



Illinois Department of Transportation

Division of Highways/Region One / District One
201 West Center Court/Schaumburg, Illinois 60196-1096

LOCAL ROADS AND STREETS
Motor Fuel Tax – Construction Contract
Village of LaGrange
Section No.: 12-00088-00-FP
Cook County

MAY - 6 2013

May 1, 2013

RECEIVED

Mr. Thomas Morsch
Village Clerk
Village of LaGrange
53 South LaGrange Road
P.O. Box 668
LaGrange, IL 60525

Dear Mr. Morsch:

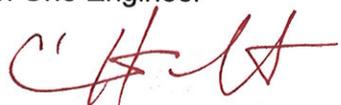
The Contract in the amount of \$2,474,139.00 with A. Lamp Concrete Contractors, Inc. for the above-referenced section was approved as of April 30, 2012. As we understand \$1,074,139.00 will be paid for with other than Motor Fuel Tax (MFT) Funds.

The authorization for expenditure of \$1,400,000.00, which is the MFT portion of the contract cost, from the Village's Unobligated MFT Account is authorized and will be recorded on the next Monthly Allotment Notification Letter. This amount together with \$1,074,139.00 from other funds totals \$2,474,139.00, which is the total contract cost for the above-referenced section.

Enclosed is one copy for your records. Baxter & Woodman, Inc. will forward a copy to the Contractor. If you have any questions or need additional information, please contact Marilyn Solomon, Field Engineer, at (847) 705-4407 or via email at Marilyn.Solomon@illinois.gov.

Very truly yours,

John Fortmann, P.E.
Acting Deputy Director of Highways,
Region One Engineer

By: 
Christopher J. Holt, P.E.
Bureau Chief of Local Roads and Streets

Enclosure

cc: Ryan Gillingham, P.E., Director of Public Works w/encl.
Dennis Dabros, P.E., Baxter & Woodman, Inc. w/encl.

RECEIVED

1907 - 1908

[Handwritten signature]



ckle

Proposal / Contract Cover

PROPOSAL SUBMITTED BY		
A Lamp Concrete Contractors, Inc.		
Contractor's Name		
1900 Wright Boulevard		
Street		P.O. Box
Schaumburg	IL	60193
City	State	Zip Code

STATE OF ILLINOIS

COUNTY OF Cook

Village of La Grange

(Name of City, Village, Town or Road District)

- ESTIMATE OF COST
- SPECIFICATIONS
- PLANS
- MATERIAL PROPOSAL
- DELIVER AND INSTALL PROPOSAL
- CONTRACT PROPOSAL
- CONTRACT
- CONTRACT BOND

FOR THE IMPROVEMENT OF

STREET NAME OR ROUTE NO. Maple Avenue Relief Sewer

SECTION NO. 12-00088-00-FP

TYPES OF FUNDS MFT and Corporate

For Municipal Projects

Submitted/Approved/Passed 04-15-13
Date

Mayor President of Board of Trustees Municipal Official

For County and Road District Projects

Submitted/Approved _____
Date

Highway Commissioner

Submitted/Approved _____
Date

County Engineer/Superintendent of Highways

Department of Transportation

Released for bid based on limited review

Date _____

Regional Engineer

Concurrence in approval of award

Date 4-30-13

John Peterson MS
Regional Engineer

**VILLAGE OF LA GRANGE
DEPARTMENT OF PUBLIC WORKS**

**REQUEST FOR BIDS
MAPLE AVENUE RELIEF SEWER (MARS)**

**Addendum No. 1
Issued March 21, 2013**

The purpose of this addendum is to modify and/or clarify the bid documents as indicated below.

1. A question was received regarding traffic control.

Response: The construction staging requirements are detailed on Sheet 3 of the plan set.

2. A question was received regarding the expected start date of construction.

Response: Per the Standard Specifications, the contractor shall begin the work to be performed under the contract not later than 10 days after the execution of the contract. It is the Village's intent to Award the project at the April 8th Board Meeting.

3. A question was received regarding responsibility for gas main relocation.

Response: The gas main is to be relocated by others as indicated on the drawing.

4. A question was received regarding payment widths for rock excavation.

Response: Payment for rock excavation will be at the widths as specified in the Special Provisions.

5. Clarification was requested on Pay Item No. 7 – Trench Backfill and payment for trench backfill for other sewers.

Response: Pay Item No. 7 – Trench backfill is for storm sewer pipe only. Costs for trench backfill for other pipes including the 60" relief sewer will not be paid for separately, but rather costs for trench backfill are to be included in the pay item costs for each individual pay item as indicated in the Special Provisions. Trench backfill is required for all pipes as specified in the plan documents and special provisions.

6. Clarification was requested on the use of CA11 over existing underground facilities.

Response: The MWRDGC General Notes govern the installation of bedding and covering of pipes. Therefore, all pipes are to be covered with 12" of CA11 stone.

The note on the detail on sheet 25 and specifications on Page 39 should be modified to state that CA11 is to be used 12" over all pipes.

7. Clarification was requested on the type of testing that will be required of the 60" pipe.

Response: No testing other than internal CCTV sewer inspection (televising) per Page 67 Internal CCTV Sewer Inspection is required.

Bidder's bids shall be based on the modifications listed above. Please sign and include this addendum with your proposal. This addendum will become part of the Contract Documents.

Alele Lampignano
Print Name
President
Title

Alele Lampignano
Signature
3-21-13
Date



RETURN WITH BID

Route	<u>Maple Avenue Relief Sewer</u>
County	<u>Cook</u>
Local Agency	<u>Village of La Grange</u>
Section	<u>12-00088-00-FP</u>

Time and Place of Opening of Bids

Sealed proposals for the improvement described below will be received at the office of Director of Public Works, Village
La Grange, 320 East Avenue, La Gange, Illinois 60525

until 11:00 o'clock A M., March 27, 2013 Proposals will be opened and read publicly
(address) (date)
at 11:00 o'clock A M., March 27, 2013 at the office of Director of Public Works, Village
(date)
La Grange, 320 East Avenue, La Gange, Illinois 60525
(address)

Description of Work

Name	<u>Maple Ave Relief Sewer</u>	Length	Option 1: <u>1,213</u> feet (<u>0.23</u> miles) Option 2: <u>1,558</u> <u>0.30</u>
Location	<u>Maple Avenue from Bluff Avenue to 7th Ave. (Option 1) or 6th Ave. (Option 2) in the Village of La Grange, Cook County, Illinois- see location map on the cover of the plans.</u>		

Proposed Improvement consists of HMA pavement reconstruction, water main, sanitary and storm sewer installation, rock excavation, curb and gutter, and other miscellaneous work necessary to complete the improvements.

Bidders Instructions

1. Plans and proposal forms will be available to prospective bidders at the office of the Director of Public Works, Village of La Grange, 320 East Avenue, La Grange, Illinois 60525 where paper documents can be obtained upon payment of \$80.00 (non-refundable). The Contractor is required to be IDOT prequalified to bid on this project.
2. If prequalification is required , the 2 low bidders must file within 24 hours after the letting an "Affidavit of Availability" (Form BC 57), in triplicate, showing all uncompleted contracts awarded to them and all low bids pending award for Federal, State, County, Municipal and private work. One copy shall be filed with the Awarding Authority and 2 copies with the IDOT District Office.
3. All proposals must be accompanied by a proposal guaranty as provided in BLRS Special Provision for Bidding Requirements and Conditions for Contract Proposals.
4. The Awarding Authority reserves the right to waive technicalities and to reject any or all proposals as provided in BLRS Special Provision for Bidding Requirements and Conditions for Contract Proposals.
5. Bidders need not return the entire contract proposal when bids are submitted unless otherwise required. Portions of the proposal that must be returned include the following:

a. BLR 12210 - Contract Cover	f. BLR 12230 - Proposal Bid Bond (if applicable)
b. BLR 12220 - Notice to Bidders	g. BLR 12325 – Apprenticeship or Training Program Certification (do not use for federally funded projects)
c. BLR 12221 - Contract Proposal	
d. BLR 12222 - Contract Schedule of Prices	
e. BLR 12223 - Signatures	

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

By Order of

Village of La Grange

(Awarding Authority)

Thomas Morsch

County Engineer/County Superintendent of Highways/Municipal Clerk

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

INDEX
FOR
SUPPLEMENTAL SPECIFICATIONS
AND RECURRING SPECIAL PROVISIONS

Adopted January 1, 2013

This index contains a listing of SUPPLEMENTAL SPECIFICATIONS and 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

<u>Std. Spec. Sec.</u>		<u>Page No.</u>
105	Control of Work	1
107	Legal Regulations and Responsibility to Public	2
202	Earth and Rock Excavation	4
211	Topsoil and Compost	5
407	Hot-Mix Asphalt Pavement (Full-Depth)	6
420	Portland Cement Concrete Pavement	10
424	Portland Cement Concrete Sidewalk	12
503	Concrete Structures	13
504	Precast Concrete Structures	14
540	Box Culverts	15
603	Adjusting Frames and Grates of Drainage and Utility Structures	16
610	Shoulder Inlet with Curb	18
642	Shoulder Rumble Strips	19
643	Impact Attenuators	20
701	Work Zone Traffic Control and Protection	22
706	Impact Attenuators, Temporary	24
780	Pavement Striping	26
860	Master Controller	27
1006	Metals	28
1042	Precast Concrete Products	29
1073	Controller	30
1083	Elastomeric Bearings	31
1101	General Equipment	32
1106	Work Zone Traffic Control Devices	34

CHECK SHEET
FOR
RECURRING SPECIAL PROVISIONS

Adopted January 1, 2013

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

<u>CHECK SHEET #</u>	<u>RECURRING SPECIAL PROVISIONS</u>	<u>PAGE NO.</u>
1	<input type="checkbox"/> Additional State Requirements For Federal-Aid Construction Contracts (Eff. 2-1-69) (Rev. 1-1-10)	35
2	<input type="checkbox"/> Subletting of Contracts (Federal-Aid Contracts) (Eff. 1-1-88) (Rev. 5-1-93)	38
3	<input type="checkbox"/> EEO (Eff. 7-21-78) (Rev. 11-18-80)	39
4	<input type="checkbox"/> Specific Equal Employment Opportunity Responsibilities Non Federal-Aid Contracts (Eff. 3-20-69) (Rev. 1-1-94)	49
5	<input type="checkbox"/> Required Provisions - State Contracts (Eff. 4-1-65) (Rev. 1-1-13)	54
6	<input type="checkbox"/> Asbestos Bearing Pad Removal (Eff. 11-1-03)	59
7	<input type="checkbox"/> Asbestos Waterproofing Membrane and Hot-Mix Asphalt Surface Removal (Eff. 6-1-89) (Rev. 1-1-09)	60
8	<input type="checkbox"/> Haul Road Stream Crossings, Other Temporary Stream Crossings, and In-Stream Work Pads (Eff. 1-2-92) (Rev. 1-1-98)	61
9	<input type="checkbox"/> Construction Layout Stakes Except for Bridges (Eff. 1-1-99) (Rev. 1-1-07)	62
10	<input type="checkbox"/> Construction Layout Stakes (Eff. 5-1-93) (Rev. 1-1-07)	65
11	<input type="checkbox"/> Use of Geotextile Fabric for Railroad Crossing (Eff. 1-1-95) (Rev. 1-1-07)	68
12	<input type="checkbox"/> Subsealing of Concrete Pavements (Eff. 11-1-84) (Rev. 1-1-07)	70
13	<input type="checkbox"/> Hot-Mix Asphalt Surface Correction (Eff. 11-1-87) (Rev. 1-1-09)	74
14	<input type="checkbox"/> Pavement and Shoulder Resurfacing (Eff. 2-1-00) (Rev. 1-1-09)	76
15	<input type="checkbox"/> PCC Partial Depth Hot-Mix Asphalt Patching (Eff. 1-1-98) (Rev. 1-1-07)	77
16	<input type="checkbox"/> Patching with Hot-Mix Asphalt Overlay Removal (Eff. 10-1-95) (Rev. 1-1-07)	79
17	<input type="checkbox"/> Polymer Concrete (Eff. 8-1-95) (Rev. 1-1-08)	80
18	<input type="checkbox"/> PVC Pipeliner (Eff. 4-1-04) (Rev. 1-1-07)	82
19	<input type="checkbox"/> Pipe Underdrains (Eff. 9-9-87) (Rev. 1-1-07)	83
20	<input type="checkbox"/> Guardrail and Barrier Wall Delineation (Eff. 12-15-93) (Rev. 1-1-12)	84
21	<input type="checkbox"/> Bicycle Racks (Eff. 4-1-94) (Rev. 1-1-12)	88
22	<input type="checkbox"/> Temporary Modular Glare Screen System (Eff. 1-1-00) (Rev. 1-1-07)	90
23	<input type="checkbox"/> Temporary Portable Bridge Traffic Signals (Eff. 8-1-03) (Rev. 1-1-07)	92
24	<input type="checkbox"/> Work Zone Public Information Signs (Eff. 9-1-02) (Rev. 1-1-07)	94
25	<input type="checkbox"/> Night Time Inspection of Roadway Lighting (Eff. 5-1-96)	95
26	<input type="checkbox"/> English Substitution of Metric Bolts (Eff. 7-1-96)	96
27	<input type="checkbox"/> English Substitution of Metric Reinforcement Bars (Eff. 4-1-96) (Rev. 1-1-03)	97
28	<input type="checkbox"/> Calcium Chloride Accelerator for Portland Cement Concrete (Eff. 1-1-13)	98
29	<input type="checkbox"/> Portland Cement Concrete Inlay or Overlay for Pavements (Eff. 11-1-08) (Rev. 1-1-13)	99
30	<input type="checkbox"/> Quality Control of Concrete Mixtures at the Plant (Eff. 8-1-00) (Rev. 1-1-11)	102
31	<input type="checkbox"/> Quality Control/Quality Assurance of Concrete Mixtures (Eff. 4-1-92) (Rev. 1-1-11)	110
32	<input type="checkbox"/> Digital Terrain Modeling for Earthwork Calculations (Eff. 4-1-07).....	122

CHECK SHEET
FOR
LOCAL ROADS AND STREETS RECURRING SPECIAL PROVISIONS

Adopted January 1, 2013

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

LOCAL ROADS AND STREETS RECURRING SPECIAL PROVISIONS

<u>CHECK SHEET #</u>		<u>PAGE NO.</u>
LRS 1	Reserved	125
LRS 2	<input type="checkbox"/> Furnished Excavation (Eff. 1-1-99) (Rev. 1-1-07).....	126
LRS 3	<input checked="" type="checkbox"/> Work Zone Traffic Control (Eff. 1-1-99) (Rev. 1-1-10)	127
LRS 4	<input checked="" type="checkbox"/> Flaggers in Work Zones (Eff. 1-1-99) (Rev. 1-1-07)	128
LRS 5	<input checked="" type="checkbox"/> Contract Claims (Eff. 1-1-02) (Rev. 1-1-07).....	129
LRS 6	<input checked="" type="checkbox"/> Bidding Requirements and Conditions for Contract Proposals (Eff. 1-1-02) (Rev. 1-1-13)	130
LRS 7	<input type="checkbox"/> Bidding Requirements and Conditions for Material Proposals (Eff. 1-1-02) (Rev. 1-1-13)	136
LRS 8	Reserved	142
LRS 9	<input type="checkbox"/> Bituminous Surface Treatments (Eff. 1-1-99) (Rev. 1-1-11)	143
LRS 10	Reserved	144
LRS 11	<input checked="" type="checkbox"/> Employment Practices (Eff. 1-1-99).....	145
LRS 12	<input type="checkbox"/> Wages of Employees on Public Works (Eff. 1-1-99) (Rev. 1-1-13)	147
LRS 13	<input checked="" type="checkbox"/> Selection of Labor (Eff. 1-1-99)(Rev. 1-1-12)	149
LRS 14	<input type="checkbox"/> Paving Brick and Concrete Paver Pavements and Sidewalks (Eff. 1-1-04) (Rev. 1-1-09)	150
LRS 15	<input checked="" type="checkbox"/> Partial Payments (Eff. 1-1-07)	153
LRS 16	<input checked="" type="checkbox"/> Protests on Local Lettings (Eff. 1-1-07) (Rev. 1-1-13).....	154
LRS 17	<input checked="" type="checkbox"/> Substance Abuse Prevention Program (Eff. 1-1-08)(Rev. 1-8-08)	155
LRS 18	<input type="checkbox"/> Multigrade Cold Mix Asphalt (Eff. 1-1-07) (Rev. 1-1-13).....	156

INDEX OF SPECIAL PROVISIONS

PAGE NO.

LOCATION OF PROJECT	1
DESCRIPTION OF WORK.....	1
MAINTENANCE OF ROADWAYS	1
CONSTRUCTION DEBRIS.....	1
MATERIAL INSPECTION (QC/QA POLICY).....	2
STATUS OF UTILITIES	2
WORKING HOURS	4
AWARD OF CONTRACT	4
MAINTENANCE GUARANTEE.....	4
PROTECTION OF TREES AND SHRUBS.....	4
AGGREGATE SUBGRADE IMPROVEMENT (D-1)	5
FINE AGGREGATE FOR HOT- MIX ASPHALT (HMA) (D-1).....	8
RECLAIMED ASPHALT PAVEMENT AND SHINGLES (D-1).....	8
HMA MIXTURE DESIGN REQUIREMENTS (D-1).....	19
CONCRETE STEPS	23
REMOVE AND RE-ERECT RETAINING WALL.....	23
DOMESTIC WATER SERVICE BOXES TO BE ADJUSTED	24
STORM SEWERS (WATER MAIN REQUIREMENTS)	24
SOIL DISPOSAL ANALYSIS (SPECIAL)	24
NON-SPECIAL WASTE DISPOSAL	25
TRAFFIC CONTROL PLAN	26
DUST CONTROL WATERING.....	27
PARKWAY RESTORATION	27
EXPLORATION TRENCH, SPECIAL.....	28
AGGREGATE SURFACE COURSE FOR TEMPORARY ACCESS	29
ADJUST EXISTING HANDHOLE.....	30
EXPOSE AND RELOCATE EXISTING UNIT DUCT	31
FRICTION SURFACE AGGREGATE (D1).....	31
TRENCHING, BACKFILLING AND COMPACTING FOR WATER MAIN AND SANITARY	

INDEX OF SPECIAL PROVISIONS (CONT.)

	<u>PAGE NO.</u>
SEWER:.....	35
ROCK EXCAVATION:.....	43
ROCK EXCAVATION, SPECIAL:.....	43
SANITARY SEWER TELEVISION INSPECTION, VIDEOTAPING AND RECORDING:.....	43
WATER DISTRIBUTION SYSTEM	46
WATER MAIN, H.D.D. INSTALLED	55
WATER MAIN RELOCATION	59
DUCTILE IRON WATER MAIN FITTINGS	60
GATE VALVE WITH VALVE BOX.....	60
FIRE HYDRANT	60
INSERTION VALVE WITH VALVE BOX.....	61
WATER SERVICE CONNECTION.....	62
WATER SERVICE PIPE	62
WATER MAIN ABANDONMENT.....	62
RELIEF SEWER SYSTEM.....	62
60" RELIEF SEWER	66
BASE TEE MANHOLE FITTING, 60" PIPE	67
BASE TEE MANHOLE RISER, 48" DIAMETER.....	67
PIPE CONNECTION TO BASE TEE MANHOLE, 24"	68
OVERFLOW DIVERSION SYSTEM	68
OVERFLOW DIVERSION PIPE.....	72
OVERFLOW DIVERSION STRUCTURE	73
OVERFLOW DIVERSION MANHOLE	73
RESTRICTOR PLATE	74
SANITARY SEWER SYSTEM	74
CONNECTION TO EXISTING SANITARY SEWER MANHOLE.....	82
SANITARY SEWER.....	82
SANITARY MANHOLE	83
SANITARY SEWER SERVICE CONNECTION.....	83
SANITARY SEWER SERVICE PIPE	83

INDEX OF SPECIAL PROVISIONS (CONT.)

PAGE NO.

CASING PIPE, OPEN CUT.....84

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 the Village of La Grange's Maple Avenue Relief Sewer 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 Bluff Avenue to 7TH Avenue for Option 1 and 6th Avenue for Option 2 in the Village of La Grange, Cook County, Illinois. A location map is included on the cover of the plans.

DESCRIPTION OF WORK:

The Work consists of furnishing all labor, materials, equipment, and other incidentals necessary for the completion of hot-mix asphalt pavement reconstruction, water main, sanitary and storm sewer installation, rock excavation, curb and gutter 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.

CONSTRUCTION DEBRIS:

Effective: October 18, 1999

Add the following to the third paragraph of Article 202.03 of the Standard Specifications:

“The Contractor shall not conduct any generation, transportation, or recycling of construction or demolition debris, clean or general or uncontaminated soil generated during construction, remodeling, repair, and demolition of utilities, structures, and roads that is not commingled with any waste, without the maintenance of documentation identifying the hauler, generator, place of origin of the debris or soil, the weight or volume of the debris or soil, and the location, owner, and operator of the facility where the debris or soil was transferred, disposed, recycled or treated. This documentation must be maintained by the Contractor for 3 years.”

MATERIAL INSPECTION (QC/QA POLICY):

All Hot-Mix Asphalt and P.C. Concrete materials used on this project shall be tested and inspected in accordance with the Illinois Department of Transportation’s QC/QA requirements.

The Contractor shall provide a request for QA testing to the Local Agency material inspection and testing provider by 4:00 p.m., 48 hours in advance of construction for inspection of all Hot-Mix Asphalt and concrete materials used on this project.

The Contractor is to submit a QC plan for HMA and concrete materials to the Local Agency material inspection and testing provider’s QA manager for approval prior to construction operations commencing.

QC and QA reports for concrete will be sent to and approved by the local QA manager.

QC reports for hot-mix asphalt mixtures will be transmitted directly to the local QA manager by the Contractor daily during production.

STATUS OF UTILITIES:

Name & Address of Utility Company	Location – Type	Expected Date of Completion
AT&T Legal Mandate 1000 Commercial Drive Oak Brook, IL 60523	<u>Underground Cable</u> 4+47 LT 4+83 LT 8+27 LT 11+38 LT	To be Determined
ComEd Company Southern Region 25000 Governors Highway University Park, IL 60466	<u>Utility Pole</u> 4+47 RT 7+93 RT 10+65 RT 11+40 RT 12+41 RT	To be Determined

Name & Address of Utility Company	Location – Type	Expected Date of Completion
	13+40 RT 15+05 RT	
Level 3 Communications 877-366-8344 Level3.networkrelocations@level3.com	<u>Underground Cable</u> 4+47 LT 4+83 LT 8+27 LT 11+38 LT	To be Determined
Nicor Gas 1844 Ferry Road Naperville, IL 60563	<u>Gas Main</u> 4+87 8+33 11+38 11+80 15+04	To be Determined
Comcast Cable 688 Industrial Drive Elmhurst, IL 60126	<u>Utility Pole</u> 4+47 RT 7+93 RT 10+65 RT 11+40 RT 12+41 RT 13+40 RT 15+05 RT	To be Determined

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 to the Village 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.

WORKING HOURS:

Per Village request, the Contractor shall perform all work in the Village of La Grange during hours as follows:

7:00 A.M. to 5:00 P.M. Monday through Friday; except that rock excavation by breaking/hammering and any special rock excavation shall not start before 8:00 A.M.

No work will be permitted on Saturdays or Sundays unless approval is received from the Village.

AWARD OF CONTRACT:

The Village of La Grange reserves the right to award the contract to the lowest responsible Bidder for OPTION 1 or the lowest responsible Bidder for OPTION 2, in the schedule of prices, based upon which lowest bid is in its best financial interest.

Each bidder must submit bids for both OPTION 1 and OPTION 2, to be eligible for the award of contract. Failure to do so will result in rejection of the Contractor's bid. Accompanying the proposal is either a bid bond on Department form BLR 12230 or a proposal guarantee check, complying with the specification, made payable to the Village Treasurer with an amount being 5% of the bid amount for OPTION 2.

MAINTENANCE GUARANTEE:

The Contractor shall execute and deliver to the Village of La Grange before final payment will be issued, a written warranty, in a form satisfactory to the Village, which guarantees that the work is in accordance with the Contract Documents and will not be defective. This warranty shall guarantee all underground work for a period of 3 years and all other work for a period of 1 year from the date of acceptance of the work and final payment by the Village of La Grange.

If within this guarantee period, any work is found to be defective, as determined by the Village, the Contractor shall promptly, without cost to the Village of La Grange, correct or repair such defective work, or remove and replace the defective work in accordance with the Special Provisions for the items in question.

The Contractor shall furnish a warranty bond in an amount equal to fifty percent (50%) of the contract amount, or \$25,000, whichever is greater, by a surety satisfactory to the Village to guarantee Contractor's warranty to repair defective work.

