parts 180 and 1200. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (https://www.epls.gov/), which is compiled by the General Services Administration.

i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

* * * * *

2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency;

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

2. **Instructions for Certification - Lower Tier Participants:**

(Applicable to all subcontracts, purchase orders and other lower tier transactions requiring prior FHWA approval or estimated to cost $25,000 or more - 2 CFR Parts 180 and 1200)

a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (https://www.epls.gov/), which is compiled by the General Services Administration.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the

certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

* * * * *

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

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XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed $100,000 (49 CFR 20).

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed $100,000 and that all such recipients shall certify and disclose accordingly.

MINIMUM WAGES FOR FEDERAL AND FEDERALLY ASSISTED CONSTRUCTION CONTRACTS

This project is funded, in part, with Federal-aid funds and, as such, is subject to the provisions of the Davis-Bacon Act of March 3, 1931, as amended (46 Sta. 1494, as amended, 40 U.S.C. 276a) and of other Federal statutes referred to in a 29 CFR Part 1, Appendix A, as well as such additional statutes as may from time to time be enacted containing provisions for the payment of wages determined to be prevailing by the Secretary of Labor in accordance with the Davis-Bacon Act and pursuant to the provisions of 29 CFR Part 1. The prevailing rates and fringe benefits shown in the General Wage Determination Decisions issued by the U.S. Department of Labor shall, in accordance with the provisions of the foregoing statutes, constitute the minimum wages payable on Federal and federally assisted construction projects to laborers and mechanics of the specified classes engaged on contract work of the character and in the localities described therein.

General Wage Determination Decisions, modifications and supersedes decisions thereto are to be used in accordance with the provisions of 29 CFR Parts 1 and 5. Accordingly, the applicable decision, together with any modifications issued, must be made a part of every contract for performance of the described work within the geographic area indicated as required by an applicable DBRA Federal prevailing wage law and 29 CFR Part 5. The wage rates and fringe benefits contained in the General Wage Determination Decision shall be the minimum paid by contractors and subcontractors to laborers and mechanics.

NOTICE

The most current **General Wage Determination Decisions** (wage rates) are available on the IDOT web site. They are located on the Letting and Bidding page at http://www.dot.state.il.us/desenv/delett.html.

In addition, ten (10) days prior to the letting, the applicable Federal wage rates will be e-mailed to subscribers. It is recommended that all contractors subscribe to the Federal Wage Rates List or the Contractor's Packet through IDOT's subscription service.

PLEASE NOTE: if you have already subscribed to the Contractor's Packet you will automatically receive the Federal Wage Rates.

The instructions for subscribing are at http://www.dot.state.il.us/desenv/subsc.html.

If you have any questions concerning the wage rates, please contact IDOT's Chief Contract Official at 217-782-7806.