PROTECTION OF TREES AND SHRUBS:

Every effort shall be made by the Contractor when working near trees and shrubs to preserve same from harm. The Contractor shall be responsible for damage to or loss of any tree or shrub not specifically designated to be removed.

Wherever trees which are not permitted to be removed interfere with normal excavation procedures, the following shall govern. No machine excavation shall be made within a distance of three tree trunk diameters or 12 inches (whichever is greater) of any tree, and no roots over 2-inches in diameter shall be cut unless, in the opinion of the Engineer, it is impossible to complete the work without cutting. Excavation closer than three trunk diameters or 12 inches (whichever is greater) from any tree shall be made by hand, and the tree shall be tunneled where necessary as determined by the Engineer.

Damage to tree limbs shall be held to a minimum. Shrubs and tree limbs shall be tied back wherever necessary to prevent their loss or damage. Wherever damage by construction equipment to limbs and branches is unavoidable, they shall be pruned before starting work and sealed in accordance with best forestry practice.

Wherever necessary, the Contractor shall provide plank wrappers wired in place to protect tree trunks from being damaged by trench machinery, tractors or trucks. Protective planking shall be removed as soon as practical after the work in the vicinity has been completed. In removing spoil banks from around trees, hand work will be required as necessary to prevent damage to the trunks by construction machinery and shall be incidental to the contract.

Small trees (less than 4 inches in diameter) and shrubs which are removed or severely damaged during construction shall be replaced in kind and size by the Contractor. Trees larger than 1 inch in diameter shall be furnished balled and burlapped. The Contractor shall have the option of removing and replanting existing small trees and shrubs in the construction zone in lieu of replacement with new stock. All plantings shall be thoroughly watered at the time of planting and thereafter as required. All trees and shrubs planted or replanted by the Contractor which do not survive in good condition for a period of 18 months after the time of planting, shall be removed and replaced by the Contractor.

Damages at the rate of one hundred dollars (\$100.00) per inch of trunk diameter shall be charged against the Contractor for unauthorized removal or destruction of any tree 4 inches in diameter or larger. This work shall be incidental to the contract.

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.

COARSE AGGREGATE SUBGRADE GRADATIONS					
Grad No.	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	

COARSE AGGREGATE SUBGRADE GRADATIONS (Metric)					
Grad No.	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.”

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.

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 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 % Asphalt 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		
	Binder/Leveling Binder	Surface	Polymer ^{3/, 4/} Modified
Ndesign			
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 binder 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						
Ndesign	Voids in the Mineral Aggregate (VMA), % minimum					Voids Filled with Asphalt Binder (VFA), %
	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	High ESAL	All Other	IL-4.75	IL-4.75
	Low ESAL	Low ESAL			
	Individual Test	Moving Avg. of 4	Individual Test	Individual Test	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.”

CONCRETE STEPS:

Description. This work shall consist of constructing concrete steps in accordance with the applicable portions of Section 606 of the Standard Specifications and the Detail provided in the plans.

Method of Measurement. The concrete steps will be measured by the square foot as shown on the contract plans.

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

REMOVE AND RE-ERECT RETAINING WALL:

Description. This work shall consist of removing and re-erecting a flagstone retaining wall at the location shown on the contract plans and as determined by the Engineer.

Method of Measurement. The retaining wall removal and re-erection will be measured by the square foot of wall face from the top of the wall cap to the top of the leveling pad for the length of the wall as shown on the contract plans.

Basis of Payment. This work will be paid for at the contract unit price per square foot for REMOVE AND RE-ERECT RETAINING WALL, which price shall include all work as described above.

DOMESTIC WATER SERVICE BOXES TO BE ADJUSTED:

This work shall include the vertical adjustment of a cast iron extension for the domestic water service box to the finished elevation or as determined by the Engineer, and shall be done in accordance with Article 565.03 of the Standard Specifications. Sufficient space and length along the extension must be provided in order to freely raise or lower the extension. Extreme care shall be taken to keep the inside of the extension and box completely free of any material which would prevent the opening and closing of the water valve.

Basis of Payment. This work will be paid for at the contract unit price each for DOMESTIC WATER SERVICE BOXES TO BE ADJUSTED.

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”. Ductile iron pipe shall meet the requirements of ANSI A21.51, thickness of Class 52, with joints meeting ANSI A21.11. Cement linings shall meet the requirements of ANSI A21.4 or AWWA C104, standard thickness.”

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.”

SOIL DISPOSAL ANALYSIS (SPECIAL):

Description. Comply with the requirements of Section 22.51(f)(2)(B) and 22.51a(d)(2)(B)

of the Illinois Environmental Protection Act ([415 ILCS5/22.51(f)26(B)] and [415 ILCS5/22.51a(d)(2)(B)]) for the disposal of uncontaminated soils including uncontaminated soil mixed with other clean construction or demolition debris (CCDD) materials. Provide soil testing and professional engineering services needed to certify the uncontaminated soils (LPC-663).

Basis of Payment. The work will be paid for at the lump sum contract price for SOIL DISPOSAL ANALYSIS (SPECIAL) which price will be payment in full for all work required to complete the work as described above.

A Form LPC-663 signed by the municipality is not provided in these contract documents. The municipality will not provide a signed Form LPC-663.

No additional payment will be made for any additional soil disposal costs if the soil disposal site chosen by the Contractor rejects loads due to photo ionization readings greater than zero. **Photoionization detector (PID) readings are not acceptable results for determining classification of the excavated material.** Should a licensed landfill reject any load, analytical chemical testing shall be performed on the excavated material by an IEPA National Environmental Laboratory Accreditation Program (NELAP) approved laboratory on representative samples obtained in accordance with standard IEPA protocol and frequencies. The analytical chemical testing shall be completed by a qualified, independent testing agency hired and paid for by the Contractor. SW-846 Analytical Laboratory Procedures (USEPA) methods will be used for analysis. If the test results are inconclusive, or when the test results indicate levels that do not exceed the Residential Tier 1 Soil and/or Class One Groundwater Remediation Objectives (SRO & GRO) presented in 35 Illinois Administrative Code 742 (IAC) the removal and disposal of the excavated material shall be classified as EARTH EXCAVATION or REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL. The Contractor shall be responsible for transporting this material to a site that will accept the material. No additional compensation will be allowed for this testing or disposal.

When test results indicate that the materials exceed said SROs and GROs objectives, the material shall be classified as Non-Special Waste and paid for as NON-SPECIAL WASTE DISPOSAL. All costs for excavation, testing and transportation and disposal shall be included in the cost of SOIL DISPOSAL ANALYSIS (SPECIAL).

NON-SPECIAL WASTE DISPOSAL:

This work shall be performed in accordance with Section 669 of the Standard Specifications, except as modified herein.

669.01 Description. Add the following to the end of the first paragraph:

“Any cost associated with testing material for classification as NON-SPECIAL WASTE will be paid for by the contractor. PID meter results will not be allowed to classify material as

Special Provisions
101123.40

Village of La Grange
Maple Avenue Relief Sewer Design
Section No.: 12-00088-00-FP

NON-SPECIAL WASTE.”

669.16 Basis of Payment. Add the following to the end of the second paragraph:

“A quantity has been added to the contract in the event that excavated soil tests positive for contamination and for that reason is not accepted by the contractor’s landfill. In the event that no contaminated soil is detected, the quantity will be deducted from the contract and no additional compensation will be due to the Contractor. ”

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: 701301, 701311, 701501, 701701, 701801, 701901

DETAILS:

Traffic Control and Protection for Side Roads, Intersections, and Driveways (TC-10)
Pavement Marking Letters and Symbols For Traffic Staging (TC-16)

SPECIAL PROVISIONS (Included in these Special Provisions):

Maintenance of Roadways
Work Zone Traffic Control (LRS 3)
Flaggers in Work Zones (LRS 4)
Flaggers at Side Roads and Entrances (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. Advanced notice shall be provided to residents, police, fire, school districts and trash haulers when access to any street will be temporarily closed or limited. Removal and replacement of curb and gutter and driveways shall be planned so as to cause a minimum of inconvenience to the abutting property owners. The work shall be accomplished such that the streets will be left open to local traffic at the end of each working day.

Unless otherwise indicated in Section 701, the above standards, details and special provisions shall be considered included in the contract.

DUST CONTROL WATERING:

This work shall consist of the exclusive control of dust resulting from construction operations by the uniform application of sprinkled water. DUST CONTROL WATERING shall be performed when directed by the Engineer. All equipment used for this work shall be approved by the Engineer prior to beginning the work and shall be equipped with adequate measuring devices for metering the exact amount of water discharged.

Method of Measurement. Dust Control Watering will be measured for payment in units of 1000 gallons of water applied. All water used shall be properly documented by ticket or other approved means.

Basis of Payment. This work will be paid for at the contract unit price per unit for DUST CONTROL WATERING.

PARKWAY RESTORATION:

This work shall be done in accordance with Sections 211 and 252 of the Standard Specifications and the Details provided in the Plans, except where modified herein.

Description. The purpose of this work is to restore the areas disturbed by construction and/or to provide proper drainage in the parkways.

This work shall include restoring disturbed areas within the construction limits, removing excess backfill material, furnishing and placing topsoil in accordance with Section 211, compacting and grading to maintain positive slope, and sodding the areas in accordance with Section 252. Care should be taken to insure proper compaction as the Contractor will be responsible for repair of any areas where settlement occurs."

211.02 Materials. Add the following to the end of the Article:

"Topsoil shall be a loamy mixture of black dirt having at least 90 percent passing a No. 10 sieve, and shall be free of large roots, brush, sticks, weeds, stones larger than 1/2-inch in diameter and any other litter. Topsoil, pH shall not be lower than 4.5 nor higher than 8.5 as determined in accordance with ASTM procedures for soil testing.

211.04 Placing Topsoil and Compost. Add the following to the end of the Article:

"The topsoil shall be spread to a smooth, compacted uniform thickness of not less than 4 inches."

252.03 Ground Preparation. Add the following to the end of the Article:

"The removal of any excess backfill material shall be included in the pay item for PARKWAY RESTORATION.

Fertilizer nutrients shall be applied in accordance with Section 252.03 of the Standard Specifications and shall be included in the pay item for PARKWAY RESTORATION."

252.06 Placing Sod. Add the following to the end of the Article:

"The Contractor shall provide subsequent resodding until a satisfactory growth of grass is produced or if settlement occurs."

211.07 and 252.12 Method of Measurement. Delete the final paragraph of Article 252.12, Replace Article 211.07 and the first paragraph of 252.12 with the following:

"Method of Measurement. This work will be measured for payment in place, and the area computed in square yards. To be acceptable for final payment, the sod shall be growing in place for a minimum of 30 days in a live, healthy condition."

211.08 and 252.18 Basis of Payment. Delete the final paragraph of Article 252.13, Replace Article 211.08 and the first three paragraphs of 252.13 with the following:

"Basis of Payment. This work will be paid for at the contract unit price per square yard for PARKWAY RESTORATION."

EXPLORATION TRENCH, SPECIAL:

This work shall consist of constructing a trench for the purpose of verifying clearances and locations of existing private and public utilities and storm sewers. The exploration trench shall be constructed at the locations as directed by the Engineer and in accordance with Article 213.02 of the Standard Specifications, except as modified herein.

The depth of the trench shall be variable, but shall be deep enough to locate all potential conflicts. The width of the trench shall be sufficient to allow proper investigation of the entire trench.

Method of Measurement. This work will be measured for payment per foot of actual trench constructed.

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

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 course 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”.

ADJUST EXISTING HANDHOLE:

Description. This work shall consist of bringing to grade a handhole at locations shown on the plans or as determined by the Engineer. This work shall be in accordance with applicable portions of Sections 801, 814 and 816 of the Standard Specifications.

The work shall consist of excavating around the existing handhole, temporarily disconnecting or removing any cables, unit duct or conduit from the handhole, removing the handhole, excavating and installing an 18” thick aggregate base (CA 5 or CA 7), reinstalling the handhole to finished grade, reinstalling any unit duct, conduit and cables, and backfilling around the handhole. Care shall be taken not to damage the existing handhole, cables, unit duct or conduit. Any damaged handhole, cables, unit duct, or conduit shall be replaced or repaired at the contractor’s expense as determined by the Engineer.

This work shall also include any vertical adjustment of the conduit or unit duct required to connect to the new handhole elevation.

No extra compensation will be paid to the Contractor for any incidental materials and labor required to fulfill the requirements as specified herein.

The roadway lighting system can be disabled only during daytime hours and while work on this pay item is in progress. Under no conditions shall the lighting system be disabled during its’ normal period of operation.

Basis of Payment. This work will be paid for at the contract unit price each for ADJUST

EXISTING HANDHOLE.

EXPOSE AND RELOCATE EXISTING UNIT DUCT:

Description. This item shall consist of locating, exposing, and relocating existing unit duct servicing the existing lighting system.

Materials. The materials used for any new cable runs or new connections are considered incidental to this pay item. All materials required to locate, expose, and relocate the existing unit duct shall be included in this pay item.

Installation. The roadway lighting system can be disabled only during daytime hours and while work on this pay item is in progress. Under no conditions shall the lighting system be disabled during its' normal period of operation.

The locations of the existing unit duct are not known. The contractor shall contact JULIE for locates of any utilities in the construction zone. The contractor shall be responsible for preserving the integrity of any other utilities encountered during this process.

The contractor shall perform this work in accordance with the Standard Specifications for Road and Bridge Construction, the special provisions or as directed by the Engineer. The Expose and Relocate Existing Unit Duct and any other associated provisional installation shall be inspected and approved by the Engineer prior to placing the lighting system in operation.

The contractor is responsible for restoration, including any grading or sodding, of all areas disturbed under this contract to the satisfaction of the Engineer.

Method of Measurement. Expose and Relocate Existing Unit Duct complete as specified and as indicated on the plans, will be measured per foot for payment.

No extra compensation will be paid to the Contractor for any incidental materials and labor required to fulfill the requirements as shown on the plans and specified herein.

Basis Of Payment. This work will be paid for at the contract foot price for EXPOSE AND RELOCATE EXISTING UNIT DUCT.

FRICITION 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
Class A	Seal or Cover	<u>Allowed Alone or in Combination:</u> Gravel Crushed Gravel Carbonate Crushed Stone Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Steel Slag Crushed Concrete
HMA All Other	Shoulders	<u>Allowed Alone or in Combination:</u> Gravel Crushed Gravel Carbonate Crushed Stone Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) ^{1/} Crushed Steel Slag ^{1/} Crushed Concrete

Use	Mixture	Aggregates Allowed														
HMA High ESAL Low ESAL	C Surface IL-12.5,IL-9.5, or IL-9.5L	<u>Allowed Alone or in Combination:</u> Crushed Gravel Carbonate Crushed Stone Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) ^{1/} Crushed Steel Slag ^{1/} Crushed Concrete														
HMA High ESAL	D Surface IL-12.5 or IL-9.5	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2"><u>Allowed Alone or in Combination:</u></th> </tr> </thead> <tbody> <tr> <td colspan="2"> 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> <th colspan="2"><u>Other Combinations Allowed:</u></th> </tr> <tr> <th><i>Up to...</i></th> <th><i>With...</i></th> </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>75% Limestone</td> <td>Crushed Slag (ACBF)^{1/} or Crushed Sandstone</td> </tr> </tbody> </table>	<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		<u>Other Combinations Allowed:</u>		<i>Up to...</i>	<i>With...</i>	25% Limestone	Dolomite	50% Limestone	Any Mixture D aggregate other than Dolomite	75% Limestone	Crushed Slag (ACBF) ^{1/} or Crushed Sandstone
<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																
<u>Other Combinations Allowed:</u>																
<i>Up to...</i>	<i>With...</i>															
25% Limestone	Dolomite															
50% Limestone	Any Mixture D aggregate other than Dolomite															
75% Limestone	Crushed Slag (ACBF) ^{1/} or Crushed Sandstone															

Use	Mixture	Aggregates Allowed		
HMA High ESAL	F Surface IL-12.5 or IL-9.5	<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.		
		<u>Other Combinations Allowed:</u>		
		<table border="1"> <thead> <tr> <th><i>Up to...</i></th> <th><i>With...</i></th> </tr> </thead> <tbody> <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> </tbody> </table>	<i>Up to...</i>	<i>With...</i>
<i>Up to...</i>	<i>With...</i>			
50% Crushed Gravel, or Dolomite	Crushed Sandstone, Crushed Slag (ACBF) ^{1/} , Crushed Steel Slag ^{1/} , or Crystalline Crushed Stone			
HMA High ESAL	SMA Ndesign 80 Surface	Crystalline Crushed Stone Crushed Sandstone Crushed Steel Slag ^{1/}		

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."

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, sanitary sewer, relief sewer, and overflow diversion systems in accordance with the "Standard Specification for Water and Sewer Main Construction in Illinois", MWRDGC requirements, and Village of La Grange standards.

QUALITY ASSURANCE: Use adequate numbers of skilled workmen thoroughly trained and experienced in the necessary crafts and 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 quantities 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 the IDOT "Standard Specifications" gradation No. CA 11, or the Standard Specifications for Water and Sewer Construction in Illinois, with the following gradation:

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

- A. For flexible thermoplastic pipes: Comply with ASTM D2321, Class I or II as modified below.
 - 1. Exclude sharp angular granular materials.
 - 2. Limit maximum particle size to 1/2 inch (IDOT CA 15).
 - 3. Do not use Class II materials in wet conditions.
- B. 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 either sand, pit run gravel, or granular material.

Sand: Well graded, free from organic matter, cohesionless, complying with the Section 1003 in the IDOT Standard Specifications for gradation FA-6.

Pit Run Gravel: Free from organic matter, cohesionless granular material obtained from natural deposits of sand and gravel, passing ¾" sieve, and not more than 15% passing the No. 200 sieve.

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

FLOWABLE FILL TRENCH BACKFILL MATERIALS: Provide controlled low-strength material (CLSM) where shown on the Drawings.

CLSM: Provide a portioned cement, fly ash, fine aggregate and water mix. Comply with IDOT Section 593 for Controlled Low-Strength Material, Backfill for material mix design criteria, and testing.

Acceptable products:

Geofill by MixOnSite.
Or equal.

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 the IDOT "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.

- A. Acceptable manufacturers:
1. Mirafi: 160N.
 2. Synthetic Industries: 601.
 3. Amaco: 4551.

WATER MAIN REPAIR:

- A. Repair water main or water services damaged during construction utilizing products of type and manufacturers as approved by the Village.
- B. Pipe couplings for joining of sections of cut water main where a section of new pipe is used to replace a broken pipe.
1. Acceptable manufacturers:
 - a. Dresser Style 38.
 - b. Smith-Blair CC-441.
 - c. Or equal.

- C. Repair clamps for broken or cracked pipe and sealing of existing corporation stop opening.
1. Use full-circle single band all stainless steel clamps.
 2. Acceptable manufacturers:
 - a. Dresser Style 360.
 - b. Smith-Blair 200 Series.
 - (1) Or equal.
 3. 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.

GENERAL CONSTRUCTION REQUIREMENTS:

- A. Protection of existing facilities:
1. 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.
 2. 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.
 3. Make arrangements to locate, maintain, protect, and/or relocate facilities to complete the Work.
 4. Make such exploration as is necessary to determine the exact location of underground utilities.
 5. Exercise care during the progress of work in the area to prevent damage to the utilities.
 6. 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.
 7. Wherever it becomes necessary to relocate water or other pipes or conduits which are not shown on the Plans, and which are in direct conflict with the proposed pipe, obtain the direction from the Engineer for the relocation. Compensation will be allowed only for such quantities as determined by the Engineer.
 8. Do not obstruct accessibility of fire hydrants.

TRENCHING:

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

1. Remove temporary sheeting and bracing after backfilling to an elevation which will prohibit caving of exposed sidebanks.
 2. Fill voids left by the withdrawal of sheeting with compacted sand.
 3. The Engineer may direct that supports in trenches be cut off at any specific elevation to protect adjacent facilities or property. Compensation for support left in place will be negotiated.
 4. No extra payment will be made for the supports left in place without the direction of the Engineer.
 5. Do not leave supports within 4 feet of the ground or pavement surface in place without the permission of the Engineer.
- C. 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.
- D. Excavation:
1. Excavate by open cut unless otherwise indicated on the Plans.
 2. Excavate trenches to the depths and grades necessary for the pipelines with allowances for bedding material.
 3. 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.
4. Comply with the following maximum trench widths at the top of pipelines:

<u>Nominal Pipe Sizes (inches)</u>	<u>Trench Widths (inches)</u>
12 or smaller	30
14 - 18	36
20 - 24	42
27 - 30	48
33 and larger	1-1/3 times outside diameter of pipe

EXCAVATION FOR APPURTENANCES:

- A. 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 structure surfaces and the embankment or shoring that may be used to hold and protect the banks.
- B. 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:

- A. Provide compacted granular pipe bedding and covering material with a minimum thickness of 4 inches under pipe barrels and 2 inches under bells.
- B. 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 the IDOT "Standard Specifications" gradation No. CA 1 as determined by the Engineer.
 - 1. 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.
- C. Wherever the trench is over excavated to remove unsuitable material, install geotechnical fabric between native soil and granular material:
 - 1. Install fabric to cover bottom and sides of trench to heights as follows:
 - a. 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.
 - b. For rigid pipe 27-inch and larger: To cover bedding material and from sides of trench to edge of pipe.
 - c. Where undercut is of a depth that requires more than one piece of fabric to provide envelope, provide sewn seams between sections of fabric.
- D. 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:

- A. 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:
 - 1. For pipes sizes 24-inch and smaller, except flexible thermoplastic pipe: To 4 inches above the top of the pipe.
 - 2. For pipes sizes 27-inch and larger: To the horizontal centerline (springline) of the pipe.
 - 3. For flexible thermoplastic pipes: To 12 inches above the top of the pipe.
- B. Place granular pipe bedding and covering material in uniform loose layers not exceeding 8 inches thick.
 - 1. 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.
- C. 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:

- A. Backfill with excavated materials in uniform loose layer not exceeding 12 inches thick.
- B. 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:

- A. Backfilling with granular backfill materials:
1. Place in uniform loose layer not exceeding 12 inches thick and compact with vibrating roller or equivalent.
 2. Water jetting may not be used in lieu of vibratory compaction.
 3. 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.
- B. Compacting requirements:
1. 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.
 2. Determine the density of compacted backfill at intervals of not more than 500 feet at locations selected by the Engineer.
 3. Provide the services of an independent testing laboratory for the density tests.
- C. Maintain temporary pavement level with adjoining pavement surfaces until the permanent pavement is placed.

BACKFILL AND BEDDING FOR APPURTENANCES:

- A. Provide 3 inches of sand or granular bedding material unless otherwise shown on the Plans.
- B. Do not backfill until new concrete has properly cured, and any required tests have been accepted.
- C. Backfill in lawns and landscaped areas with excavated materials.
- D. Backfill in pavement around manholes, catch basins, inlets, valve vaults, and other structures as determined by the Engineer with granular backfill materials.

FINISH GRADING:

- A. Provide finish grading and filling to achieve the lines and grades.
- B. Slope grades to drain away from structures.
- C. 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.
- D. Fill and compact depressions from settlement and round tops of embankments and breaks in grade.
- E. 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.
- F. Remove unsuitable and surplus excavated materials not used for backfilling from the project site.
- G. 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:

- A. 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.
- B. Remove the temporary pavement surface at the time of permanent pavement construction.

WATER MAIN REPAIR:

- A. 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.
- B. Contact the Engineer and Village immediately to report the location and extent of the damage.
- C. 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.
- D. Use only materials of repair as noted in the products section of this specification or as dictated by the Village.
- E. 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.
- F. Comply with disinfection requirements as dictated by the Village.
- G. Do not cover the repair until work is inspected and approved by Village.

ROCK EXCAVATION AND SPECIAL ROCK EXCAVATION:

- A. Definitions:

1. Rock excavation is defined as excavation of rock requiring ripping with a ripper blade/tooth mounted on an excavator or breaking/hammering with a pneumatic or hydraulic hammer mounted on an excavator to remove solid rock formations such as bedrock, boulders, concrete, or solid masonry exceeding one cubic yard in volume.
 2. Special rock excavation is defined as excavation of rock by low vibration methods such as manual jack hammering, manual sawcutting, drilling holes and filling those holes with expandable grout, or other means and methods selected by the Contractor to remove solid rock formations such as bedrock, boulders, concrete, or solid masonry exceeding one cubic yard in volume. Special rock excavation will only be necessary when determined and authorized by the Village and/or Engineer.
 - a. If the Contractor chooses to use a low vibration method(s) of rock excavation without the authorization and without the approval of the Village and/or Engineer, then the rock excavation done with low vibration method(s) will be paid for as ROCK EXCAVATION.
- B. Rock which can be removed with an excavator/backhoe bucket alone will **not** be considered for rock excavation or special rock excavation.
- C. Blasting shall **NOT** be used as a means or method for any rock excavation or special rock excavation.
- D. If a rock excavation method, or a special rock excavation method, used by the Contractor results in excessive or unacceptable levels of vibration, the Contractor shall stop operations and use a method producing less vibration or use a vibration free method when directed by the Village and/or the Engineer.
 1. Whether a method of rock excavation results in excessive or unacceptable levels of vibration will be determined by the Village and/or the Engineer.
 - a. Determinations will be based on complaints by property owners, a noticeable vibration of windows, a noticeable vibration of objects within a building or buildings, and/or actual damage to private property adjacent to or near the construction site or rock excavation/special rock excavation equipment.
 - b. Determinations will also consider the project schedule, alternative means and methods of rock excavation, cost, and other project conditions.
- E. Allowable trench width for open cut trench rock excavation and special rock excavation:
 1. For pipes up to 18 inches nominal size: 30 inches.
 2. For larger pipes: 1-1/3 times the outside diameter of the pipe.

3. Manholes and similar structures not requiring formwork: 12 inches outside such structures.
- F. Install pipelines constructed in rock trenches on an 8" thick continuous bed of compacted pipe bedding material to the grades shown on the Drawings.
1. Dispose of excavated rock: Do not use as, or as part of, trench backfill.

ROCK EXCAVATION:

Description. This work consists of fracturing rock with a ripper blade/tooth and/or a breaker/hammer mounted on the excavator, removing the rock with an excavator bucket, and hauling and disposing of the rock. This work shall be in accordance with the applicable portions of Section 202 of the Standard Specifications.

Method of Measurement. This work will be measured in its original position and the volume computed in cubic yards. The Contractor and the Engineer shall agree to the limits of the rock excavation and the depths/elevations of the rock requiring rock excavation.

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

ROCK EXCAVATION, SPECIAL:

Description. This work consists of fracturing rock by means and methods that result in minimal vibration selected by the Contractor including, but not limited to; drilling small diameter holes and using expanding cementitious grout; rotary cutters for rock cutting; rock saws and sawing; cutter buckets; chain trenching; or manual jackhammering or manual sawcutting; and then removing the rock with an excavator bucket, and hauling and disposing of the rock. This work shall be in accordance with the applicable portions of Section 202 of the Standard Specifications.

Method of Measurement. This work will be measured in its original position and the volume computed in cubic yards. The Contractor and the Engineer shall agree to the limits of the special rock excavation and the depths/elevations of the rock requiring special rock excavation.

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

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 the existing combined sewer to be replaced with a new sanitary sewer along and paralleling Maple Avenue. The intent and

purpose of the work is to locate existing sanitary sewer service, both horizontally and vertically, prior to installing the proposed water main by horizontal directional drilling methods. The work shall include digital recording of the work on DVDs and delivery of one copy of all DVDs to both the Owner 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 Owner's representative. The equipment, and procedures, for this work shall include a Lateral Launch System, or 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 to be crossed with the proposed water main, 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. Re-televiser sewers for as many times as required to obtain sanitary sewer service pipe locations.
 - b. Re-televiser any sewer section where final inspection DVDs are of poor 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", and Village of La Grange standards, 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.

- A. Pipe:
 1. Provide 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/AWWA, C104/A21.4 standard thickness.
 2. Provide restrained joint pipe system, where indicated on the Plans, that utilizes one of the following methods:
 - a. Lock rings welded into place around pipe barrel.
 - b. Bolted rings installed around pipe barrels that fit inside pipe bells.
 - c. Gaskets which include stainless steel locking segments vulcanized into the gasket.
 - d. 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 setpoint type retainer glands.
 - e. Acceptable products:
 - (1) American Fastite, Flex-ring, Lok-ring, and MJ coupled joint.

- (2) Clow Tyton Joint – Type A or Type B, and Super-Lock.
 - (3) U.S. Pipe TR-Flex Gripper.
 - (4) Griffin Bolt Lok or Snap Lok.
 - (5) Field Lok or Fast Grip Gasket Systems.
 - (6) 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.
- B. Fittings:
- 1. Use ductile iron fittings with mechanical joint complying with ANSI A21.10 or A21.53.
 - 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.
- C. 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. Minimum film thickness and material type (LLDPE or HDCLPE).
 - d. Applicable range of nominal pipe diameter size(s).
 - e. Warning – Corrosion Protection – Repair Any Damage.

VALVES: Provide valves with clockwise closing direction.

- A. Gate valves:
- 1. Valves 4-inch to 20-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 mechanical joint ends for all valves.
 - a. Provide restrained type joints for all mechanical joint end valves.
 - 3. Acceptable valve manufacturers:
 - a. Clow Model 2638;
 - b. Mueller 2360 Series ;
 - c. Or approved equal.

FIRE HYDRANTS:

- A. Comply with AWWA C502.
- B. Paint fire hydrants in Safety Yellow color as approved by the Village.
- C. Match the fire hydrants generally installed in the Village's water system.
 - 1. Acceptable manufacturers:
 - a. Clow F-2500;
 - b. Mueller Super Centurion 250
 - c. Or approved equal.
- D. Materials:
 - 1. Provide compression type with a 5¼-inch and minimum size main valve assembly, O-ring seals, two 2½-inch hose nozzles, and a 4½-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 valve and the tee fitting.
 - (1) Auxiliary valves shall match water main valves in all respects.
 - 3. Provide valve boxes with cover marked with the word "WATER".
 - a. Bituminous coated carbon steel valve extension stems and 2-inch square operating nuts 2 inches below cover.
 - 4. Provide valve box stabilizers on all fire hydrant auxiliary valves.
 - a. Acceptable manufacturers:
 - (1) Alberico
 - (2) American Flow Control
 - (3) Adaptor, Inc.
 - (4) Or approved equal.

WATER SERVICES:

- A. Provide corporation stops, curb stops, service boxes, and water service tubing.
- B. Materials:
 - 1. Service saddle: Mueller SS Series Stainless Steel Service Saddle with double studs and AWWA taper (C.C.) boss.
 - 2. Corporation stops: Mueller No. B25000 or No. 25008, or approved equal with flare or compression connection.
 - 3. Curb stops: Mueller No. B25154 or No. 25155, or approved equal, with flare or compression connections and Minneapolis threaded top.
 - 4. Service boxes: Mueller No. H10300 with Minneapolis pattern base, or approved equal, with a brass plug in cover and stationary rod (extension stem).
 - 5. Service lines: Type K soft temper seamless copper water tubing complying with ASTM B-88.

TAPPING SLEEVES AND VALVES:

- A. 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:
 - a. Ductile iron: Clow F-5205, or approved equal.
 - b. Stainless steel: Cascade CST extra heavy duty.
 - c. Or approved equal.
- B. 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 ADAPTOR:

- A. Provide a ductile iron flange adaptor dual ring system with bolt circles compatible with 125#/Class 150 bolt pattern.
 - 1. Provide adaptor with individual actuated gripping wedges that utilize torque limiting screws to insure proper initial set.
 - 2. Set screw "only" restraining adaptors are not acceptable.
 - 3. Provide system that allows joint deflection of up to 5°.
 - 4. Provide a fluoropolymer coating to the wedge and wedge assembly and powder coating to the restraint body.
- B. Acceptable Manufacturers:
 - 1. Series 2100 Magaflange by Ebaa Iron;
 - 2. Or approved equal.

CONSTRUCTION REQUIREMENTS

PIPE INSPECTION, HANDLING, STORAGE, AND INSTALLATION: Install in accordance with pipe manufacturer's recommendations.

- A. Ductile iron water mains and appurtenances:
 - 1. Comply with AWWA C-600.
 - 2. Protect pipe and fittings by loose wrapping or tubing with polyethylene sheet.
 - 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.

OPERATION OF APPURTENANCES: Only Village of La Grange Public Works Department employees 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 Owner's Public Works Department is required for any water disruptions.

DEPTH OF PIPE COVER: Install water mains and water service lines with a minimum depth of cover of six feet below finished grade ground level unless otherwise indicated on the Plans.

- A. Where new mains cross existing mains, install new main below existing main unless otherwise indicated on the Plans.

CONNECTIONS TO EXISTING WATER MAINS:

- A. Make connections to existing mains.
- B. Use non-pressure connections, except where pressure connections are shown on the Plans or required by conditions at the time of construction.
- C. Make one connection at a time except as approved by the Engineer.

PIPE RESTRAINING SYSTEMS:

- A. General:
 - 1. Provide protection from movement of water main piping, plugs, caps, tees, valves, fire hydrants, and bends.
 - 2. Provide concrete thrust blocks only where restrained joint type fittings do not provide adequate pipe restraint.
 - 3. Where restrained joint type fittings are called for on the Plans, but cannot be used, provide concrete thrust blocks.
- B. Restrained type pipe and fittings:
 - 1. Provide restrained joint pipe, fittings, valves, etc. for the entire project.
- C. 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.
 - 4. Sides of thrust blocking not subject to thrust may be placed against forms.
 - 5. Place thrust blocking so the fitting joints will be accessible for repair.

SEWER CROSSING: Separate water mains and water service lines from sanitary sewer, storm sewers, combined sewers, house sewer service connections, and drains in accordance with the "Standard Specifications for Water and Sewer Main Construction in Illinois".

- A. Water mains:
1. Wherever water mains cross storm sewers, sanitary sewers, or sewer service connections:
 - a. Install the water main so that its invert is 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 specification 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 or carrier 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 main or service lines through sewer manholes.

FIRE HYDRANT INSTALLATION:

- A. Install fire hydrants 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 bases and auxiliary valve on a precast concrete block to provide firm support for the base.
- B. 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.
- C. Brace the fire hydrant barrels during backfilling. Do not block the drain hole in hydrant.

- D. 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.
- E. Place and compact backfill materials in 6-inch layers around the hydrant and auxiliary gate valve.
- F. Cover new fire hydrants with plastic bags until new system is in service.

WATER SERVICE CONNECTION:

- A. Make service connections at locations shown on the Plans or determined by the Engineer at the time of construction.
- B. 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.
- C. Set curb stop on a precast concrete block.
- D. Do not splice the water service pipe.
- E. Connect new water service to existing service pipe adjacent to and on residence side of service box.
- F. 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.
- G. 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.
 - 4. Wrap the corporation stop and a minimum distance of 3 feet of the copper service pipe with polyethylene wrapping/tubing.

PRESSURE CONNECTION:

- A. 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.
- B. Minimum tap hole diameter for pipe 12-inch or smaller will be ½ inch less than the nominal pipe diameter.
- C. Open tapping valve to flush any foreign material after completion of the pressure tapping.

POLYETHYLENE WRAPPING OF DUCTILE IRON PIPE AND APPURTENANCES:

- A. 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. Wrap all water mains, fittings, valves, fire hydrant leaders, fire hydrants, and service lines.

- a. Wrap copper service lines to a point 3 feet from center of water main.
- b. Do not block fire hydrant weep hole.

TESTING AND INSPECTING:

- A. Hydrostatic tests:
 1. Devise a method for disposal of waste water from hydrostatic tests and from disinfection, as approved in advance by the Engineer.
 2. Where any section of water main is provided with concrete thrust blocking for fittings, do not make hydrostatic tests until at least 5 days after installation of concrete thrust blocking, unless otherwise approved by the Engineer.
- B. Pressure tests:
 1. Subject the new water mains and service lines, including valves and fire hydrants, to a hydrostatic pressure of 150 pounds per square inch.
 2. Hold the test pressure for a duration of one (1) hour without pressure loss or further pressure application.
 3. Carefully examine exposed pipe, joints, fittings, and valves.
 4. Replace or remake joints showing visible leakage.
 5. 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.
 6. Make repair and replacement without additional cost to the Village.
 7. Use only solid stainless full-body repair clamps as approved by the Engineer.
- C. 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 a 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:
$$\text{gph} = LD (P^{1/2})/133,200$$
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.

- D. 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.

PRELIMINARY FLUSHING:

- A. Prior to disinfection, flush main as thoroughly as possible.
1. Flush main until water runs clear.
 2. Provide a minimum flushing velocity of 2.5 feet per second in the water main.
- B. Coordinate time of flushing with Owner and Engineer, at least 72 hours in advance of flushing.
1. 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".

- A. Forms of applied chlorine:
1. Apply chlorine by gas feed or solution feed chlorinator, as approved by the Owner.
 2. Provide effective diffusion of the gas or solution into the water within the water main.
 3. Provide means for preventing the backflow of water into the feeder.
- B. Chlorine solution.
1. Apply solution of sodium hypochlorite into one end of the section of main to be disinfected while filling the main with water.
- C. 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.
- D. 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.
- E. 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:

- A. Abandon water mains indicated on the Drawings 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.
- B. 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.
- C. Provide ductile iron plugs, caps, or other necessary fittings, and thrust blocking, on ends of portions of existing water mains that are to remain in service.
- D. Close existing water valves only with the permission of the Engineer.
- E. Remove valves, and valve boxes at the top of the existing valve, and fill excavation with compacted special granular material.
- F. Remove valves, and valve vaults to top of lowest pipe, and backfill with compacted special granular backfill material.
- G. Remove fire hydrants in total, including auxiliary box, and backfill excavation with compacted special granular backfill material.
- H. Deliver valves, valve boxes, fire hydrants, and frames and grates to the Village's Public Works Department.
- I. Removal of existing water mains that are 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.

WATER MAIN, H.D.D. INSTALLED:

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 Drawings.

CONSTRUCTION REQUIREMENTS

SUMMARY: Provide Ductile Iron water main pipe and install by the trenchless horizontal directional drilling method as shown on the Drawings; 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"; as specified in the WATER DISTRIBUTION SYSTEM Section of these Special Provisions; 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 thoroughly trained and experienced in the necessary crafts and completely familiar with the specified requirements and methods needed for proper performance of the work of this Section.

PIPE:

- A. Provide ductile iron pipe matching the ductile iron pipe described above in this Special Provision.
- B. Polyethylene sheet: Comply with ANSI/AWWA C105/A21.5-99:
 1. Thickness: Linear low-density polyethylene film (minimum 8 mil thickness) or High-density cross laminated polyethylene film (minimum 4 mil thickness).
 2. Markings: The following information will be clearly marked on the sheet at minimum increments of 2 feet along its length.
 - a. Manufacturer's name or trademark.
 - b. Year of manufacture.
 - c. Minimum film thickness and material type (LLDPE or HDCLPE).
 - d. Applicable range of nominal pipe diameter size(s).
 - e. Warning – Corrosion Protection – Repair Any Damage.

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.

- A. 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.
- B. Provide recovery system that will recover bentonite slurries or other drilling fluids without releasing the slurry onto the surrounding ground or water surfaces.
- C. 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.

- A. Although most horizontal directional drilling is done without the use of pits, if pits are required, comply with the following criteria.
- B. Provide pits as required to install and receive pipes.
 - 1. Provide tight sheeting where required to provide protection to public, permitting agency and public property, and adjacent utilities.
 - 2. Comply with OSHA requirements for type, installation, and removal of sheeting.
 - 3. Provide fencing around pits to secure the area and to provide protection to the public.
- C. Provide pits of length and width as necessary to install pipes and sized to fit area available for Work.
- D. Provide dewatering as required to allow excavation of pits and installation of pipes.
 - 1. Provide protection to environment from erosion or sedimentation resulting from all pumping operations.
- E. Backfilling of pits:
 - 1. Backfill with compacted granular backfill materials where required.
 - 2. Remove all construction debris, materials, excess excavated material, and sheeting from construction area upon completion of the Work.

POLYETHYLENE WRAPPING OF DUCTILE IRON PIPE:

- A. 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 pipe pullback.
 - 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 4 mil HDCLPE 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.

LOCATOR WIRE: Provide 7x19SS (T304) PVC coated stainless steel Aircraft Cable sized to withstand pull required, but of minimum 3/16-inch diameter.

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.

- A. Protect existing utilities indicated or made known.
- B. 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.
 1. 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.
- C. Protection of persons and property:
 1. Barricade open depressions and holes occurring as part of this Work, and post warning lights on property adjacent to or with public access.
 2. Operate warning lights during hours from dusk to dawn each day and as otherwise required.
 3. 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.
- D. 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.
- E. Maintain access to the work areas at all times.
- F. 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.
 1. Provide vacuum trucks and apparatus of sufficient size and quantity to reclaim all drilling mud discharged during operations.
 2. 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.

- A. 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.
- B. 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.
- C. Provide stainless steel PVC coated Aircraft Cable at each boring location for the total length of pipe, plus additional wire/cable to leave a 10 foot loop of cable at the valve boxes at each end of the water main project.
 - 1. Connect locator wire to ductile iron valve box with a hard connection (Thermite weld, or similar).
- D. Mark location of plastic pipe termination points on "Job Set" of plans, measured from adjacent permanent structures or iron pins.

TESTING: Comply with testing requirements outlined in the WATER DISTRIBUTION SYSTEM Section of these Special Provisions.

- A. Repair any defects or leaks in the pipe discovered during testing.
- B. Retest all repaired sections until they meet all testing and inspection requirements.

Basis of Payment. This work will be paid for at the contract unit price per foot for WATER MAIN, H.D.D. INSTALLED of the pipe size specified, regardless of depth and actual pipe installation method, which price shall include excavation for drilling and receiving pits, bedding and initial pipe covering in the drilling and receiving pits, testing and disinfection.

All water main installed by horizontal directional drilling methods, or in open cut trenches, will be paid for as WATER MAIN, H.D.D. INSTALLED.

All provided, placed, and compacted trench backfill above the granular pipe bedding and cover material in an open cut trench shall be included in the cost of the drilling and receiving pits or in the cost of water main pipe installed in open cut trenches, with either and both installation methods included in the cost of the WATER MAIN, H.D.D. INSTALLED.

Water main fittings will be paid for separately according to the special provision for DUCTILE IRON WATER MAIN FITTINGS.

WATER MAIN RELOCATION:

Description. This work shall be done in accordance with the Special Provision for "WATER DISTRIBUTION SYSTEM" and shall consist of relocating existing water mains at elevations to cross sewers or sewers in casing pipes complete in place, including sawcutting, and removal and disposal of existing pavements; excavation, including any additional depth required to cross sewer pipes; 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; bracing; polyethylene wrapping of pipe, fittings and valves; bedding and covering of pipe; visual testing; disinfection; finish grading; including providing trench backfill and backfilling with, and compaction of, the trench backfill material.

Basis of Payment. This work will be paid for at the contract unit price per each for WATER MAIN RELOCATION as shown on the Drawings.

Water main pipe will be paid for separately according to the special provision for WATER MAIN, H.D.D. INSTALLED. Water main fittings will be paid for separately according to the special provision for DUCTILE IRON WATER MAIN FITTINGS.

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 water main fittings complete in place to 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.

GATE VALVE WITH VALVE BOX:

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 furnished by a manufacturer considered standard by the Village.

Basis of Payment. This work will be paid for at the contract unit price per each for GATE VALVE WITH VALVE BOX of the valve size indicated.

Fire hydrant auxiliary valves will be included as part of the pay item for FIRE HYDRANT.

FIRE HYDRANT:

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 fire hydrants with auxiliary valve and valve box complete in place at the locations shown on the drawings, including sawcutting, removal and disposal of existing pavements; excavation; removal and disposal of waste excavated materials; trench dewatering; thrust blocking; fire hydrant barrel drain washed stone pocket; support; testing; disinfection; and providing trench backfill and backfilling with, and compaction of, the trench backfill material. This work includes polyethylene wrapping of connecting pipe, auxiliary valve, and fire hydrant.

Method of measurement. This work will be measured for payment for each fire hydrant installed, which shall include five (5) feet of 6-inch leader pipe, measured from the center of the main to the center of the fire hydrant.

Basis of Payment. This work will be paid for at the contract unit price per each for FIRE HYDRANT.

INSERTION VALVE WITH VALVE BOX:

Description. This work shall consist of furnishing all labor, materials and equipment necessary to install insertion valves (or a line stop) at the locations shown on the Drawings. Insertion valves shall be epoxy coated ductile iron, split body, resilient wedge/seat type conforming to the latest edition of AWWA C515, O-ring seal stuffing. Insertion valves shall have restrained type glands at each end of the valve body and shall be rated for 250 psi working pressure. Valves shall include a 2-inch square operating nut with counter-clockwise opening, non-rising stem operation.

Installation will require cutting and removing a portion of the water main pipe wall. Pipe cutting and removal of pipe material shall be completed with water main operating under continuous pressure.

- A. Acceptable valve manufacturers:
1. Advanced Valve Technologies EZ2 Valve.
 2. No substitutions.
or
 3. A line stop by a manufacturer located in the northeastern Illinois/Chicagoland area.

CONSTRUCTION REQUIREMENTS

Insertion valves (or line stops) shall be installed at locations shown on the Drawings and according to the manufacturer's recommendations. The Contractor shall complete work in accordance with the Drawings, the "Standard Specifications for Water and Sewer Main Construction in Illinois," latest edition and applicable ordinances of the Village of La Grange. All insertion valves shall be inspected upon delivery in the field to insure proper working order before installation. Valves shall be installed in a vertical position, supported on a solid concrete block.

Basis of Payment. This work will be paid for at the contract unit price for each of the INSERTION VALVE WITH VALVE BOX of the valve size specified.

WATER SERVICE CONNECTION:

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 main complete in place, including excavation, shoring, bracing; protection repair, or replacement of utilities; installation of 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 providing trench backfill and backfilling with, and compaction of, the trench backfill material.

Basis of Payment. This work will be paid for at the contract unit price per each for WATER SERVICE CONNECTION of a 1" size as indicated on the Drawings.

WATER SERVICE PIPE:

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, including excavation, shoring, bracing; protection repair, or replacement of utilities; installation of service pipe; bedding and covering of pipe; and providing trench backfill and backfilling with, and compaction of, the trench backfill material.

Water service pipe may be installed by the directional drilling method, at Contractors option, at no change to the contract unit price per foot.

Method of Measurement. This work will be measured in feet along the centerline of the pipe, from the centerline of the water main to the termination of the service pipe at the new curb box.

Basis of Payment. This work will be paid for at the contract unit price per foot for WATER SERVICE PIPE of a 1" size as indicated on the Drawings.

WATER MAIN ABANDONMENT:

Description. This work shall be in accordance with the Special Provision for "WATER DISTRIBUTION SYSTEM", and shall consist of the abandonment of existing valve vaults, water valves and fire hydrants. This work shall include pavement removal and disposal; excavation; removing valve vaults, water valves and fire hydrants; and providing trench backfill and backfilling with, and compaction of, the trench backfill material.

Basis of Payment. This work will be paid for at the lump sum price for WATER MAIN ABANDONMENT.

RELIEF SEWER SYSTEM:

SUMMARY: Provide and install the relief sewer system 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", MWRDGC requirements, and Village of La Grange standards, except as revised herein.

PIPE AND FITTINGS:

REINFORCED CONCRETE PIPE:

- A. Comply with ASTM C76.
- B. Use Class IV pipe unless actual depths of the pipe require Class V pipe.
- C. Joints: Rubber ring gasket complying with ASTM C443.
- D. Match base tee manholes and specials with the pipe in all respects.

BASE TEE MANHOLES:

- A. Provide base tee type manholes that consist of "tee" fittings of mainline sewer material:
 - 1. Provide offset riser where relief sewer is larger than 48-inch.
 - 2. Provide standard 48-inch manhole riser pipe and eccentric cone, or eccentric flat slab top, from tee to the ground surface.
 - 3. Provide base tee manhole at bends in relief sewer where indicated on the Drawings.
 - 4. Provide the following for manholes for all base tee manholes.
 - a. External frame seal.
 - b. Manhole exterior joint protection.
 - c. Manhole exterior surface treatment.
- B. Concrete: Provide 4,000 psi concrete using Type I Portland Cement complying with ASTM C150.
- C. Mortar: Mix one part Portland Cement to three parts fine aggregate.
- D. 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.
 - 1. Acceptable preformed gasket products:
 - a. K. T. Snyder Co., RAM-NEK.
 - b. Concrete Sealants, Type CS-102.
 - c. Or equal.
- E. 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 ½-inch steel reinforcement as manufactured by M.A. Industries, Inc.; or Cast Iron steps, Neenah R-1980-I; or equal.
- F. Frames and covers:

1. Provide ductile iron frames and covers with heavy duty indented top with solid self-sealing lids and machined bearing surfaces, stamped with the word "RELIEF SEWER".
 - a. Acceptable products: Neenah R-1713, East Jordan 1050 EXHD, or equal.
- G. External Frame seal:
 1. Provide frame seals consisting of a flexible rubber sleeve and extension and stainless steel compression bands.
 - a. Rubber sleeve and extension:
 - (1) Provide rubber sleeve and extension complying with ASTM C923.
 - (2) Comply with a minimum 1500 psi tensile strength, maximum 18 percent compression set and a hardness (durameter) of 48±5.
 - (3) Provide sleeve with a minimum thickness of 3/16-inch and unexpanded vertical heights of 6 or 9 inches.
 - (4) Provide extension having a minimum thickness of 3/16-inch.
 2. 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.
 3. Acceptable products:
 - a. Cretex Specialty Products.
 - b. Or equal.
 - H. Manhole exterior joint protection:
 1. Two piece wrap-around heat shrinkable sleeve system.
 - a. Minimum width: 9 inches.
 - b. Acceptable manufacturer: CANUSA WRAPID SEAL.
 2. Woven polypropylene fabric with rubberized mastic coating and steel strapping.
 - a. Minimum width 9 inches.
 - b. Acceptable manufacturer: MacWrap.
 3. 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 equal.
- I. Manhole exterior surface treatments:
- 1. Damp proofing material: Heavy duty coal tar pitch.
 - 2. Acceptable manufacturers:
 - a. Top-Coat, bituminous super service black.
 - b. Or equal.

PIPE INSTALLATION:

- A. Install relief sewer pipe in strict accordance with the latest revision of "Standard Specifications for Water and Sewer Main Construction in Illinois" and with these Special Provisions and the Special Provision for "TRENCHING, BACKFILLING, AND COMPACTING FOR SANITARY SEWERS AND WATER MAINS.
- B. Install pipe in accordance with pipe manufacturer's recommendations.
- C. Install pipe by proceeding upgrade with the spigot ends of bell-and-spigot pipe pointing in direction of flow.
- D. Place each pipe accurately to the indicated line and grade, aligning so the sewer has a uniform invert.
- E. Continually clear interior of the pipe free from foreign material.
- F. Before making pipe joints, clean and dry all surfaces of the pipe to be joined.
- G. Use lubricants recommended for the purpose by the pipe manufacturer.
- H. Comply with ASTM C-12 Bedding Class B for rigid pipe installation.

MANHOLE INSTALLATION

- A. General:
 - 1. Provide external chimney seal on all manholes.
 - 2. Provide manhole exterior joint protection on all manholes.
 - 3. Provide manhole exterior surface treatment on all manholes.
- B. Manhole steps:
 - 1. Provide each manhole over 3 feet deep 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.
- C. Frames and covers: Unless otherwise shown on the Plans or as directed by the Engineer, set frames and covers so the top of the cover will be flush with the finished pavement; or
 - 1. With flexible watertight gaskets.
 - 2. With grade rings not to exceed 8 inches.

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.

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.

INTERNAL CCTV SEWER INSPECTION

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

60" RELIEF SEWER:

Description. The work of this Pay Item shall be completed in accordance with the Special Provisions for "RELIEF SEWER SYSTEM"; "TRENCHING, BACKFILLING AND COMPACTING FOR SANITARY SEWER AND WATER MAIN"; attached other Special Provisions; and the details on the Plans and shall consist of the installation of relief sewer pipe complete in place, including sawcutting, removal and disposal of existing pavements; bracing, sheeting and shoring; excavation; installation of pipe; bedding and covering of pipe; trench dewatering

Special Provisions
101123.40

Village of La Grange
Maple Avenue Relief Sewer Design
Section No.: 12-00088-00-FP

including erosion and sedimentation control methods and devices to provide protection to the environment from all pumping operations; providing trench backfill and backfilling with, and compaction of, the trench backfill material; testing; temporary pavement; finish grading; removal and disposal of waste excavated materials; location, protection, and repair or replacement of existing structures, pipelines and utilities; removing and reinstalling the precast concrete pipe plug/bulkhead; and all other work incidental to and necessary for a complete relief sewer installation.

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

Basis of Payment. This work will be paid for at the contract unit price per foot for 60" RELIEF SEWER, regardless of depth.

BASE TEE MANHOLE FITTING, 60" PIPE:

Description. The work of this Pay Item shall be completed in accordance with the Special Provisions for "RELIEF SEWER SYSTEM", "TRENCHING, BACKFILLING AND COMPACTING FOR SANITARY SEWER AND WATER MAIN", these Special Provisions and the detail on the Plans and shall consist of the installation of a relief sewer base tee manhole fitting (60" x 48" offset tee) complete in place, including bracing, sheeting and shoring; dewatering, including erosion and sedimentation control methods and devices to provide protection to the environment from all pumping operation; providing trench backfill and backfilling with, and compaction of, the trench backfill material; manhole steps; 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 relief sewer base tee manhole fitting installation.

Basis of Payment. This work will be paid for at the contract unit price per each for BASE TEE MANHOLE FITTING, 60" PIPE.

BASE TEE MANHOLE RISER, 48" DIAMETER:

Description. The work of this Pay Item shall be completed in accordance with the Special Provisions for "RELIEF SEWER SYSTEM", "TRENCHING, BACKFILLING AND COMPACTING FOR SANITARY SEWER AND WATER MAIN", these Special Provisions and the detail on the Plans and shall consist of the installation of manhole riser sections (48" diameter) complete in place, including bracing, sheeting and shoring; dewatering, including erosion and sedimentation control methods and devices to provide protection to the environment from all pumping operation; providing trench backfill and backfilling with, and compaction of, the trench backfill material; relief sewer manhole risers, cone or flat slab top, adjusting rings, steps, chimney seals, and exterior surface and joint treatments; frames and covers; 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 relief sewer base tee manhole riser installation.

Basis of Payment. Base tee manhole risers will be measured for payment in feet measured vertically.

Basis of Payment. This work will be paid for at the contract unit price per foot for BASE TEE MANHOLE RISER, 48" DIAMETER.

PIPE CONNECTION TO BASE TEE MANHOLE, 24":

Description. The work of this Pay Item shall be completed in accordance with the Special Provisions for "RELIEF SEWER SYSTEM", "TRENCHING, BACKFILLING AND COMPACTING FOR SANITARY SEWER AND WATER MAIN", these Special Provisions and the detail on the Plans and shall consist of the fabrication and installation of an opening and watertight rubber boot for the connection of a 24" ductile iron pipe storm sewer to a relief sewer base tee manhole fitting complete in place and work necessary for a complete connection of the storm sewer to the base tee manhole fitting.

Basis of Payment. This work will be paid for at the contract unit price per each for PIPE CONNECTION TO BASE TEE MANHOLE, 24".

OVERFLOW DIVERSION SYSTEM:

SUMMARY: Provide an overflow diversion system 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", MWRDGC requirements, and Village of La Grange standards, except as revised herein.

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

PIPE AND FITTINGS:

- A. PVC plastic pressure pipe:
 - 1. Pipe material: Use Type I, Grade 1, polyvinyl chloride complying with ASTM D1784.
 - 2. Comply with ASTM D2241 for 160 psi pressure rated pipe with a standard dimension ratio of 26.
 - 3. Joints:
 - a. Use push-on bell and spigot type with rubber ring seal gasket conforming to ASTM D3139.
- B. Ductile iron pipe and fittings:

1. Comply with ANSI A21.51, Thickness Class 50, with joints complying with ANSI A21.11 unless otherwise designated on the Plans.
 2. Fittings: Comply with ANSI A21.10.
 3. Use cement lining complying with ANSI A21.4, standard thickness.
- C. Couplings:
1. Provide flexible rubber couplings with adjustable stainless steel bands complying with ASTM C425 for connecting new pipe to existing sewer pipe and for repairing sewer pipe.
 - a. Acceptable products: Band-Seal Couplings by Mission Clay Products Corp., or equal.

MANHOLES:

- A. Precast Concrete Manholes:
1. Provide precast reinforced concrete manhole sections, bottoms, and eccentric cone sections unless otherwise indicated on the Plans.
 2. Where manhole depths are too shallow for eccentric cones, design flat slab top for HS20-44 loading.
 3. Provide the following on all diversion structures and manholes:
 - a. External frame seal.
 - b. Manhole exterior joint protection.
 - c. Manhole exterior surface treatment.
- B. Concrete: Provide 4,000 psi concrete using Type I Portland Cement complying with ASTM C150.
- C. Mortar: Mix one part Portland Cement to three parts fine aggregate.
- D. 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.
1. Acceptable preformed gasket products:
 - a. K. T. Snyder Co., RAM-NEK.
 - b. Concrete Sealants, Type CS-102.
 - c. Or equal
- E. 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 ½-inch steel reinforcement as manufactured by M.A. Industries, Inc., cast iron steps, Neenah R-1980-I, or equal.
- F. Frames and covers:
1. Provide ductile iron frames and covers with heavy duty indented top with solid self-sealing lids and machined bearing surfaces, stamped with the word "SANITARY".
 - a. Acceptable products: Neenah R-1713, East Jordan 1050 EXHD, or equal.
- G. Rigid pipe connections:

1. Provide plain end ductile iron pipe stubs directly into manhole walls.
- H. External Frame seal:
1. Provide frame seals consisting of a flexible external rubber sleeve and extension and stainless steel compression bands.
 2. Rubber sleeve and extension:
 - a. Provide rubber sleeve and extension complying with ASTM C923.
 - b. Comply with a minimum 1500 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.
 3. 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.
 4. Acceptable products:
 - a. Cretex Specialty Products.
 - b. Or equal.
- I. Manhole exterior joint protection:
1. Two piece wrap-around heat shrinkable sleeve system.
 - a. Minimum width: 9 inches.
 - b. Acceptable manufacturer: CANUSA WRAPID SEAL.
 2. Woven polypropylene fabric with rubberized mastic coating and steel strapping.
 - a. Minimum width 9 inches.
 - b. Acceptable manufacturer: MacWrap.
 3. 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 1/4-inch.
 - d. Acceptable products: Infi-Shield External Sealing System; or equal.
- J. Manhole exterior surface treatments:
1. Damp proofing material: Heavy duty coal tar pitch.

2. Acceptable manufacturers:
 - a. Top-Coat, bituminous super service black.
 - b. Or equal.

PIPE INSTALLATION:

- A. Install overflow diversion sewer pipe (water main quality sanitary sewer pipe) in strict accordance with the latest revision of "Standard Specifications for Water and Sewer Main Construction in Illinois"; this Special Provision; and the Special Provision for "TRENCHING, BACKFILLING, AND COMPACTING FOR SANITARY SEWERS AND WATER MAINS.
- B. Install pipe in accordance with pipe manufacturer's recommendations.
- C. Install pipe by proceeding upgrade with the spigot ends of bell-and-spigot pipe pointing in direction of flow.
- D. Place each pipe accurately to the indicated line and grade, aligning so the sewer has a uniform invert.
- E. Continually clear interior of the pipe free from foreign material.
- F. Before making pipe joints, clean and dry all surfaces of the pipe to be joined.
- G. Use lubricants recommended for the purpose by the pipe manufacturer.
- H. Comply with ASTM D2321 for flexible thermoplastic sewer pipe installation.
- I. Comply with ASTM C-12 Bedding Class B for rigid pipe installation.

STRUCTURE AND MANHOLE INSTALLATION

- A. General:
 1. Shape the invert channels to be smooth and semicircular, conforming to the inside of the adjacent sewer section.
 2. Make changes in direction of flow with a smooth curve of as large a radius as the size of the manhole will permit.
 3. Make changes in size and grade of channels smoothly and evenly.
 4. Form the invert channels directly in the concrete of the manhole base, with preformed invert channels during the fabrication of the structure or manhole.
 5. Smooth the bench outside the channels, and slope toward the channels at a slope of 2 inches per foot.
 6. Provide external chimney seal on all structures and manholes.
 7. Provide manhole exterior joint protection on all structures and manholes.
 8. Provide manhole exterior surface treatment on all structures and manholes.
 9. Manhole steps:
 10. Provide each manhole over 3 feet deep with individual wall-mounted steps as shown on the sanitary manhole detail.
 11. Comply with the requirements of governmental agencies having jurisdiction.
- B. Jointing:

1. Use flexible watertight gaskets for each joint, including grade ring joints.
 2. Trim smooth and free from surplus gaskets.
- C. Frames and covers: Unless otherwise shown on the Plans or as directed by the Engineer, set frames and covers so that the top of the cover will be flush with the finished pavement
1. With flexible watertight gaskets.
 2. With grade rings not to exceed 8 inches.

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.

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.

INTERNAL CCTV SEWER INSPECTION

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

OVERFLOW DIVERSION PIPE:

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 SANITARY SEWER AND WATER MAIN", these Special Provisions and the details on the Plans and shall consist of the installation of water main quality sanitary sewer pipe complete in place, including sawcutting, removal and disposal of existing pavements; excavation; bracing, sheeting and shoring; installation of pipe; bedding and covering of pipe; trench dewatering including erosion and sedimentation control methods and devices to provide protection to the environment from all pumping operations; providing trench backfill and backfilling with, and compaction of, the trench backfill material; testing; finish grading; removal and disposal of waste excavated materials; location, protection, and repair or replacement of existing structures, pipelines and utilities; and all other work incidental to and necessary for a complete overflow diversion pipe installation.

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

Basis of Payment. This work will be paid for at the contract unit price per foot for OVERFLOW DIVERSION PIPE, of the size indicated, regardless of depth.

OVERFLOW DIVERSION STRUCTURE:

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 SANITARY SEWER AND WATER MAIN", these Special Provisions and the details on the Plans and shall consist of the installation of overflow diversion structures complete in place, including excavation; 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 trench backfill; a fabricated overflow diversion structure including base, concrete overflow weir, restrictor plate and anchors, risers, eccentric cone, adjusting rings, steps, chimney seals, ductile iron pipe stubs, and cast and shaped inverts and benches; frames and covers; 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 overflow diversion structure installation.

Basis of Payment. This work will be paid for at the contract unit price per each for OVERFLOW DIVERSION STRUCTURE.

OVERFLOW DIVERSION MANHOLE:

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 SANITARY SEWER AND WATER MAIN", these Special Provisions and the details on the Plans and shall consist of the installation of overflow diversion manholes complete in place, including excavation; trenching; bracing, sheeting and shoring; dewatering, including erosion and sedimentation control methods and devices to provide protection to the environment from all pumping operation; providing trench backfill and backfilling with, and compaction of, the trench backfill material; a fabricated overflow diversion manhole including base, risers, eccentric cone, adjusting rings, steps, chimney seals, ductile iron pipe stubs, and cast and shaped inverts and benches; frames and covers; 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 overflow diversion manhole installation.

Basis of Payment. This work will be paid for at the contract unit price per each for OVERFLOW DIVERSION MANHOLE.

RESTRICTOR PLATE:

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 SANITARY SEWER AND WATER MAIN", "RELIEF SEWER SYSTEM", these Special Provisions and the details on the Plans and shall consist of the installation of a multi-plate, fabricated steel restrictor plate installed in an existing base tee manhole on the downstream 60" relief sewer remote from the project site, complete in place; including bracing and falsework; bolts, nuts and washers; grout and sealants; and all other work necessary for the complete restrictor plate installation.

Basis of Payment. This work will be paid for at the contract unit lump sum price for the RESTRICTOR PLATE.

SANITARY SEWER SYSTEM:

SUMMARY: Provide a sanitary sewer system 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", MWRDGC requirements, and Village of La Grange standards, except as revised herein.

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

PIPE AND FITTINGS:

- A. 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 elastomeric gasket type complying with ASTM F477 and ASTM D3212.
 3. Gaskets for fittings and joints: Minimum cross-sectional area of 0.20 square inches complying with ASTM F477.
- B. Branch fittings:
1. Use factory fabricated type with attached main line coupling, minimum SDR-26.
 2. Acceptable manufacturers:
 - a. Harco.
 - b. GPK Products.
 - c. Sealtite Sewer Saddles by Geneco.
 - d. Multi Fittings.
 - e. Plastic Trends.
 - d. Or equal.
- C. Service pipe:
1. Use SDR 26 solid wall type complying with ASTM D3034 for PVC pipe.
- D. Couplings:
1. Provide flexible rubber couplings 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 equal.

MANHOLES:

- A. Precast Concrete Manholes:
1. Provide precast reinforced concrete manhole sections, bottoms, and eccentric conts complying with ASTM C478 unless otherwise indicated on Plans.
 2. Provide precast reinforced concrete monolithic base for new and existing sewer lines.
 3. Where manhole depths are too shallow for eccentric cones, design flat slab top for HS20-44 loading.
 4. Provide the following on all diversion structures and manholes:
 - a. External frame seal.
 - b. Manhole exterior joint protection.
 - c. Manhole exterior surface treatment.
- B. Concrete: Provide 4,000 psi concrete using Type I Portland Cement complying with ASTM C150.
- C. Mortar: Mix one part Portland Cement to three parts fine aggregate.

- D. 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.
1. Acceptable preformed gasket products:
 - a. K. T. Snyder Co., RAM-NEK.
 - b. Concrete Sealants, Type CS-102.
 - c. Or equal.
- E. 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 ½-inch steel reinforcement as manufactured by M.A. Industries, Inc., cast iron steps, Neenah R-1980-I, or equal.
- F. Frames and covers:
1. Provide ductile iron frames and covers with heavy duty indented top with solid self-sealing lids and machined bearing surfaces, stamped with the word "SANITARY".
 - a. Acceptable products: Neenah R-1713, East Jordan 1050 EXHD, or equal.
- G. External Frame seal:
1. Provide frame seals consisting of a flexible external rubber sleeve and extension and stainless steel compression bands.
 2. Rubber sleeve and extension:
 - a. Provide rubber sleeve and extension complying with ASTM C923.
 - b. Comply with a minimum 1500 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.
 3. 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.
 4. Acceptable products:
 - a. Cretex Specialty Products.
 - b. Or equal.
- H. Manhole exterior joint protection:
1. Two piece wrap-around heat shrinkable sleeve system.

- a. Minimum width: 9 inches.
- b. Acceptable manufacturer: CANUSA WRAPID SEAL.
2. Woven polypropylene fabric with rubberized mastic coating and steel strapping.
 - a. Minimum width 9 inches.
 - b. Acceptable manufacturer: MacWrap.
3. 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 equal.
- I. Manhole exterior surface treatments:
 1. Damp proofing material: Heavy duty coal tar pitch.
 2. Acceptable manufacturers:
 - a. Top-Coat, bituminous super service black.
 - b. Or equal.

GROUT FOR FILLING OF ABANDONED SEWERS:

- A. 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:
 - a. Mearl Geofam Liquid Concentrate.
 - b. Or equal.

PIPE INSTALLATION:

- A. 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 SANITARY SEWERS AND WATER MAINS.
- B. Install pipe in accordance with pipe manufacturer's recommendations.
- C. Install pipe by proceeding upgrade with the spigot ends of bell-and-spigot pipe pointing in direction of flow.
- D. Place each pipe accurately to the indicated line and grade, aligning so the sewer has a uniform invert.

- E. Continually clear interior of the pipe free from foreign material.
- F. Before making pipe joints, clean and dry all surfaces of the pipe to be joined.
- G. Use lubricants recommended for the purpose by the pipe manufacturer.
- H. Comply with ASTM D2321 for flexible thermoplastic sewer pipe installation.

MANHOLE INSTALLATION

A. General:

- 1. Shape the invert channels to be smooth and semicircular, conforming to the inside of the adjacent sewer section.
- 2. Make changes in direction of flow with a smooth curve of as large a radius as the size of the manhole will permit.
- 3. Make changes in size and grade of channels smoothly and evenly.
- 4. 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.
- 5. Smooth the bench outside the channels, and slope toward the channels at a slope of 2 inches per foot.
- 6. Provide external chimney seal on all manholes.
- 7. Provide manhole exterior joint protection on all manholes.
- 8. Provide manhole exterior surface treatment on all manholes.

B. Manhole steps:

- 1. Provide each manhole over 3 feet deep 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.

C. Jointing:

- 1. Use flexible watertight gaskets for each joint, including grade ring joints.
- 2. Trim smooth and free from surplus gaskets.
- 3. Frames and covers: Unless otherwise shown on the Plans or as directed by the Engineer, set frames and covers so that the top of the cover will be flush with the finished pavement.
- 4. With flexible watertight gaskets.
- 5. With grade rings not to exceed 8 inches.

MANHOLE OVER EXISTING PIPE

- A. Provide new manhole as a monolithic base unit and connect to main line sewer with short sections of pipe utilizing flexible watertight connectors.
 - 1. Provide pipe sections of size that matches existing pipes.
 - 2. Provide by-pass pumping if 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.

BUILDING SERVICES

- A. Definitions:
 - 1. Building service pipe: New service pipe from new sewer to active service.
 - 2. Inactive service: Services exposed and abandoned.
 - 3. Replacement of existing service pipe: Removal and replacement of existing sewer pipe that is cracked or otherwise unsuitable for service.
- B. General:

1. Provide 6-inch wye saddles, service lines, and flexible couplings to connect existing services to the new sanitary sewers, at locations determined in conjunction with the Engineer at the time of construction.
2. Comply with the specifications for other sewers in the Work and the sewer service details as shown on the Plans.
3. Use wye saddles for connecting to PVC sewer pipes.
4. Where curbs or sidewalks are available, notch the top of the curb or back side of the walk directly above the end of the service line.
5. Service locations shall be derived from television inspection performed by Contractor as part of the work to locate sanitary sewer service pipes for the installation of the water main.
6. Connect services as they are encountered during installation of the new sewer, after service identification procedures.
7. All new service to be 6-inch PVC pressure pipe with push-on joints.
8. New services are not to be connected to cracked or broken existing services unless, in the opinion of the Engineer, no practical alternative exists.
9. Where more than one service is shown for a house, the Engineer shall decide which services to expose.
 - a. Where two exposures are necessary, the abandoned one becomes an inactive service.
10. Keep a record on forms available from the Engineer of branch saddle location and service lines by measurement to the nearest downstream manhole and to permanent points such as property corners.
 - a. Alternatively, the Contractor may provide GPS (Latitude-Longitude) coordinates of the service lines.
 - b. Deliver the records to the Engineer on completion of the Work on a monthly pay period basis.
 - (1) Locations not recorded and delivered to the Engineer will not be paid for.

INTERNAL CCTV SEWER INSPECTION

- A. Perform internal sewer inspection by closed circuit color television (CCTV) to determine location of existing services as part of work to be used in the construction of the water main.
- B. Comply with the Village's requirements for televising of sewers for final inspection.

TESTING AND INSPECTING

- A. Deflection test for flexible thermoplastic pipe:
 1. Test the deflection of all installed pipe.
 2. Perform the test no sooner than 30 days after backfilling has been completed.

3. Perform the test by pulling a mandrel or rigid ball having a diameter equal to 95 percent of the inside diameter of the pipe through the pipe from manhole to manhole without using mechanical pulling devices.
 4. Allowable deflection limits: 5.0 percent of the base inside diameter of the pipe.
 5. Wherever the deflection limitation is exceeded, uncover the pipe, carefully replace compacted embedment and backfill material, and retest for deflection.
- B. Sanitary Manhole Watertightness Testing:
1. Vacuum Testing Methods:
 - a. Test each sanitary manhole for leakage per ASTM C1244-93, no sooner than 30 days after installation.
 - b. Plug all lift holes with a non-shrink grout.
 - (1) Do not place grout in horizontal joints before testing.
 - c. Seal all inlet and outlet pipes with airtight plugs, taking care to securely brace plugs to prevent the plugs from being drawn into the manhole.
 - d. Place the vacuum test equipment at the inside top of the cone section and inflate the seal to 40 pounds per square inch.
 - e. Draw a vacuum of 10 inches of mercury and shut the vacuum pump off.
 - f. Close valves and measure the time for the vacuum to drop to 9 inches of mercury.
 - g. Allowable limits: The manhole shall pass if the time for the vacuum reading to drop from 10 inches to 9 inches exceeds 60 seconds for a 48-inch diameter manhole.
 - h. Repair all manholes failing the initial test with a non-shrink grout.
 - i. If a manhole fails the initial test, retest until a satisfactory test is obtained.
 - j. Provide equipment, materials and labor necessary to conduct vacuum testing.
 - k. Make tests in the presence of the Village, giving the Village at least 48 hours' notice prior to testing.

SANITARY SEWER AND MANHOLE ABANDONMENT

- A. Where new sewers are being installed at the same location as existing sewers, existing sewers will be abandoned in total as incidental to the removal of the existing sewer and installation of the new sewer.
 1. Sewers to be abandoned and not being removed as part of the new sewer installation shall be plugged with concrete at all locations where they are exposed by trenching or excavations.
 2. Fill sewers to be abandoned with grout where indicated on the drawings.

- a. Do not allow grout to enter existing sewers to remain in service or to enter new sewer pipe.
 - b. Fill sewers in the presence of the Engineer.
3. Abandonment of the existing combined sewer on Maple Avenue, at and east of 8th Avenue, is incidental to sanitary sewer construction.

CONNECTION TO EXISTING SANITARY SEWER MANHOLE:

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 SANITARY SEWER AND WATER MAIN", these Special Provisions and shall consist of the connection of new sanitary sewer pipe to an existing sanitary manhole, including sawcutting, removal and disposal of existing pavements; excavation; bracing, sheeting and shoring; coring and removal of precast concrete manhole wall and concrete bench as required to make the connection to the existing sanitary sewer manhole; removal of existing restrictor plate; plugging of existing pipe; filling of low bench/invert with concrete; reshaping of concrete bench; trench dewatering, including erosion and sedimentation control methods and devices to protect the environment from all pumping operations; providing trench backfill and backfilling with, and compaction of, the trench backfill material; 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 incidental to and necessary for a complete connection of new sanitary sewer pipe to the existing sanitary sewer manhole.

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

SANITARY SEWER:

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 SANITARY SEWER AND WATER MAIN", these Special Provisions and the details on the Plans and shall consist of the installation of sanitary sewer pipe complete in place, including sawcutting, removal and disposal of existing pavements; excavation; bracing, sheeting and shoring; installation of pipe; bedding and covering of pipe; trench dewatering including erosion and sedimentation control methods and devices to provide protection to the environment from all pumping operations; providing trench backfill and backfilling with, and compaction of, the trench backfill material; finish grading; removal and disposal of waste excavated materials; location, protection, and repair or replacement of existing structures, pipelines and utilities; and all other work incidental to and necessary for a complete sanitary sewer installation.

Abandonment of the existing combined sewer on Maple Avenue, at and east of 8th Avenue, is incidental to sanitary sewer construction.

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

Basis of Payment. This work will be paid for at the contract unit price per foot for SANITARY SEWER of the size and ranges of depth indicated.

SANITARY MANHOLE:

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 SANITARY SEWER AND WATER MAIN", 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; providing trench backfill and backfilling with, and compaction of, the trench backfill material; the sanitary sewer manhole, including base, risers, eccentric cone, adjusting rings, steps, chimney seals, and frames and covers; watertight flexible connectors to match pipe; testing; 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 MANHOLE of the ranges of depth indicated.

SANITARY SEWER SERVICE CONNECTION:

Description. The work of this Pay Item shall be completed in accordance with the Special Provision for "SANITARY SEWER SYSTEM", and shall consist of providing and installing a sanitary sewer building service lateral branch fitting complete in place in the sanitary sewer, including all requirements for "SANITARY SEWER"; protecting, repair or replacement of utilities; excavation; bracing; connection of new sanitary sewer service pipe to the fitting; bedding and covering of pipe; trench dewatering; providing trench backfill and backfilling with, and compaction of, the trench backfill material; and finish grading.

Basis of Payment. This work will be paid for at the contract unit price per each for SANITARY SEWER SERVICE CONNECTION, regardless of depth of the sanitary sewer.

SANITARY SEWER SERVICE PIPE:

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"; 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; providing trench backfill and backfilling with, and compaction of, the trench backfill material; and finish grading.

Method of Measurement. This work will be measured 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.

Basis of Payment. This work will be paid for at the contract unit price per foot for SANITARY SEWER SERVICE PIPE, regardless of depth.

CASING PIPE, OPEN CUT:

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 protection of adjacent utilities, roadways, properties; protection of the public; protection, repair or replacement of utilities; 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; providing trench backfill materials and backfilling with, and compaction of, the 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. Payment includes the casing pipe, and not the carrier pipe. The carrier pipe will be paid for separately according to the special provision for SANITARY SEWER.

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 La Grange

Baxter & Woodman, Inc.

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

State of Illinois
DEPARTMENT OF TRANSPORTATION
Bureau of Local Roads & Streets

SPECIAL PROVISION
FOR
WAGES OF EMPLOYEES ON PUBLIC WORKS

Effective: January 1, 1999
Revised: January 2, 2013

1. **Prevailing Wages.** All wages paid by the Contractor and each subcontractor shall be in compliance with The Prevailing Wage Act (820 ILCS 130), as amended, except where a prevailing wage violates a federal law, order, or ruling, the rate conforming to the federal law, order, or ruling shall govern. The Illinois Department of Labor publishes the prevailing wage rates on its website at www.state.il.us/agency/idol/rates/rates.htm. If the Illinois Department of Labor revises the prevailing wage rates, the revised prevailing wage rates on the Illinois Department of Labor's website shall apply to this contract and the Contractor will not be allowed additional compensation on account of said revisions. The Contractor shall review the wage rates applicable to the work of the contract at regular intervals in order to ensure the timely payment of current wage rates. The Contractor agrees that no additional notice is required. The Contractor shall be responsible to notify each subcontractor of the wage rates set forth in this contract and any revisions thereto.
2. **Payroll Records.** The Contractor and each subcontractor shall make and keep, for a period of not less than three years from the date of the last payment on a contract or subcontract, records of all laborers, mechanics, and other workers employed by them on the project; the records shall include each worker's name, address, telephone number when available, social security number, classification or classifications, the hourly wages paid in each pay period, the number of hours worked each day, and the starting and ending times of work each day. Upon seven business days' notice, the Contractor and each subcontractor shall make available for inspection and copying at a location within this State during reasonable hours, the payroll records to the public body in charge of the project, its officers and agents, the Director of Labor and his deputies and agents, and to federal, State, or local law enforcement agencies and prosecutors.
3. **Submission of Payroll Records.** The Contractor and each subcontractor shall, no later than the tenth day of each calendar month, file a certified payroll for the immediately preceding month with the public body in charge of the project, except that the full social security number and home address shall not be included on weekly transmittals. Instead the payrolls shall include an identification number for each employee (e.g., the last four digits of the employee's social security number). The certified payroll shall consist of a complete copy of the payroll records except starting and ending times of work each day may be omitted.

The certified payroll shall be accompanied by a statement signed by the Contractor or subcontractor or an officer, employee, or agent of the contractor or subcontractor which avers that: (i) he or she has examined the certified payroll records required to be submitted by the Act and such records are true and accurate; (ii) the hourly rate paid to each worker is not less than the general prevailing rate of hourly wages required; and (iii) the Contractor or subcontractor is aware that filing a certified payroll that he or she knows to be false is a Class A misdemeanor.
4. **Employees Interviews.** The Contractor and each subcontractor shall permit his/her employees to be interviewed on the job, during working hours, by compliance investigators of the Department or the Department of Labor.

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

SPECIAL PROVISION
FOR
EQUIPMENT RENTAL RATES

Effective: January 1, 2012

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.

Replace Article 109.04(b)(4) with the following:

- "(4) Equipment. For any machinery or special equipment (other than small tools) the use of which has been authorized by the Engineer, the Contractor will be paid according to the latest revision of "SCHEDULE OF AVERAGE ANNUAL EQUIPMENT OWNERSHIP EXPENSE" and latest index factor as issued by the Illinois Department of Transportation. The equipment should be of a type and size reasonably required to complete the extra work."

Cook County Prevailing Wage for March 2013

(See explanation of column headings at bottom of wages)

Trade Name	RG	TYP	C	Base	FRMAN	M-F>8	OSA	OSH	H/W	Pensn	Vac	Trng
=====	==	===	=	=====	=====	=====	===	===	=====	=====	=====	=====
ASBESTOS ABT-GEN		ALL		36.200	36.700	1.5	1.5	2.0	12.78	9.020	0.000	0.500
ASBESTOS ABT-MEC		BLD		34.160	36.660	1.5	1.5	2.0	10.82	10.66	0.000	0.720
BOILERMAKER		BLD		43.450	47.360	2.0	2.0	2.0	6.970	14.66	0.000	0.350
BRICK MASON		BLD		40.680	44.750	1.5	1.5	2.0	9.550	12.00	0.000	0.970
CARPENTER		ALL		41.520	43.520	1.5	1.5	2.0	13.19	11.75	0.000	0.530
CEMENT MASON		ALL		42.350	44.350	2.0	1.5	2.0	11.21	11.40	0.000	0.320
CERAMIC TILE FNSHER		BLD		34.440	0.000	2.0	1.5	2.0	9.700	6.930	0.000	0.610
COMM. ELECT.		BLD		37.500	40.150	1.5	1.5	2.0	8.420	9.980	1.100	0.700
ELECTRIC PWR EQMT OP		ALL		43.350	48.350	1.5	1.5	2.0	10.38	13.50	0.000	0.430
ELECTRIC PWR GRNDMAN		ALL		33.810	48.350	1.5	1.5	2.0	8.090	10.53	0.000	0.330
ELECTRIC PWR LINEMAN		ALL		43.350	48.350	1.5	1.5	2.0	10.38	13.50	0.000	0.430
ELECTRICIAN		ALL		42.000	44.800	1.5	1.5	2.0	12.83	13.07	0.000	0.750
ELEVATOR CONSTRUCTOR		BLD		49.080	55.215	2.0	2.0	2.0	11.88	12.71	3.930	0.600
FENCE ERECTOR		ALL		33.740	35.740	1.5	1.5	2.0	12.61	10.18	0.000	0.250
GLAZIER		BLD		39.500	41.000	1.5	2.0	2.0	11.99	14.30	0.000	0.840
HT/FROST INSULATOR		BLD		45.550	48.050	1.5	1.5	2.0	10.82	11.86	0.000	0.720
IRON WORKER		ALL		40.750	42.750	2.0	2.0	2.0	13.20	19.09	0.000	0.350
LABORER		ALL		36.200	36.950	1.5	1.5	2.0	12.78	9.020	0.000	0.500
LATHER		ALL		41.520	43.520	1.5	1.5	2.0	13.19	11.75	0.000	0.530
MACHINIST		BLD		43.550	46.050	1.5	1.5	2.0	6.130	8.950	1.850	0.000
MARBLE FINISHERS		ALL		29.700	0.000	1.5	1.5	2.0	9.550	11.75	0.000	0.620
MARBLE MASON		BLD		39.880	43.870	1.5	1.5	2.0	9.550	11.75	0.000	0.730
MATERIAL TESTER I		ALL		26.200	0.000	1.5	1.5	2.0	12.78	9.020	0.000	0.500
MATERIALS TESTER II		ALL		31.200	0.000	1.5	1.5	2.0	12.78	9.020	0.000	0.500
MILLWRIGHT		ALL		41.520	43.520	1.5	1.5	2.0	13.19	11.75	0.000	0.530
OPERATING ENGINEER		BLD	1	45.100	49.100	2.0	2.0	2.0	15.70	10.55	1.900	1.250
OPERATING ENGINEER		BLD	2	43.800	49.100	2.0	2.0	2.0	15.70	10.55	1.900	1.250
OPERATING ENGINEER		BLD	3	41.250	49.100	2.0	2.0	2.0	15.70	10.55	1.900	1.250
OPERATING ENGINEER		BLD	4	39.500	49.100	2.0	2.0	2.0	15.70	10.55	1.900	1.250
OPERATING ENGINEER		BLD	5	48.850	49.100	2.0	2.0	2.0	15.70	10.55	1.900	1.250
OPERATING ENGINEER		BLD	6	46.100	49.100	2.0	2.0	2.0	15.70	10.55	1.900	1.250
OPERATING ENGINEER		BLD	7	48.100	49.100	2.0	2.0	2.0	15.70	10.55	1.900	1.250
OPERATING ENGINEER		FLT	1	51.300	51.300	1.5	1.5	2.0	11.70	8.050	1.900	1.150
OPERATING ENGINEER		FLT	2	49.800	51.300	1.5	1.5	2.0	11.70	8.050	1.900	1.150
OPERATING ENGINEER		FLT	3	44.350	51.300	1.5	1.5	2.0	11.70	8.050	1.900	1.150
OPERATING ENGINEER		FLT	4	36.850	51.300	1.5	1.5	2.0	11.70	8.050	1.900	1.150
OPERATING ENGINEER		HWY	1	43.300	47.300	1.5	1.5	2.0	15.70	10.55	1.900	1.250
OPERATING ENGINEER		HWY	2	42.750	47.300	1.5	1.5	2.0	15.70	10.55	1.900	1.250
OPERATING ENGINEER		HWY	3	40.700	47.300	1.5	1.5	2.0	15.70	10.55	1.900	1.250
OPERATING ENGINEER		HWY	4	39.300	47.300	1.5	1.5	2.0	15.70	10.55	1.900	1.250
OPERATING ENGINEER		HWY	5	38.100	47.300	1.5	1.5	2.0	15.70	10.55	1.900	1.250
OPERATING ENGINEER		HWY	6	46.300	47.300	1.5	1.5	2.0	15.70	10.55	1.900	1.250
OPERATING ENGINEER		HWY	7	44.300	47.300	1.5	1.5	2.0	15.70	10.55	1.900	1.250
ORNAMNTL IRON WORKER		ALL		40.800	43.300	2.0	2.0	2.0	12.86	15.61	0.000	0.500
PAINTER		ALL		40.000	44.750	1.5	1.5	1.5	9.750	11.10	0.000	0.770
PAINTER SIGNS		BLD		33.920	38.090	1.5	1.5	1.5	2.600	2.710	0.000	0.000
PILEDRIVER		ALL		41.520	43.520	1.5	1.5	2.0	13.19	11.75	0.000	0.530
PIPEFITTER		BLD		45.050	48.050	1.5	1.5	2.0	8.460	14.85	0.000	1.780
PLASTERER		BLD		40.250	42.670	1.5	1.5	2.0	10.85	10.94	0.000	0.550
PLUMBER		BLD		45.000	47.000	1.5	1.5	2.0	12.53	10.06	0.000	0.880
ROOFER		BLD		38.350	41.350	1.5	1.5	2.0	8.280	8.770	0.000	0.430
SHEETMETAL WORKER		BLD		40.810	44.070	1.5	1.5	2.0	10.13	17.79	0.000	0.630

SIGN HANGER		BLD	30.210	30.710	1.5	1.5	2.0	4.850	3.030	0.000	0.000
SPRINKLER FITTER		BLD	49.200	51.200	1.5	1.5	2.0	10.25	8.200	0.000	0.450
STEEL ERECTOR		ALL	40.750	42.750	2.0	2.0	2.0	13.20	19.09	0.000	0.350
STONE MASON		BLD	40.680	44.750	1.5	1.5	2.0	9.550	12.00	0.000	0.970
TERRAZZO FINISHER		BLD	35.510	0.000	1.5	1.5	2.0	9.700	9.320	0.000	0.400
TERRAZZO MASON		BLD	39.370	42.370	1.5	1.5	2.0	9.700	10.66	0.000	0.550
TILE MASON		BLD	41.430	45.430	2.0	1.5	2.0	9.700	8.640	0.000	0.710
TRAFFIC SAFETY WRKR		HWY	28.250	29.850	1.5	1.5	2.0	4.896	4.175	0.000	0.000
TRUCK DRIVER	E	ALL 1	33.850	34.500	1.5	1.5	2.0	8.150	8.500	0.000	0.150
TRUCK DRIVER	E	ALL 2	34.100	34.500	1.5	1.5	2.0	8.150	8.500	0.000	0.150
TRUCK DRIVER	E	ALL 3	34.300	34.500	1.5	1.5	2.0	8.150	8.500	0.000	0.150
TRUCK DRIVER	E	ALL 4	34.500	34.500	1.5	1.5	2.0	8.150	8.500	0.000	0.150
TRUCK DRIVER	W	ALL 1	32.550	33.100	1.5	1.5	2.0	6.500	4.350	0.000	0.000
TRUCK DRIVER	W	ALL 2	32.700	33.100	1.5	1.5	2.0	6.500	4.350	0.000	0.000
TRUCK DRIVER	W	ALL 3	32.900	33.100	1.5	1.5	2.0	6.500	4.350	0.000	0.000
TRUCK DRIVER	W	ALL 4	33.100	33.100	1.5	1.5	2.0	6.500	4.350	0.000	0.000
TUCKPOINTER		BLD	40.950	41.950	1.5	1.5	2.0	8.180	10.82	0.000	0.940

Legend:

RG (Region)
 TYP (Trade Type - All,Highway,Building,Floating,Oil & Chip,Rivers)
 C (Class)
 Base (Base Wage Rate)
 FRMAN (Foreman Rate)
 M-F>8 (OT required for any hour greater than 8 worked each day, Mon through Fri.)
 OSA (Overtime (OT) is required for every hour worked on Saturday)
 OSH (Overtime is required for every hour worked on Sunday and Holidays)
 H/W (Health & Welfare Insurance)
 Pensn (Pension)
 Vac (Vacation)
 Trng (Training)

Explanations

COOK COUNTY

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

TRUCK DRIVERS (WEST) - That part of the county West of Barrington Road.

EXPLANATION OF CLASSES

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

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

CERAMIC TILE FINISHER

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

COMMUNICATIONS ELECTRICIAN

Installation, operation, inspection, maintenance, repair and service of radio, television, recording, voice sound vision production and reproduction, telephone and telephone interconnect, facsimile, data apparatus, coaxial, fibre optic and wireless equipment, appliances and systems used for the transmission and reception of signals of any nature, business, domestic, commercial, education, entertainment, and residential purposes, including but not limited to, communication and telephone, electronic and sound equipment, fibre optic and data communication systems, and the performance of any task directly related to such installation or service whether at new or existing sites, such tasks to include the placing of wire and cable and electrical power conduit or other raceway work within the equipment room and pulling wire and/or cable through conduit and the installation of any incidental conduit, such that the employees covered hereby can complete any job in full.

MARBLE FINISHER

Loading and unloading trucks, distribution of all materials (all stone, sand, etc.), stocking of floors with material, performing all rigging for heavy work, the handling of all material that may be needed for the installation of such materials, building of scaffolding, polishing if needed, patching, waxing of material if damaged, pointing up, caulking, grouting and cleaning of marble, holding water on diamond or Carborundum blade or saw for setters cutting, use of tub saw or any other saw needed for preparation of

material, drilling of holes for wires that anchor material set by setters, mixing up of molding plaster for installation of material, mixing up thin set for the installation of material, mixing up of sand to cement for the installation of material and such other work as may be required in helping a Marble Setter in the handling of all material in the erection or installation of interior marble, slate, travertine, art marble, serpentine, alberene stone, blue stone, granite and other stones (meaning as to stone any foreign or domestic materials as are specified and used in building interiors and exteriors and customarily known as stone in the trade), carrara, sanionyx, vitrolite and similar opaque glass and the laying of all marble tile, terrazzo tile, slate tile and precast tile, steps, risers treads, base, or any other materials that may be used as substitutes for any of the aforementioned materials and which are used on interior and exterior which are installed in a similar manner.

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

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

OPERATING ENGINEER - BUILDING

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

Class 2. Boilers; Broom, All Power Propelled; Bulldozers; Concrete Mixer (Two Bag and Over); Conveyor, Portable; Forklift Trucks; Highlift Shovels or Front Endloaders under 2-1/4 yd.; Hoists, Automatic; Hoists, Inside Elevators; Hoists, Sewer Dragging Machine; Hoists, Tugger Single Drum; Rock Drill (Self-Propelled); Rock Drill (Truck Mounted); Rollers, All; Steam Generators; Tractors, All; Tractor Drawn Vibratory Roller; Winch Trucks with "A" Frame.

Class 3. Air Compressor; Combination Small Equipment Operator; Generators; Heaters, Mechanical; Hoists, Inside Elevators; Hydraulic

Power Units (Pile Driving, Extracting, and Drilling); Pumps, over 3" (1 to 3 not to exceed a total of 300 ft.); Low Boys; Pumps, Well Points; Welding Machines (2 through 5); Winches, 4 Small Electric Drill Winches; Bobcats (up to and including $\frac{3}{4}$ cu yd.) .

Class 4. Bobcats and/or other Skid Steer Loaders (other than bobcats up to and including $\frac{3}{4}$ cu yd.); Oilers; and Brick Forklift.

Class 5. Assistant Craft Foreman.

Class 6. Gradall.

Class 7. Mechanics.

OPERATING ENGINEERS - HIGHWAY CONSTRUCTION

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

Class 2. Batch Plant; Bituminous Mixer; Boiler and Throttle Valve; Bulldozers; Car Loader Trailing Conveyors; Combination Backhoe Front Endloader Machine (Less than 1 cu. yd. Backhoe Bucket or over or with attachments); Compressor and Throttle Valve; Compressor, Common Receiver (3); Concrete Breaker or Hydro Hammer; Concrete Grinding Machine; Concrete Mixer or Paver 7S Series to and including 27 cu. ft.; Concrete Spreader; Concrete Curing Machine, Burlap Machine, Belting Machine and Sealing Machine; Concrete Wheel Saw; Conveyor Muck Cars (Haglund or Similar Type); Drills, All; Finishing Machine - Concrete; Highlift Shovels or Front Endloader; Hoist - Sewer Dragging Machine; Hydraulic Boom Trucks (All Attachments); Hydro-Blaster; All Locomotives, Dinky; Off-Road Hauling Units (including articulating)/2 ton capacity or more; Non Self-Loading Ejection Dump; Pump Cretes: Squeeze Cretes - Screw Type Pumps, Gypsum Bulker and Pump; Roller, Asphalt; Rotary Snow Plows; Rototiller, Seaman, etc., self-propelled;

Scoops - Tractor Drawn; Self-Propelled Compactor; Spreader - Chip - Stone, etc.; Scraper; Scraper - Prime Mover in Tandem (Regardless of Size); Tank Car Heater; Tractors, Push, Pulling Sheeps Foot, Disc, Compactor, etc.; Tug Boats.

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

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

Class 5. Bobcats (all); Brick Forklifts; Oilers.

Class 6. Field Mechanics and Field Welders

Class 7. Gradall and machines of like nature.

OPERATING ENGINEER - FLOATING

Class 1. Craft Foreman; Diver/Wet Tender; and Engineer (hydraulic dredge).

Class 2. Crane/Backhoe Operator; 70 Ton or over Tug Operator; Mechanic/Welder; Assistant Engineer (Hydraulic Dredge); Leverman (Hydraulic Dredge); Diver Tender; Friction and Lattice Boom Cranes.

Class 3. Deck Equipment Operator, Machineryman; Maintenance of Crane (over 50 ton capacity); Tug/Launch Operator; Loader/Dozer and like equipment on Barge; and Deck Machinery, etc.

Class 4. Deck Equipment Operator, Machineryman/Fireman (4 Equipment Units or More); Off Road Trucks (2 ton capacity or more); Deck Hand, Tug Engineer, Crane Maintenance 50 Ton Capacity and Under or Backhoe Weighing 115,000 pounds or less; and Assistant Tug Operator.

TERRAZZO FINISHER

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

TRAFFIC SAFETY

Work associated with barricades, horses and drums used to reduce lane usage on highway work, the installation and removal of temporary lane

markings, and the installation and removal of temporary road signs.

TRUCK DRIVER - BUILDING, HEAVY AND HIGHWAY CONSTRUCTION - EAST & WEST

Class 1. Two or three Axle Trucks. A-frame Truck when used for transportation purposes; Air Compressors and Welding Machines, including those pulled by cars, pick-up trucks and tractors; Ambulances; Batch Gate Lockers; Batch Hopperman; Car and Truck Washers; Carry-alls; Fork Lifts and Hoisters; Helpers; Mechanics Helpers and Greasers; Oil Distributors 2-man operation; Pavement Breakers; Pole Trailer, up to 40 feet; Power Mower Tractors; Self-propelled Chip Spreader; Skipman; Slurry Trucks, 2-man operation; Slurry Truck Conveyor Operation, 2 or 3 man; Teamsters; Unskilled Dumpman; and Truck Drivers hauling warning lights, barricades, and portable toilets on the job site.

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

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

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

Other Classifications of Work:

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

LANDSCAPING

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

landscape truck drivers (regardless of size of truck driven) is covered by the classifications of truck driver.



Route Maple Avenue Relief Seewr
Section 12-00088-00-FP
County Cook

Marked Rte. _____
Project No. _____
Contract No. _____

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

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

Ryan Gillingham, PE
Print Name
Director of Public Works
Title
Village of La Grange
Agency

Ryan Gillingham
Signature
11/29/2012
Date

I. Site Description:

- A. Provide a description of the project location (include latitude and longitude):
The improvements are located on Maple Avenue between 6th Ave and Bluff Ave in the Village of La Grange, Cook County, Illinois. (41°48'N, 87°51'W)
- B. Provide a description of the construction activity which is the subject of this plan:
The improvements consist of pavement reconstruction, storm sewer installation, relief sewer installation, water main installation, sanitary sewer installation, curb & gutter, driveways, and parkway restoration.
- C. Provide the estimated duration of this project:
The project will begin in April 2013 and end in November 2013
- D. The total area of the construction site is estimated to be 2.1 acres.
The total area of the site estimated to be disturbed by excavation, grading or other activities is 1.7 acres.
- E. The following is a weighted average of the runoff coefficient for this project after construction activities are completed:
0.65
- F. List all soils found within project boundaries. Include map unit name, slope information, and erosivity:
Topsoil, clay, and aggregate. Topsoil and clay very erosive, aggregate moderately erosive
- G. Provide an aerial extent of wetland acreage at the site:
0.0 ac

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

Excavations, parkways

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

Roadway and utility excavation will be below grade and will not erode offsite. Exposed roadway subgrade will be covered with stone and utility trenches filled at the end of each day. Parkway areas will be graded at slopes not to exceed 1:4 (V:H). These will be stabilized.

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

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

Village of La Grange.

L. The following is a list of receiving water(s) and the ultimate receiving water(s) for this site. The location of the receiving waters can be found on the erosion and sediment control plans:

All storm water discharges to the Village's combined sanitary/storm sewer system. This combined sewer system flows to the Metropolitan Reclamation District of Greater Chicago.

M. Describe areas of the site that are to be protected or remain undisturbed. These areas may include steep slopes, highly erodible soils, streams, stream buffers, specimen trees, natural vegetation, nature preserves, etc.

Primarily parkways will remain undisturbed by construction. Disturbance and restoration will be minimized wherever possible.

N. The following sensitive environmental resources are associated with this project, and may have the potential to be impacted by the proposed development:

- Floodplain
- Wetland Riparian
- Threatened and Endangered Species
- Historic Preservation
- 303(d) Listed receiving waters for suspended solids, turbidity, or siltation
- Receiving waters with Total Maximum Daily Load (TMDL) for sediment, total suspended solids, turbidity or siltation
- Applicable Federal, Tribal, State or Local Programs
- Other

1. 303(d) Listed receiving waters (fill out this section if checked above):

a. The name(s) of the listed water body, and identification of all pollutants causing impairment:

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

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

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

2. TMDL (fill out this section if checked above)

- a. The name(s) of the listed water body:
- b. Provide a description of the erosion and sediment control strategy that will be incorporated into the site design that is consistent with the assumptions and requirements of the TMDL:
- c. If a specific numeric waste load allocation has been established that would apply to the project's discharges, provide a description of the necessary steps to meet that allocation:

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

- | | |
|---|--|
| <input checked="" type="checkbox"/> Soil Sediment | <input checked="" type="checkbox"/> Petroleum (gas, diesel, oil, kerosene, hydraulic oil / fluids) |
| <input checked="" type="checkbox"/> Concrete | <input type="checkbox"/> Antifreeze / Coolants |
| <input checked="" type="checkbox"/> Concrete Truck Waste | <input type="checkbox"/> Waste water from cleaning construction equipment |
| <input checked="" type="checkbox"/> Concrete Curing Compounds | <input type="checkbox"/> Other (specify) |
| <input type="checkbox"/> Solid Waste Debris | <input type="checkbox"/> Other (specify) |
| <input type="checkbox"/> Paints | <input type="checkbox"/> Other (specify) |
| <input type="checkbox"/> Solvents | <input type="checkbox"/> Other (specify) |
| <input checked="" type="checkbox"/> Fertilizers / Pesticides | <input type="checkbox"/> 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 ILR10. Each such Contractor has signed the required certification on forms which are attached to, and are a part of, this plan:

A. Erosion and Sediment Controls

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 seven (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 fourteen (14) or more calendar days.

Where the initiation of stabilization measures by the seventh 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:

- | | |
|---|---|
| <input checked="" type="checkbox"/> Preservation of Mature Vegetation | <input type="checkbox"/> Erosion Control Blanket / Mulching |
| <input type="checkbox"/> Vegetated Buffer Strips | <input checked="" type="checkbox"/> Sodding |
| <input checked="" type="checkbox"/> Protection of Trees | <input type="checkbox"/> Geotextiles |
| <input checked="" type="checkbox"/> Temporary Erosion Control Seeding | <input type="checkbox"/> Other (specify) |
| <input type="checkbox"/> Temporary Turf (Seeding, Class 7) | <input type="checkbox"/> Other (specify) |
| <input checked="" type="checkbox"/> Temporary Mulching | <input type="checkbox"/> Other (specify) |
| <input type="checkbox"/> Permanent Seeding | <input type="checkbox"/> Other (specify) |

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

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 be 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. Temporary Erosion Control Seeding seed mixture shall depend on the time of the year it is applied. Oats shall be applied from March 1 to July 31 and Winter Wheat shall be applied from August 1 to November 15.

Temporary mulch shall be applied in accordance with the Section 251 of the "Standard Specifications for Road and Bridge Construction" (current edition). Mulch shall be utilized in disturbed areas that are to be inactive for more than 14 days when temporary seed will not germinate to provide protection. Temporary mulch cannot be utilized in areas of ditch flow. Ditch flow areas shall receive adequate soil preparation and be temporarily stabilized using temporary erosion control seed, erosion control blanket, and temporary ditch checks.

Sodding shall be applied in accordance with Section 252 of the "Standard Specifications for Road and Bridge Construction" (current edition). Under no circumstances shall the contractor prolong final grading and shaping so that the entire project can be permanently stabilized at one time.

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

Sodding is provided for roadway parkways on residential streets to prevent soil erosion after construction is complete.

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:

- | | |
|--|--|
| <input checked="" type="checkbox"/> Perimeter Erosion Barrier | <input type="checkbox"/> Rock Outlet Protection |
| <input type="checkbox"/> Temporary Ditch Check | <input type="checkbox"/> Riprap |
| <input checked="" type="checkbox"/> Storm Drain Inlet Protection | <input type="checkbox"/> Gabions |
| <input checked="" type="checkbox"/> Sediment Trap | <input type="checkbox"/> Slope Mattress |
| <input type="checkbox"/> Temporary Pipe Slope Drain | <input type="checkbox"/> Retaining Walls |
| <input type="checkbox"/> Temporary Sediment Basin | <input type="checkbox"/> Slope Walls |
| <input type="checkbox"/> Temporary Stream Crossing | <input type="checkbox"/> Concrete Revetment Mats |
| <input type="checkbox"/> Stabilized Construction Exits | <input type="checkbox"/> Level Spreaders |
| <input type="checkbox"/> Turf Reinforcement Mats | <input type="checkbox"/> Other (specify) |
| <input type="checkbox"/> Permanent Check Dams | <input type="checkbox"/> Other (specify) |
| <input type="checkbox"/> Permanent Sediment Basin | <input type="checkbox"/> Other (specify) |
| <input type="checkbox"/> Aggregate Ditch | <input type="checkbox"/> Other (specify) |
| <input type="checkbox"/> Paved Ditch | <input type="checkbox"/> Other (specify) |

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

Perimeter Erosion Barrier (Silt Fence) will be placed along all areas that slope away from the project. Storm Drain Inlet Protection will be installed on all open-lidded structures (existing and proposed) to prevent sediment from entering the storm sewer. Inlet and Pipe Protection shall use a combination of perimeter erosion barrier and erosion control blanket. Straw bales shall not be used in concentrated flow.

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

Once construction is complete, these structural practices shall be removed.

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 Chapter 41 (Construction Site Storm Water Pollution Control) of the IDOT Bureau of Design and Environment Manual. If practices other than those discussed in Chapter 41 are selected for implementation or if practices are applied to situations different from those covered in Chapter 41, the technical basis for such decisions will be explained below.

- 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:

4. **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. Procedures and requirements specified in applicable sediment and erosion site plans or storm water management plans approved by local officials shall be described or incorporated by reference in the space provided below. Requirements specified in sediment and erosion site plans, site permits, storm water management site plans or site permits approved by local officials that are applicable to protecting surface water resources are, upon submittal of an NOI, to be authorized to discharge under the Permit ILR10 incorporated by reference and are enforceable under this permit even if they are not specifically included in the plan.

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

All management practices, controls, and other provisions provided in this plan are in accordance with the "Standard Specifications for Road and Bridge Construction" (current edition) see Article 105.03, and Village requirements, which are at least as protective as the IEPA Illinois Urban Manual, 1995.

5. **Contractor Required Submittals:** Prior to conducting any professional services at the site covered by this plan, the Contractor and each subcontractor responsible for compliance with the permit shall submit to the Resident Engineer a Contractor Certification Statement, BDE 2342a.
 - a. The Contractor shall provide a construction schedule containing an adequate level of detail to show major activities with implementation of pollution prevention BMPs, including the following items:
 - Approximate duration of the project, including each stage of the project
 - Rainy season, dry season, and winter shutdown dates
 - Temporary stabilization measures to be employed by contract phases
 - Mobilization timeframe
 - Mass clearing and grubbing/roadside clearing dates
 - Deployment of Erosion Control Practices
 - Deployment of Sediment Control Practices (including stabilized construction entrances/exits)
 - Deployment of Construction Site Management Practices (including concrete washout facilities, chemical storage, refueling locations, etc.)
 - Paving, saw-cutting, and any other pavement related operations
 - Major planned stockpiling operations
 - Timeframe for other significant long-term operations or activities that may plan non-storm water discharges such as dewatering, grinding, etc.
 - Permanent stabilization activities for each area of the project
 - b. The Contractor and each subcontractor shall provide, as an attachment to their signed Contractor Certification Statement, a discussion of how they will comply with the requirements of the permit in regard to the following items and provide a graphical representation showing location and type of BMPs to be used when applicable:
 - Vehicle Entrances and Exits – Identify type and location of stabilized construction entrances and exits to be used and how they will be maintained.
 - Material Delivery, Storage and Use – Discuss where and how materials including chemicals, concrete curing compounds, petroleum products, etc. will be stored for this project.

- Stockpile Management – Discuss what BMPs will be used to prevent pollution of storm water from stockpiles.
- Waste Disposal – Discuss methods of waste disposal that will be used for this project.
- Spill Prevention and Control – Discuss steps that will be taken in the event of a material spill (chemicals, concrete curing compounds, petroleum, etc.)
- Concrete Residuals and Washout Wastes – Discuss the location and type of concrete washout facilities to be used on this project and how they will be signed and maintained.
- Litter Management – Discuss how litter will be maintained for this project (education of employees, number of dumpsters, frequency of dumpster pick-up, etc.).
- Vehicle and Equipment Fueling – Identify equipment fueling locations for this project and what BMPs will be used to ensure containment and spill prevention.
- Vehicle and Equipment Cleaning and Maintenance – Identify where equipment cleaning and maintenance locations for this project and what BMPs will be used to ensure containment and spill prevention.
- Additional measures indicated in the plan.

III. Maintenance:

When requested by the Contractor, the Resident Engineer will provide general maintenance guides to the Contractor for the practices associated with this project. The following additional procedures will be used to maintain, in good and effective operating conditions, the vegetation, erosion and sediment control measures and other protective measures identified in this plan. It will be the Contractor's responsibility to attain maintenance guidelines for any manufactured BMPs which are to be installed and maintained per manufacture's specifications.

All erosion and sediment control measures should be checked weekly and after each significant rainfall, 0.5 inch or greater in a 24 hour period, or equivalent snowfall. Additionally, during winter months, all measures should be checked after each significant snowmelt.

All erosion and sediment control measures should be included in the list of items to be inspected. (IDOT's Field Guide for Construction Inspection: <http://www.dot.il.gov/desenv/environmental/IDOT%20Field%20Guide.pdf>)

IDOT's maintenance guidance: <http://www.dot.il.gov/desenv/environmental/bestpractices.html>

All maintenance of erosion and sediment control systems is the responsibility of the contractor, and are 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 using IDOT Storm Water Pollution Prevention Plan Erosion Control Inspection Report (BC 2259). Such inspections shall be conducted at least once every seven (7) calendar days and within twenty-four (24) hours of the end of a storm that is 0.5 inch or greater or equivalent snowfall.

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

The Incidence of Non-Compliance shall be mailed to the following address:

Illinois Environmental Protection Agency
 Division of Water Pollution Control
 Attn: Compliance Assurance Section
 1021 North Grand East
 Post Office Box 19276
 Springfield, Illinois 62794-9276

V. Failure to Comply:

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

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

OWNER INFORMATION

Permit No. ILR10 _____

Company/Owner Name: Village of La Grange
Mailing Address: 53 South La Grange Road Phone: 708 579 2300
City: La Grange State: IL Zip: 60525-0668 Fax: 708 579 0980
Contact Person: Ryan Gillingham, Director of Public Works E-mail: rgillingham@villageoflagrange.com
Owner Type (select one) City

CONTRACTOR INFORMATION

MS4 Community: Yes No

Contractor Name: To be Determined
Mailing Address: _____ Phone: _____
City: _____ State: _____ Zip: _____ Fax: _____

CONSTRUCTION SITE INFORMATION

Select One: New Change of information for: ILR10 _____
Project Name: Village of La Grange, Illinois - Maple Avenue Relief Sewer County: Cook
Street Address: Maple Ave., Bluff Ave. to 6th Ave. City: La Grange IL Zip: 60525
Latitude: 41 48 33 Longitude: 87 51 51 4 38N 12 E
(Deg) (Min) (Sec) (Deg) (Min) (Sec) Section Township Range
Approximate Construction Start Date Mar 12, 2013 Approximate Construction End Date Nov 8, 2013

Total size of construction site in acres: 1.6

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: Maple Avenue construction site City: La Grange
SWPPP contact information: Inspector qualifications: _____
Contact Name: Daniel J. Schug P.E. _____
Phone: 815 459 1260 Fax: 815 455 0450 E-mail: dschug@baxterwoodman.com
Project inspector, if different from above Inspector qualifications: _____
Inspector's Name: Dennis S. Dabros P.E. _____
Phone: 815 459 1260 Fax: 815 455 0450 E-mail: ddabros@baxterwoodman.com

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 Other

SIC Code: 1623

Type a detailed description of the project:

Construction of sanitary sewers and sanitary sewer service lines, water main and water service lines, storm sewers, and a relief sewer along Maple Avenue, between Bluff Avenue and 6th Avenue. After completion of the underground construction, the entire street pavement and curbs and gutters along Maple Avenue, and the side street intersections, will be completely reconstructed.

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 La Grange, and then to MWRDGC.

Name of closest receiving water body to which you discharge: MWRDGC's TARP system, then to MWRDGS's WWTP

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:

Ryan Gillingham
Printed Name:

11/29/2012
Date:

Director of Public Works, La Grange
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.

BDE SPECIAL PROVISIONS
For the January 18 and March 8, 2013 Lettings

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

<u>File Name</u>	<u>#</u>	<u>Special Provision Title</u>	<u>Effective</u>	<u>Revised</u>
80240	1	Above Grade Inlet Protection	July 1, 2009	Jan. 1, 2012
80099	2	Accessible Pedestrian Signals (APS)	April 1, 2003	Jan. 1, 2007
* 80274	3	Aggregate Subgrade Improvement	April 1, 2012	Jan. 1, 2013
* 80309	4	Anchor Bolts	Jan. 1, 2013	
80192	5	Automated Flagger Assistance Device	Jan. 1, 2008	
80173	6	Bituminous Materials Cost Adjustments	Nov. 2, 2006	Jan. 1, 2012
80241	7	Bridge Demolition Debris	July 1, 2009	
80276	8	Bridge Relief Joint Sealer	Jan. 1, 2012	Aug. 1, 2012
50261	9	Building Removal-Case I (Non-Friable and Friable Asbestos)	Sept. 1, 1990	April 1, 2010
50481	10	Building Removal-Case II (Non-Friable Asbestos)	Sept. 1, 1990	April 1, 2010
50491	11	Building Removal-Case III (Friable Asbestos)	Sept. 1, 1990	April 1, 2010
50531	12	Building Removal-Case IV (No Asbestos)	Sept. 1, 1990	April 1, 2010
80292	13	Coarse Aggregate in Bridge Approach Slabs/Footings	April 1, 2012	
* 80310	14	✓ Coated Galvanized Steel Conduit	Jan. 1, 2013	
80198	15	Completion Date (via calendar days)	April 1, 2008	
80199	16	Completion Date (via calendar days) Plus Working Days	April 1, 2008	
80293	17	Concrete Box Culverts with Skews > 30 Degrees and Design Fills ≤ 5 Feet	April 1, 2012	
80294	18	Concrete Box Culverts with Skews ≤ 30 Degrees Regardless of Design Fill and Skews > 30 Degrees with Design Fills > 5 Feet	April 1, 2012	
* 80311	19	Concrete End Sections for Pipe Culverts	Jan. 1, 2013	
80277	20	Concrete Mix Design – Department Provided	Jan. 1, 2012	
80261	21	✓ Construction Air Quality – Diesel Retrofit	June 1, 2010	
80029	22	Disadvantaged Business Enterprise Participation	Sept. 1, 2000	Aug. 2, 2011
* 80312	23	Drain Pipe, Tile, Drainage Mat, and Wall Drain	Jan. 1, 2013	
* 80313	24	Fabric Bearing Pads	Jan. 1, 2013	
80265	25	Friction Aggregate	Jan. 1, 2011	
80229	26	Fuel Cost Adjustment	April 1, 2009	July 1, 2009
80303	27	✓ Granular Materials	Nov. 1, 2012	
* 80304	28	Grooving for Recessed Pavement Markings	Nov. 1, 2012	Jan. 1, 2013
* 80169	29	High Tension Cable Median Barrier	Jan. 1, 2007	Jan. 1, 2013
80246	30	✓ Hot-Mix Asphalt – Density Testing of Longitudinal Joints	Jan. 1, 2010	April 1, 2012
* 80315	31	Insertion Lining of Culverts	Jan. 1, 2013	
80045	32	Material Transfer Device	June 15, 1999	Jan. 1, 2009
80297	33	Modified Urethane Pavement Marking	April 1, 2012	
80165	34	Moisture Cured Urethane Paint System	Nov. 1, 2006	Jan. 1, 2010
* 80253	35	Movable Traffic Barrier	Jan. 1, 2010	Jan. 1, 2013
80231	36	Pavement Marking Removal	April 1, 2009	
80298	37	Pavement Marking Tape Type IV	April 1, 2012	
80254	38	Pavement Patching	Jan. 1, 2010	
80022	39	✓ Payments to Subcontractors	June 1, 2000	Jan. 1, 2006
* 80316	40	✓ Placing and Consolidating Concrete	Jan. 1, 2013	
80278	41	Planting Woody Plants	Jan. 1, 2012	Aug. 1, 2012
* 80305	42	Polyurea Pavement Markings	Nov. 1, 2012	Jan. 1, 2013
* 80279	43	✓ Portland Cement Concrete	Jan. 1, 2012	Jan. 1, 2013
80300	44	Preformed Plastic Pavement Marking Type D - Inlaid	April 1, 2012	
80218	45	Preventive Maintenance – Bituminous Surface Treatment	Jan. 1, 2009	April 1, 2012
80219	46	Preventive Maintenance – Cape Seal	Jan. 1, 2009	April 1, 2012

<u>File Name</u>	<u>#</u>	<u>Special Provision Title</u>	<u>Effective</u>	<u>Revised</u>
80220	47	<input type="checkbox"/> Preventive Maintenance – Micro-Surfacing	Jan. 1, 2009	April 1, 2012
80221	48	<input type="checkbox"/> Preventive Maintenance – Slurry Seal	Jan. 1, 2009	April 1, 2012
* 80281	49	<input checked="" type="checkbox"/> Quality Control/Quality Assurance of Concrete Mixtures	Jan. 1, 2012	Jan. 1, 2013
34261	50	<input type="checkbox"/> Railroad Protective Liability Insurance	Dec. 1, 1986	Jan. 1, 2006
80157	51	<input type="checkbox"/> Railroad Protective Liability Insurance (5 and 10)	Jan. 1, 2006	
* 80306	52	<input type="checkbox"/> Reclaimed Asphalt Pavement (RAP) and Reclaimed Asphalt Shingles (RAS)	Nov. 1, 2012	Jan. 1, 2013
80283	53	<input checked="" type="checkbox"/> Removal and Disposal of Regulated Substances	Jan. 1, 2012	
80224	54	<input type="checkbox"/> Restoring Bridge Approach Pavements Using High-Density Foam	Jan. 1, 2009	Jan. 1, 2012
80271	55	<input type="checkbox"/> Safety Edge	April 1, 2011	
80307	56	<input type="checkbox"/> Seeding	Nov. 1, 2012	
80127	57	<input type="checkbox"/> Steel Cost Adjustment	April 2, 2004	April 1, 2009
80255	58	<input type="checkbox"/> Stone Matrix Asphalt	Jan. 1, 2010	Jan. 1, 2012
80143	59	<input checked="" type="checkbox"/> Subcontractor Mobilization Payments	April 2, 2005	April 1, 2011
* 80317	60	<input type="checkbox"/> Surface Testing of Hot-Mix Asphalt Overlays (NOTE: This special provision was previously named "Surface Testing of Pavements".)	Jan. 1, 2013	
80308	61	<input checked="" type="checkbox"/> Synthetic Fibers in Concrete Gutter, Curb, Median and Paved Ditch	Nov. 1, 2012	
80286	62	<input checked="" type="checkbox"/> Temporary Erosion and Sediment Control	Jan. 1, 2012	
80225	63	<input type="checkbox"/> Temporary Raised Pavement Marker	Jan. 1, 2009	
* 80256	64	<input type="checkbox"/> Temporary Water Filled Barrier	Jan. 1, 2010	Jan. 1, 2013
80301	65	<input type="checkbox"/> Tracking the Use of Pesticides	Aug. 1, 2012	
80273	66	<input checked="" type="checkbox"/> Traffic Control Deficiency Deduction	Aug. 1, 2011	
20338	67	<input type="checkbox"/> Training Special Provisions	Oct. 15, 1975	
* 80318	68	<input type="checkbox"/> Traversable Pipe Grate	Jan. 1, 2013	
80270	69	<input type="checkbox"/> Utility Coordination and Conflicts	April 1, 2011	Jan. 1, 2012
80288	70	<input checked="" type="checkbox"/> Warm Mix Asphalt	Jan. 1, 2012	Nov. 1, 2012
80302	71	<input type="checkbox"/> Weekly DBE Trucking Reports	June 2, 2012	
80289	72	<input type="checkbox"/> Wet Reflective Thermoplastic Pavement Marking	Jan. 1, 2012	
80071	73	<input type="checkbox"/> 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:

<u>File Name</u>	<u>Special Provision Title</u>	<u>New Location</u>	<u>Effective</u>	<u>Revised</u>
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	

<u>File Name</u>	<u>Special Provision Title</u>	<u>New Location</u>	<u>Effective</u>	<u>Revised</u>
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

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.”

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

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”

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

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.”

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 ($\text{Na}_2\text{O} + 0.658\text{K}_2\text{O}$) 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 ($\text{Na}_2\text{O} + 0.658\text{K}_2\text{O}$) 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 ($\text{Na}_2\text{O} + 0.658\text{K}_2\text{O}$) 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		Water / Cement Ratio lb/lb	S I u m p in. (4)	Mix Design Compressive Strength (Flexural Strength)			Air Content %	Coarse Aggregate Gradations (14)
			cwt/cu yd (3)				psi, minimum				
			Min.	Max			Days				
							3	14	28		
PV	Pavement Base Course	420 or 421 353	5.65 (1)	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
	Base Course Widening	354									
	Driveway Pavement	423									
	Shoulders	483									
	Shoulder Curb	662									
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
	Precast Prestressed Members	504	5.65	7.05	0.32 - 0.44	1 - 4			Plans 5000 3500	5.0 - 8.0	CA 11 (11), CA 13, CA 14 (11), or CA 16
PS	Precast Prestressed Piles and Extensions	512	5.65 (TY III)	7.05 (TY III)							
	Precast Prestressed Sight Screen	639									

TABLE 1. CLASSES OF CONCRETE AND MIX DESIGN CRITERIA

Class of Conc.	Use	Specification Section Reference	Cement Factor		Water / Cement Ratio lb/lb	S l u m p in. (4)	Mix Design Compressive Strength (Flexural Strength)			Air Content %	Coarse Aggregate Gradations (14)
			cwt/cu yd (3)				psi, minimum				
			Min.	Max			Days				
							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 °F, 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		Water / Cement Ratio kg/kg	S l u m p mm (4)	Mix Design Compressive Strength (Flexural Strength) kPa, minimum			Air Content %	Coarse Aggregate Gradations (14)	
			kg/cu m (3)				Days					
			Min.	Max			3	14	28			
PV	Pavement Base Course	420 or 421			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	
	Base Course Widening	353										
	Driveway Pavement	354	335 (1)	418								
	Shoulders	423	360 (2)									
	Shoulder Curb	483										
PP	Pavement Patching	442			0.32 - 0.44	50 - 100	22,100 (4150) Article 701.17(e)(3)b.			4.0 - 7.0	CA 7, CA 11, CA 13, CA 14, or CA 16	
	Bridge Deck Patching (10)											
	PP-1		385	445			0.32 - 0.38	50 - 150	at 48 hours			4.0 - 6.0
	PP-2		365 (Ty III)	425 (Ty III)			0.32 - 0.35	50 - 100	at 24 hours			4.0 - 6.0
	PP-3		435	485			0.32 - 0.50	50 - 150	at 16 hours			4.0 - 6.0
	PP-4		435 (Ty III) (8)	435 (Ty III) (8)			0.32 - 0.40	50 - 200	at 8 hours			4.0 - 6.0
RR	Railroad Crossing	422	385	445	0.32 - 0.44	50 - 100	24,000 (4500) at 48 hours			4.0 - 7.0	CA 7, CA 11, or CA 14	
			365 (Ty III)	425 (Ty III)								
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	1042	335	418	0.32 - 0.44	25 - 100	See Section 1042			5.0 - 8.0	CA7, CA11, CA13, CA 14, CA 16, or CA 7 & CA 16	
	Wet Cast		335 (TY III)	418 (TY III)	0.25 - 0.40	0 - 25						
PS	Precast Prestressed Members	504	335 (TY III)	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			

TABLE 1. CLASSES OF CONCRETE AND MIX DESIGN CRITERIA (metric)

Class of Conc.	Use	Specification Section Reference	Cement Factor		Water / Cement Ratio kg/kg	S I u m p mm (4)	Mix Design Compressive Strength (Flexural Strength)			Air Content %	Coarse Aggregate Gradations (14)
			kg/cu m (3)				kPa, minimum				
			Min.	Max			Days				
							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 °C, 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
>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:

$$\text{Weighted Expansion Value} = (a/100 \times A) + (b/100 \times B) + (c/100 \times C) + \dots$$

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 ($\text{Na}_2\text{O} + 0.658\text{K}_2\text{O}$) 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 ($\text{Na}_2\text{O} + 0.658\text{K}_2\text{O}$) 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 ($\text{Na}_2\text{O} + 0.658\text{K}_2\text{O}$) 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 ($\text{Na}_2\text{O} + 0.658\text{K}_2\text{O}$) 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 ($\text{Na}_2\text{O} + 0.658\text{K}_2\text{O}$) 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 ($\text{Na}_2\text{O} + 0.658\text{K}_2\text{O}$) 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 ($\text{Na}_2\text{O} + 0.658\text{K}_2\text{O}$) 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 ($\text{Na}_2\text{O} + 0.658\text{K}_2\text{O}$) 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 ≤ 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 ($\text{Na}_2\text{O} + 0.658\text{K}_2\text{O}$), 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

ix
periodically (normally the first time the mixer is used each day) to see if cement is building up on the feed drum.

S
Sufficient mixing capacity of mixer shall be provided to enable continuous placing and finishing insofar as the job operations are the specifications require.

ely
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	1020.13(a)(1)(2)(3)(4)(5) ^{4/ 5/}	3	1020.13(c) ^{16/}
Curb & Gutter			
Sidewalk			
Slope Wall			
Paved Ditch			
Catch Basin			
Manhole	1020.13(a)(1)(2)(3)(4)(5) ^{4/}	3	1020.13(c)
Inlet			
Valve Vault			
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	1020.13(a)(3)(5) ^{9/ 10/}	As ^{13/}	9/
Other Structural Members		Required	
All Other Precast Items	1020.13(a)(3)(4)(5) ^{2/ 9/ 10/}	As ^{14/}	9/
		Required	
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.

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, Pycnometer Jar, or 255
	Moisture ^{4/} : Coarse Aggregate	As needed to control production for each gradation number	Dunagan, Pycnometer 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 ^{2/} and per Plant	IL Modified AASHTO Test Method
Pavement, Shoulder, Base Course, Base Course Widening, 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 conveyed, 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."

REMOVAL AND DISPOSAL OF REGULATED SUBSTANCES (BDE)

Effective: January 1, 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 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

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.”

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

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		Test Method See Manual of Test Procedures for Materials
	High ESAL Mixture Low ESAL Mixture	All Other Mixtures	
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 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)	N/A	Illinois-Modified AASHTO R 35
Air Voids Bulk Specific Gravity of Gyrotory Sample Note 5.	Day's production ≥ 1200 tons: 1 per half day of production 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)	1 per day	Illinois-Modified AASHTO T 312

Parameter	Frequency of Tests	Frequency of Tests	Test Method See Manual of Test Procedures for Materials
	High ESAL Mixture Low ESAL Mixture	All Other Mixtures	
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

ABV ABOVE
 A/C ACCESS CONTROL
 AC ACRE
 ADJ ADJUST
 AS AERIAL SURVEYS
 AGG AGGREGATE
 AH AHEAD
 APT APARTMENT
 ASPH ASPHALT
 AUX AUXILIARY
 AGS AUXILIARY GAS VALVE (SERVICE)
 AVE AVENUE
 AX AXIS OF ROTATION
 BK BACK
 B-B BACK TO BACK
 BKPL BACKPLATE
 B BARN
 BARR BARRICADE
 BGN BEGIN
 BM BENCHMARK
 BIND BINDER
 BIT BITUMINOUS
 BTM BOTTOM
 BLVD BOULEVARD
 BRK BRICK
 BBOX BUFFALO BOX
 BLDG BUILDING
 CIP CAST IRON PIPE
 CB CATCH BASIN
 C-C CENTER TO CENTER
 CL CENTERLINE OR CLEARANCE
 CL-E CENTERLINE TO EDGE
 CL-F CENTERLINE TO FACE
 CTS CENTERS
 CERT CERTIFIED
 CHSLD CHISELED
 CS CITY STREET
 CP CLAY PIPE
 CLSD CLOSED
 CLID CLOSED LID
 CT COAT OR COURT
 COMB COMBINATION
 C COMMERCIAL BUILDING
 CE COMMERCIAL ENTRANCE
 CONC CONCRETE
 CONST CONSTRUCT
 CONTD CONTINUED
 CONT CONTINUOUS
 COR CORNER
 CORR CORRUGATED
 CMP CORRUGATED METAL PIPE
 CNTY COUNTY
 CH COUNTY HIGHWAY
 CSE COURSE
 XSECT CROSS SECTION
 m³ CUBIC METER
 mm³ CUBIC MILLIMETER

CU YD CUBIC YARD
 CULV CULVERT
 C&G CURB & CUTTER
 D DEGREE OF CURVE
 DC DEPRESSED CURVE
 DET DETECTOR
 DIA DIAMETER
 DIST DISTRICT
 DOOM DOMESTIC
 OBL DOUBLE
 DSEL DOWNSTREAM ELEVATION
 DSFL DOWNSTREAM FLOWLINE
 DR DRAINAGE OR DRIVE
 DI DRAINAGE INLET OR DROP INLET
 DRV DRIVEWAY
 DCT DUCT
 EA EACH
 EB EASTBOUND
 EOP EDGE OF PAVEMENT
 E-CL EDGE TO CENTERLINE
 E-E EDGE TO EDGE
 EL ELEVATION
 ENTR ENTRANCE
 EXC EXCAVATION
 EX EXISTING
 EXPWAY EXPRESSWAY
 E EXTERNAL DISTANCE OF HORIZONTAL CURVE
 E OFFSET DISTANCE TO VERTICAL CURVE
 F-F FACE TO FACE
 FA FEDERAL AID
 FAI FEDERAL AID INTERSTATE
 FAP FEDERAL AID PRIMARY
 FAS FEDERAL AID SECONDARY
 FAUS FEDERAL AID URBAN SECONDARY
 FP FENCE POST
 FE FIELD ENTRANCE
 FH FIRE HYDRANT
 FL FLOW LINE
 FB FOOT BRIDGE
 FDN FOUNDATION
 FR FRAME
 F&G FRAME & GRATE
 FRWAY FREEWAY
 GAL GALLON
 GALV GALVANIZED
 G GARAGE
 GM GAS METER
 GV GAS VALVE
 GRAN GRANULAR
 GR GRATE
 GRVL GRAVEL
 GND GROUND
 GUT GUTTER
 CP CUY POLE
 CW CUY WIRE
 HH HANDHOLE
 HATCH HATCHING

HD HEAD
 HDW HEADWALL
 HDUTY HEAVY DUTY
 ha HECTARE
 HMA HOT MIX ASPHALT
 HWY HIGHWAY
 HORIZ HORIZONTAL
 HSE HOUSE
 IL ILLINOIS
 IMP IMPROVEMENT
 IN DIA INCH DIAMETER
 INL INLET
 INST INSTALLATION
 IDS INTERSECTION DESIGN STUDY
 INV INVERT
 IP IRON PIPE
 IR IRON ROD
 JT JOINT
 Kg KILOGRAM
 km KILOMETER
 LS LANDSCAPING
 LN LANE
 LT LEFT
 LP LIGHT POLE
 LGT LIGHTING
 LF LINEAL FEET OR LINEAR FEET
 L LITER OR CURVE LENGTH
 LC LONG CHORD
 LNG LONGITUDINAL
 L SUM LUMP SUM
 MACH MACHINE
 MB MAIL BOX
 MH MANHOLE
 MATL MATERIAL
 MED MEDIAN
 m METER
 METH METHOD
 M MID-ORDINATE
 mm MILLIMETER
 mm DIA MILLIMETER DIAMETER
 MIX MIXTURE
 MBH MOBILE HOME
 MOD MODIFIED
 MFT MOTOR FUEL TAX
 N & BC NAIL & BOTTLE CAP
 N & C NAIL & CAP
 N & W NAIL & WASHER
 NOAA NATIONAL OCEANIC ATMOSPHERIC
 ADMINISTRATION
 NC NORMAL CROWN
 NB NORTHBOUND
 NE NORTHEAST
 NW NORTHWEST
 OLD OPEN LID
 PAT PATTERN
 PVD PAVED
 PVMT PAVEMENT
 PM PAVEMENT MARKING

PED PEDESTAL
 PNT POINT
 PC POINT OF CURVATURE
 PI POINT OF INTERSECTION OF HORIZONTAL
 CURVE
 PRC POINT OF REVERSE CURVE
 PT POINT OF TANGENCY
 POT POINT ON TANGENT
 POLYETH POLYETHYLENE
 PCC PORTLAND CEMENT CONCRETE
 PP POWER POLE OR PRINCIPAL POINT
 PRM PRIME
 PE PRIVATE ENTRANCE
 PROF PROFILE
 PGL PROFILE GRADELINE
 PROJ PROJECT
 P.C. PROPERTY CORNER
 PL PROPERTY LINE
 PR PROPOSED
 R RADIUS
 RR RAILROAD
 RRS RAILROAD SPIKE
 RPS REFERENCE POINT STAKE
 REF REFLECTIVE
 RCCP REINFORCED CONCRETE CULVERT PIPE
 REINF REINFORCEMENT
 REM REMOVAL
 RC REMOVE CROWN
 REP REPLACEMENT
 REST RESTAURANT
 RESURF RESURFACING
 RET RETAINING
 RT RIGHT
 ROW RIGHT-OF-WAY
 RD ROAD
 RDWY ROADWAY
 RTE ROUTE
 SAN SANITARY
 SANS SANITARY SEWER
 SEC SECTION
 SEED SEEDING
 SHAP SHAPING
 S SHED
 SH SHEET
 SHLD SHOULDER
 SW SIDEWALK OR SOUTHWEST
 SIG SIGNAL
 SOD SODDING
 SM SOLID MEDIUM
 SB SOUTHBOUND
 SE SOUTHEAST
 SPL SPECIAL
 SD SPECIAL DITCH
 SO FT SQUARE FEET
 m² SQUARE METER
 mm² SQUARE MILLIMETER
 SO YD SQUARE YARD
 STB STABILIZED

STD STANDARD
 SBI STATE BOND ISSUE
 SR STATE ROUTE
 STA STATION
 SPBGR STEEL PLATE BEAM GUARDRAIL
 SS STORM SEWER
 STY STORY
 ST STREET
 STR STRUCTURE
 e SUPERELEVATION RATE
 S.E. RUN SUPERELEVATION RUNOFF LENGTH
 SURF SURFACE
 SMK SURVEY MARKER
 T TANGENT DISTANCE
 T.R. TANGENT RUNOUT DISTANCE
 TEL TELEPHONE
 TB TELEPHONE BOX
 TP TELEPHONE POLE
 TEMP TEMPORARY
 TBM TEMPORARY BENCH MARK
 TD TILE DRAIN
 TBE TO BE EXTENDED
 TBR TO BE REMOVED
 TBS TO BE SAVED
 TWP TOWNSHIP
 TR TOWNSHIP ROAD
 TS TRAFFIC SIGNAL
 TSCB TRAFFIC SIGNAL CONTROL BOX
 TSC TRAFFIC SYSTEMS CENTER
 TRVS TRANSVERSE
 TRVL TRAVEL
 TRN TURN
 TY TYPE
 T-A TYPE A
 TYP TYPICAL
 UNDERGND UNDERGROUND
 USGS U.S. GEOLOGICAL SURVEY
 USEL UPSTREAM ELEVATION
 USFL UPSTREAM FLOWLINE
 UTIL UTILITY
 VBOX VALVE BOX
 VV VALVE VAULT
 VLT VAULT
 VEH VEHICLE
 VP VENT PIPE
 VERT VERTICAL
 VC VERTICAL CURVE
 VPC VERTICAL POINT OF CURVATURE
 VPI VERTICAL POINT OF INTERSECTION
 VPT VERTICAL POINT OF TANGENCY
 WM WATER METER
 WV WATER VALVE
 WMAIN WATER MAIN
 WB WESTBOUND
 WILDFL WILDFLOWERS
 W WITH
 WO WITHOUT

Illinois Department of Transportation
 PASSED January 1, 2011
 Michael Brand
 ENGINEER OF POLICY AND PROCEDURES
 APPROVED January 1, 2011
 ENGINEER OF DESIGN AND ENVIRONMENT

DATE	REVISIONS
1-1-11	Updated abbreviations and symbols.
1-1-08	Updated abbreviations and symbols.

STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
 (Sheet 1 of 8)
 STANDARD 000001-06

ADJUSTMENT ITEMS		EX	PR	ALIGNMENT ITEMS		EX	PR	CONTOUR ITEMS		EX	PR
Structure To Be Adjusted			ADJ	Baseline	_____	_____		Approx. Index Line	-----		
Structure To Be Cleaned			C	Centerline	_____	_____		Approx. Intermediate Line	-----		
Main Structure To Be Filled			FM	Centerline Break Circle	○	○		Index Contour	_____		
Structure To Be Filled			F	Baseline Symbol	⊥	⊥		Intermediate Contour	_____		
Structure To Be Filled Special			FSP	Centerline Symbol	⊥	⊥		DRAINAGE ITEMS			
Structure To Be Removed			R	PI Indicator	△	△		Channel or Stream Line	-----	-----	
Structure To Be Reconstructed			REC	Point Indicator	○	○		Culvert Line	-----	-----	
Structure To Be Reconstructed Special			RSP	Horizontal Curve Data (Half Size)	CURVE P.I. STA= ΔP= D= R= T= L= E= e= T.R.= S.E. RUN= P.C. STA= P.T. STA=	CURVE P.I. STA= ΔP= D= R= T= L= E= e= T.R.= S.E. RUN= P.C. STA= P.T. STA=		Grading & Shaping Ditches	-----	-----	
Frame and Grate To Be Adjusted			A	BOUNDARIES ITEMS			EX	PR	Drainage Boundary Line	////	////
Frame and Lid To Be Adjusted			A	Dashed Property Line	-----	-----			Paved Ditch	-----	-----
Domestic Service Box To Be Adjusted			A	Solid Property/Lot Line	_____	_____			Aggregate Ditch	-----	-----
Valve Vault To Be Adjusted			A	Section/Grant Line	-----	-----			Pipe Underdrain	-----	-----
Special Adjustment			SP	Quarter Section Line	-----	-----			Storm Sewer	-----	-----
Item To Be Abandoned			AB	Quarter/Quarter Section Line	-----	-----			Flowline	⊥	⊥
Item To Be Moved			M	County/Township Line	-----	-----			Ditch Check	◆	◆
Item To Be Relocated			REL	State Line	-----	-----			Headwall	-	∩
Pavement Removal and Replacement			REL	Iron Pipe Found	○	○			Inlet	□	■
				Iron Pipe Set	●	●			Manhole	⊙	⊙
				Survey Marker	⊙	⊙			Summit	↔	↔
				Property Line Symbol	P	P			Roadway Ditch Flow	~>	~>
				Same Ownership Symbol (Half Size)	↗	↗			Swale	→	→
				Northwest Quarter Corner (Half Size)	⊙	⊙			Catch Basin	○	●
				Section Corner (Half Size)	⊙	⊙			Culvert End Section	◁	◁
				Southeast Quarter Corner (Half Size)	⊙	⊙			Water Surface Indicator	▽	▽
									Riprap	▭	▭

**STANDARD SYMBOLS,
ABBREVIATIONS
AND PATTERNS**
(Sheet 2 of 8)
STANDARD 000001-06

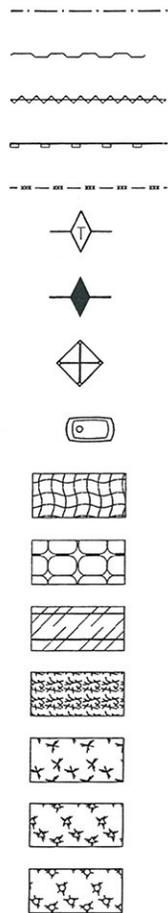
Illinois Department of Transportation
 PASSED January 1, 2011
Michael Beard
 ENGINEER OF POLICY AND PROCEDURES
 APPROVED January 1, 2011
Samuel...
 ENGINEER OF DESIGN AND ENVIRONMENT
 ISSUED 1-1-97

EROSION & SEDIMENT CONTROL ITEMS

EX

PR

- Cleaning & Grading Limits
- Dike
- Erosion Control Fence
- Perimeter Erosion Barrier
- Temporary Fence
- Ditch Check Temporary
- Ditch Check Permanent
- Inlet & Pipe Protection
- Sediment Basin
- Erosion Control Blanket
- Fabric Formed Concrete Revestment Mat
- Turf Reinforcement Mat
- Mulch Temporary
- Mulch Method 1
- Mulch Method 2 Stabilized
- Mulch Method 3 Hydraulic

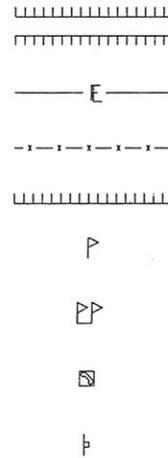


NON-HIGHWAY IMPROVEMENT ITEMS

EX

PR

- Noise Attn./Levee
- Field Line
- Fence
- Base of Levee
- Mailbox
- Multiple Mailboxes
- Pay Telephone
- Advertising Sign

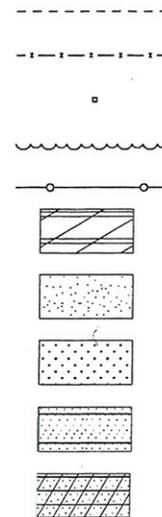


LANDSCAPING ITEMS

EX

PR

- Contour Mounding Line
- Fence
- Fence Post
- Shrubs
- Mowline
- Perennial Plants
- Seeding Class 2
- Seeding Class 2A
- Seeding Class 4
- Seeding Class 4 & 5 Combined

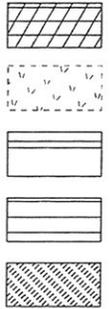


EXISTING LANDSCAPING ITEMS (contd.)

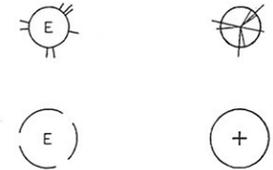
EX

PR

- Seeding Class 5
- Seeding Class 7
- Seedlings Type 1
- Seedlings Type 2
- Sodding
- Mowstake w/Sign
- Tree Trunk Protection



- Evergreen Tree
- Shade Tree

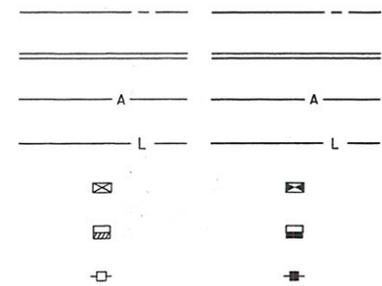


LIGHTING

EX

PR

- Duct
- Conduit
- Electrical Aerial Cable
- Electrical Buried Cable
- Controller
- Underpass Luminaire
- Power Pole



STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
(Sheet 3 of 8)

STANDARD 000001-06

Illinois Department of Transportation

PASSED January 1, 2011
Michael Beard
 ENGINEER OF POLICY AND PROCEDURES

APPROVED January 1, 2011
Scott Smith
 ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

**LIGHTING
(contd.)**

Pull Point
Handhole
Heavy Duty Handhole
Junction Box
Light Unit Comb.
Electrical Ground
Traffic Flow Arrow
High Mast Pole (Half Size)
Light Unit-1

EX



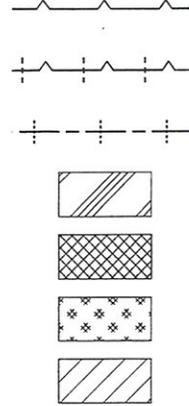
PR



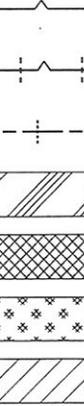
PAVEMENT (MISC.)

Keyed Long. Joint
Keyed Long. Joint w/Tie Bars
Sawed Long. Joint w/Tie Bars
Bituminous Shoulder
Bituminous Taper
Stabilized Driveway
Widening

EX



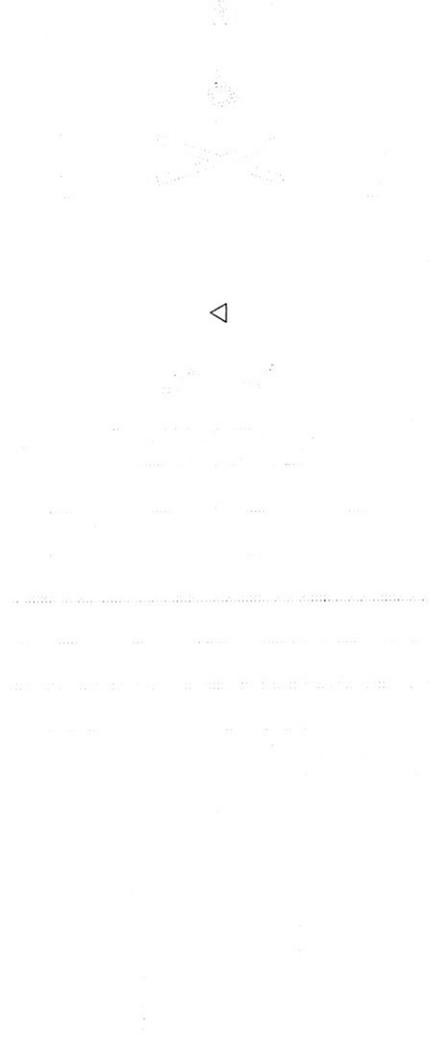
PR



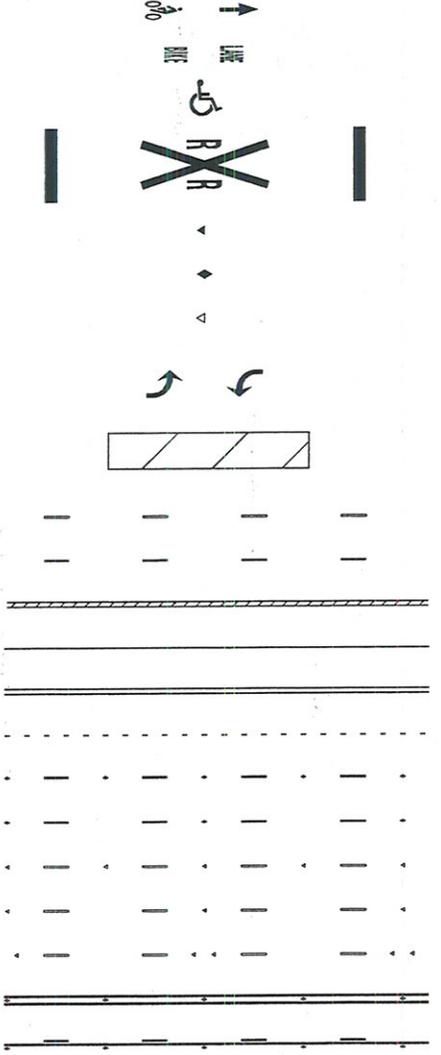
PAVEMENT MARKINGS

Bike Lane Symbol
Bike Lane Text
Handicap Symbol
RR Crossing
Raised Marker Amber 1 Way
Raised Marker Amber 2 Way
Raised Marker Crystal 1 Way
Two Way Turn Left
Shoulder Diag. Pattern
Skip-Dash White
Skip-Dash Yellow
Stop Line
Solid Line
Double Centerline
Dotted Lines
CL 2Ln 2Way
RRPM 12.2 m (40') o.c.
CL 2Ln 2Way
RRPM 80' (24.4 m) o.c.
CL Multilane Div.
RRPM 40' (12.2 m) o.c.
CL Multilane Div.
RRPM 80' (24.4 m) o.c.
CL Multilane Div. Dbl.
RRPM 80' (24.4 m) o.c.
CL Multilane Undiv.
Two Way Turn Left Line

EX



PR



Illinois Department of Transportation
 PASSED January 1, 2011
 ENGINEER OF POLICY AND PROCEDURES
 APPROVED January 1, 2011
 ENGINEER OF DESIGN AND ENVIRONMENT
 ISSUED 46-1-1

**STANDARD SYMBOLS,
ABBREVIATIONS
AND PATTERNS**
 (Sheet 4 of 8)
 STANDARD 000001-06

**PAVEMENT MARKINGS
(contd.)**

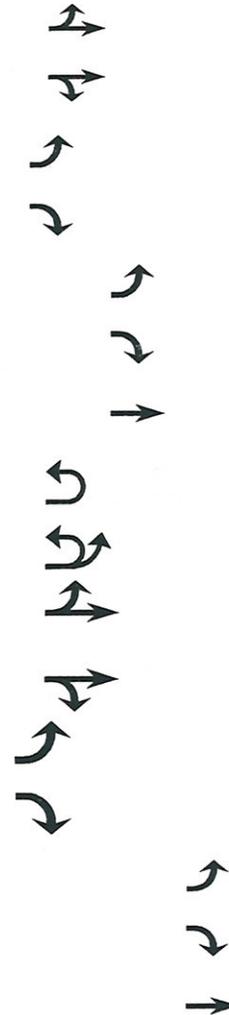
- Urban Combination Left
- Urban Combination Right
- Urban Left Turn Arrow
- Urban Right Turn Arrow
- Urban Left Turn Only
- Urban Right Turn Only
- Urban Thru Only
- Urban U-Turn
- Urban Combined U-Turn
- Rural Combination Left
- Rural Combination Right
- Rural Left Turn Arrow
- Rural Right Turn Arrow
- Rural Left Turn Only
- Rural Right Turn Only
- Rural Thru Only

EX

PR

ONLY ONLY ONLY

ONLY ONLY ONLY

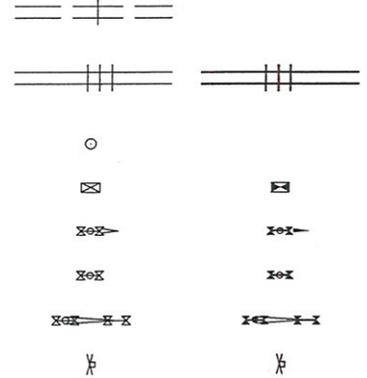


RAILROAD ITEMS

EX

PR

- Abandoned Railroad
- Railroad
- Railroad Point
- Control Box
- Crossing Gate
- Flashing Signal
- Railroad Cant. Mast Arm
- Crossbuck

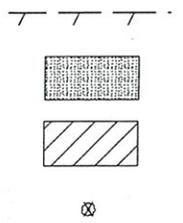


REMOVAL ITEMS

EX

PR

- Removal Tic
- Bituminous Removal
- Hatch Pattern
- Tree Removal Single

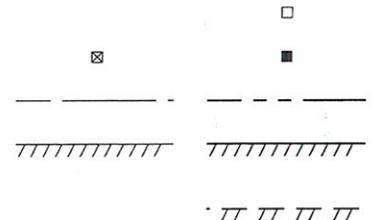


RIGHT OF WAY ITEMS

EX

PR

- Future ROW Corner Monument
- ROW Marker
- ROW Line
- Easement
- Temporary Easement



Illinois Department of Transportation

PASSED January 1, 2011
Michael Beard
 ENGINEER OF POLICY AND PROCEDURES

APPROVED January 1, 2011
Samuel...
 ENGINEER OF DESIGN AND ENVIRONMENT

16-1-1 03/05/11

**STANDARD SYMBOLS,
ABBREVIATIONS
AND PATTERNS**

(Sheet 5 of 8)

STANDARD 000001-06

RIGHT OF WAY ITEMS
(contd.)

	EX	PR
Access Control Line	— AC —————	— AC —————
Access Control Line & ROW	— AC —————	— AC —————
Access Control Line & ROW with Fence	— AR —————	— AC —————
Excess ROW Line		— XS —————

ROADWAY PLAN ITEMS

	EX	PR
Cable Barrier		
Concrete Barrier		
Edge of Pavement	-----	-----
Bit Shoulders, Medians and C&G Line	-----	-----
Aggregate Shoulder	-----	-----
Sidewalks, Driveways	-----	-----
Guardrail		
Guardrail Post	o	
Traffic Sign		
Corrugated Median		
Impact Attenuator		
North Arrow with District Office (Half Size)		
Match Line		STA. 45+00
Slope Limit Line	-----	
Typical Cross-Section Line	-----	-----

ROADWAY PROFILES

	EX	PR
P.I. Indicator	△	△
Point Indicator	o	o
Earthworks Balance Point		
Begin Point		
Vert. Curve Data	VPI = ELEV = L = E =	VPI = ELEV = L = E =
Ditch Profile Left Side	-----	-----
Ditch Profile Right Side	-----	-----
Roadway Profile Line	-----	-----
Storm Sewer Profile Left Side	-----	-----
Storm Sewer Profile Right Side	-----	-----

SIGNING ITEMS

	EX	PR
Cone, Drum or Barricade		o
Barricade Type II		
Barricade Type III		
Barricade With Edge Line		
Flashing Light Sign		o
Panels I		
Panels II		
Direction of Traffic		
Sign Flag (Half Size)		

SIGNING ITEMS
(contd.)

	EX	PR
Reverse Left W1-4L (Half Size)		
Reverse Right W1-4R (Half Size)		
Two Way Traffic Sign W6-3 (Half Size)		
Detour Ahead W20-2(0) (Half Size)		
Left Lane Closed Ahead W20-5L(0) (Half Size)		
Right Lane Closed Ahead W20-5R(0) (Half Size)		
Road Closed Ahead W20-3(0) (Half Size)		
Road Construction Ahead W20-1(0) (Half Size)		
Single Lane Ahead (Half Size)		
Transition Left W4-2L (Half Size)		
Transition Right W4-2R (Half Size)		

Illinois Department of Transportation

PASSED January 1, 2011
Michael Beard
 ENGINEER OF POLICY AND PROCEDURES

APPROVED January 1, 2011
[Signature]
 ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-11

STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
 (Sheet 6 of 8)

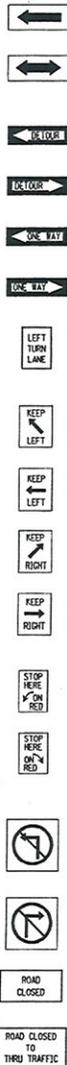
STANDARD 000001-06

SIGNING ITEMS
(contd.)

EX

PR

- One Way Arrow Lrg. W1-6-(O)
(Half Size)
- Two Way Arrow Large W1-7-(O)
(Half Size)
- Detour M4-10L-(O)
(Half Size)
- Detour M4-10R-(O)
(Half Size)
- One Way Left R6-1L
(Half Size)
- One Way Right R6-1R
(Half Size)
- Left Turn Lane R3-1100L
(Half Size)
- Keep Left R4-7AL
(Half Size)
- Keep Left R4-7BL
(Half Size)
- Keep Right R4-7AR
(Half Size)
- Keep Right R4-7BR
(Half Size)
- Stop Here On Red R10-6-AL
(Half Size)
- Stop Here On Red R10-6-AR
(Half Size)
- No Left Turn R3-2
(Half Size)
- No Right Turn R3-1
(Half Size)
- Road Closed R11-2
(Half Size)
- Road Closed Thru Traffic R11-2
(Half Size)

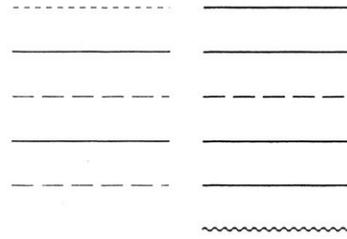


STRUCTURES ITEMS

EX

PR

- Box Culvert Barrel
- Box Culvert Headwall
- Bridge Pier
- Bridge
- Retaining Wall
- Temporary Sheet Piling

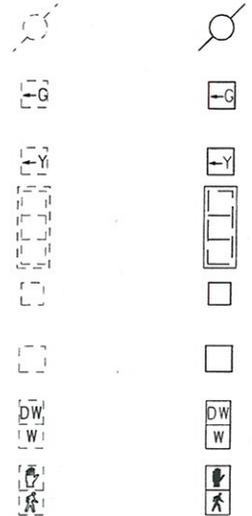


TRAFFIC SHEET ITEMS

EX

PR

- Cable Number
- Left Turn Green
- Left Turn Yellow
- Signal Backplate
- Signal Section 8" (200 mm)
- Signal Section 12" (300 mm)
- Walk/Don't Walk Letters
- Walk/Don't Walk Symbols

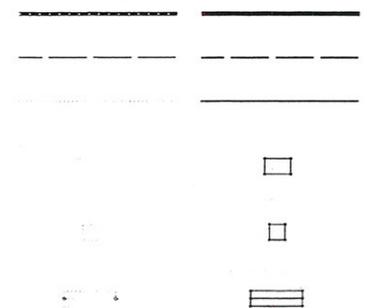


TRAFFIC SIGNAL ITEMS

EX

PR

- Galv. Steel Conduit
- Underground Cable
- Detector Loop Line
- Detector Loop Large
- Detector Loop Small
- Detector Loop Quadrupole



Illinois Department of Transportation

PASSED January 1, 2011

Michael Beard
ENGINEER OF POLICY AND PROCEDURES

APPROVED January 1, 2011

[Signature]
ENGINEER OF DESIGN AND ENVIRONMENT

16-1-1 03/15/11

**STANDARD SYMBOLS,
ABBREVIATIONS
AND PATTERNS**
(Sheet 7 of 8)

STANDARD 000001-06

<u>TRAFFIC SIGNAL ITEMS (contd.)</u>	<u>EX</u>	<u>PR</u>
Detector Raceway		
Aluminum Mast Arm		
Steel Mast Arm		
Veh. Detector Magnetic		
Conduit Splice		
Controller		
Gulfbox Junction		
Wood Pole		
Temp. Signal Head		
Handhole		
Double Handhole		
Heavy Duty Handhole		
Junction Box		
Ped. Pushbutton Detector		
Ped. Signal Head		
Power Pole Service		
Priority Veh. Detector		
Signal Head		
Signal Head w/Backplate		
Signal Post		
Closed Circuit TV		
Video Detector System		

<u>UNDERGROUND UTILITY ITEMS</u>	<u>EX</u>	<u>PR</u>	<u>ABANDONED</u>
Cable TV			
Electric Cable			
Fiber Optic			
Gas Pipe			
Oil Pipe			
Sanitary Sewer			
Telephone Cable			
Water Pipe			

<u>UTILITIES ITEMS</u>	<u>EX</u>	<u>PR</u>
Controller		
Double Handhole		
Fire Hydrant		
GuyWire or Deadman Anchor		
Handhole		
Heavy Duty Handhole		
Junction Box		
Light Pole		
Manhole		
Pipeline Warning Sign		
Power Pole		
Power Pole with Light		
Sanitary Sewer Cleanout		
Splice Box Above Ground		
Telephone Splice Box Above Ground		
Telephone Pole		

<u>UTILITY ITEMS (contd.)</u>	<u>EX</u>	<u>PR</u>
Traffic Signal		
Traffic Signal Control Box		
Water Meter		
Water Meter Valve Box		
Profile Line		
Aerial Power Line		

<u>VEGETATION ITEMS</u>	<u>EX</u>	<u>PR</u>
Deciduous Tree		
Bush or Shrub		
Evergreen Tree		
Stump		
Orchard/Nursery Line		
Vegetation Line		
Woods & Bush Line		

<u>WATER FEATURE ITEMS</u>	<u>EX</u>	<u>PR</u>
Stream or Drainage Ditch		
Waters Edge		
Water Surface Indicator		
Water Point		
Disappearing Ditch		
Marsh		
Marsh/Swamp Boundary		

**STANDARD SYMBOLS,
ABBREVIATIONS
AND PATTERNS**
(Sheet 8 of 8)

STANDARD 000001-06

Illinois Department of Transportation

PASSED January 1, 2011
Michael Bond
ENGINEER OF POLICY AND PROCEDURES

APPROVED January 1, 2011
Spencer
ENGINEER OF DESIGN AND ENVIRONMENT

18-1-1 03/15/11

REINFORCEMENT BARS - ENGLISH (METRIC)

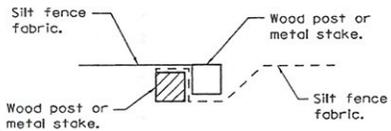
Bar Size English (metric)	Dia. in. mm	Cross- Sectional Area sq. in. (sq. mm)	Weight lbs./ft. kg/m	SPACING, in. (mm)													
				4 (100)	4½ (115)	5 (125)	5½ (140)	6 (150)	6½ (165)	7 (175)	7½ (190)	8 (200)	8½ (215)	9 (225)	10 (250)	11 (275)	12 (300)
				AREA OF STEEL PER FOOT (METER), sq. in. (sq. mm)													
3 (10)	0.375 (9.5)	0.110 (71)	0.376 (0.560)	0.330 (710)	0.293 (617)	0.264 (568)	0.240 (507)	0.220 (473)	0.203 (430)	0.189 (406)	0.176 (374)	0.165 (355)	0.155 (330)	0.147 (316)	0.132 (284)	0.120 (258)	0.110 (237)
4 (13)	0.500 (12.7)	0.196 (129)	0.668 (0.944)	0.588 (1290)	0.523 (1122)	0.470 (1032)	0.428 (921)	0.392 (860)	0.362 (782)	0.336 (737)	0.314 (679)	0.294 (645)	0.277 (600)	0.261 (573)	0.235 (516)	0.214 (469)	0.196 (430)
5 (16)	0.625 (15.9)	0.307 (199)	1.043 (1.552)	0.921 (1990)	0.819 (1730)	0.737 (1592)	0.670 (1421)	0.614 (1327)	0.567 (1206)	0.526 (1137)	0.491 (1047)	0.461 (995)	0.433 (926)	0.409 (884)	0.368 (796)	0.335 (724)	0.307 (663)
6 (19)	0.750 (19.1)	0.442 (284)	1.502 (2.235)	1.326 (2840)	1.179 (2470)	1.061 (2272)	0.964 (2029)	0.884 (1893)	0.816 (1721)	0.758 (1623)	0.707 (1495)	0.663 (1420)	0.624 (1321)	0.589 (1262)	0.530 (1136)	0.482 (1033)	0.442 (947)
7 (22)	0.875 (22.2)	0.601 (387)	2.044 (3.042)	1.803 (3870)	1.603 (3365)	1.442 (3096)	1.311 (2764)	1.202 (2580)	1.110 (2345)	1.030 (2211)	0.962 (2037)	0.902 (1935)	0.848 (1800)	0.801 (1720)	0.721 (1548)	0.656 (1407)	0.601 (1290)
8 (25)	1.000 (25.4)	0.785 (510)	2.670 (3.973)	2.355 (5100)	2.093 (4435)	1.884 (4080)	1.713 (3543)	1.570 (3400)	1.449 (3091)	1.346 (2914)	1.256 (2684)	1.178 (2550)	1.108 (2372)	1.047 (2267)	0.942 (2040)	0.856 (1855)	0.785 (1700)
9 (29)	1.128 (28.7)	1.000 (645)	3.400 (5.060)	3.000 (6450)	2.667 (5609)	2.400 (5160)	2.182 (4607)	2.000 (4300)	1.846 (3909)	1.714 (3686)	1.600 (3395)	1.500 (3225)	1.412 (3000)	1.333 (2867)	1.200 (2580)	1.091 (2345)	1.000 (2150)
10 (32)	1.270 (32.3)	1.267 (819)	4.303 (6.404)	3.801 (8190)	3.379 (7122)	3.041 (6552)	2.764 (5850)	2.534 (5460)	2.339 (4964)	2.172 (4680)	2.027 (4311)	1.901 (4095)	1.789 (3809)	1.689 (3640)	1.520 (3276)	1.382 (2978)	1.267 (2730)
11 (36)	1.410 (35.8)	1.561 (1006)	5.313 (7.907)	4.683 (10060)	4.163 (8748)	3.746 (8048)	3.406 (7186)	3.122 (6707)	2.882 (6097)	2.676 (5749)	2.498 (5295)	2.342 (5030)	2.204 (4679)	2.081 (4471)	1.873 (4024)	1.703 (3658)	1.561 (3353)

 Illinois Department of Transportation	
PASSED <u>January 1, 2009</u> <i>Santosh</i> ENGINEER OF POLICY AND PROCEDURES	ISSUED 16-1-1
APPROVED <u>January 1, 2009</u> <i>Gen. S. Han</i> ENGINEER OF DESIGN AND ENVIRONMENT	

DATE	REVISIONS
1-1-09	Switched units to English (metric).
1-1-07	Deleted metric table, Soft converted English table.

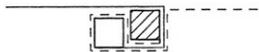
AREAS OF REINFORCEMENT BARS

STANDARD 001001-02



Place end-post (stake) of first silt fence adjacent to end-post (stake) of second silt fence with fabric positioned as shown.

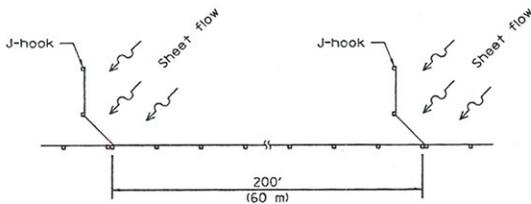
STEP 1



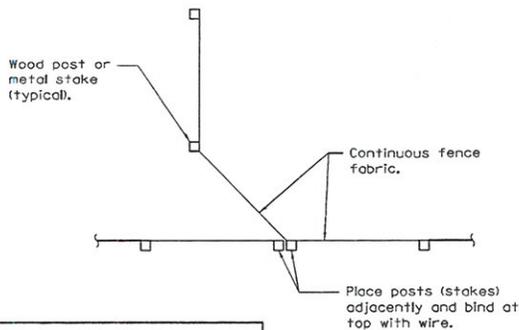
Rotate posts (stakes) together 180° clockwise and drive both posts (stakes) 18 (450) into ground.

STEP 2

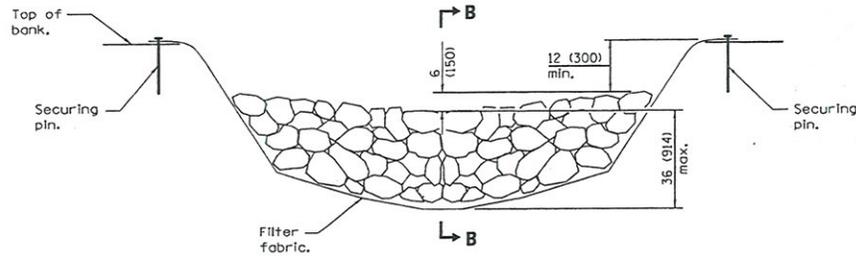
ATTACHING TWO SILT FILTER FENCES
(Not applicable for J-hooks)



SILT FILTER J-HOOK PLACEMENT

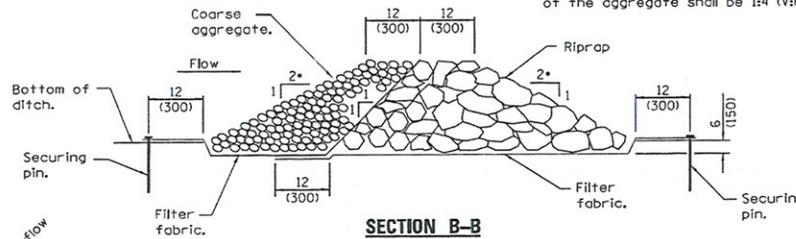


J-HOOK



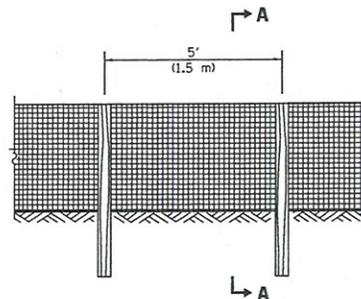
ELEVATION

• When the ditch check is within the clear zone and the road is open to traffic, the traffic approach slope of the aggregate shall be 1:4 (V:H).



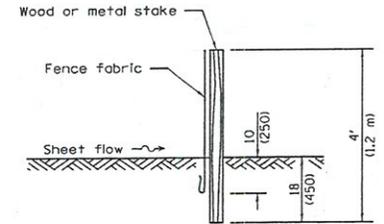
SECTION B-B

AGGREGATE DITCH CHECK

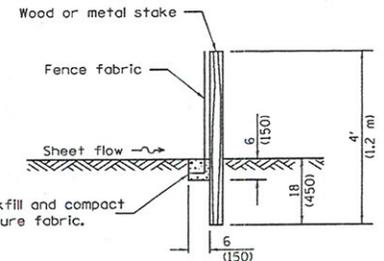


ELEVATION

SILT FILTER FENCE AS A PERIMETER EROSION BARRIER



SLICE METHOD



TRENCH METHOD

SECTION A-A

Excavate, backfill and compact trench to secure fabric.

GENERAL NOTES

The installation details and dimensions shown for perimeter erosion barriers shall also apply for inlet and pipe protection.

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

DATE	REVISIONS
1-1-13	Corrected notation for flowline (E) on SEDIMENT BASIN ELEVATION.
1-1-12	Omitted hay/straw perimeter barrier. Added SLICE METHOD to SECTION A-A.

TEMPORARY EROSION CONTROL SYSTEMS
(Sheet 1 of 2)

STANDARD 280001-07

Illinois Department of Transportation

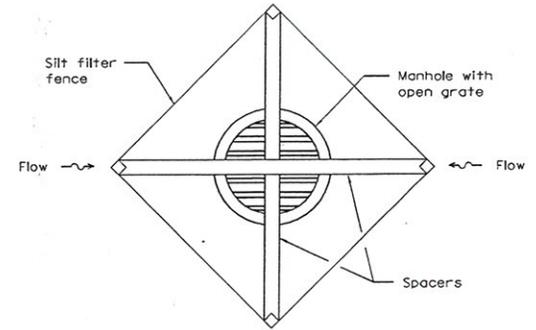
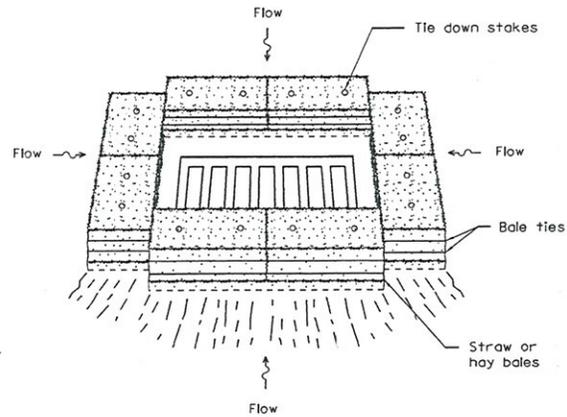
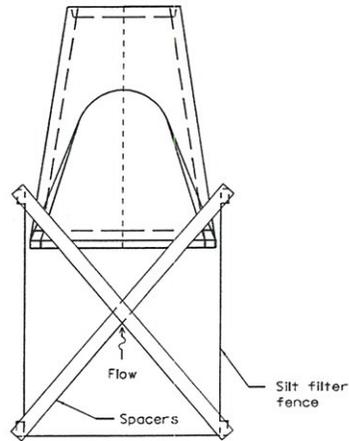
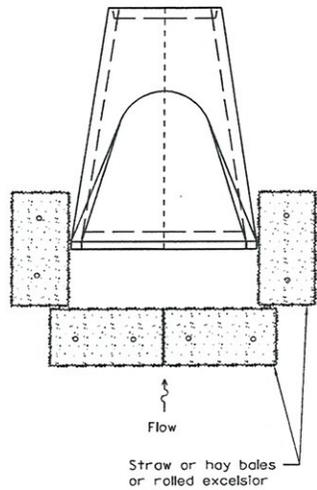
PASSED January 1, 2013

ENGINEER OF POLICY AND PROCEDURES

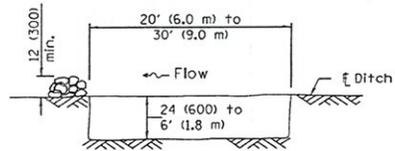
APPROVED January 1, 2013

ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 46-1-1

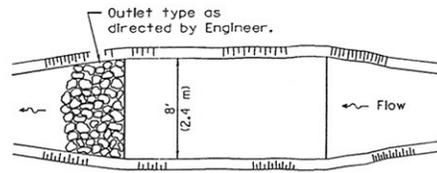


INLET AND PIPE PROTECTION



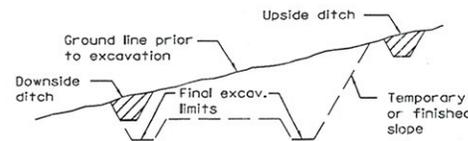
The performance of the basin will improve if put into a series.

ELEVATION

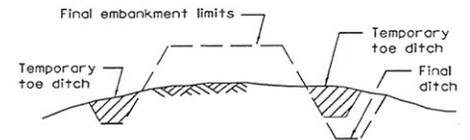


The long dimension should be parallel with the direction of the flow. Accumulated silt shall be removed anytime the basins become 75% filled.

PLAN



TYPICAL CUT CROSS-SECTION



TYPICAL FILL CROSS-SECTION

TEMPORARY DITCHES FOR CUT & FILL SECTIONS

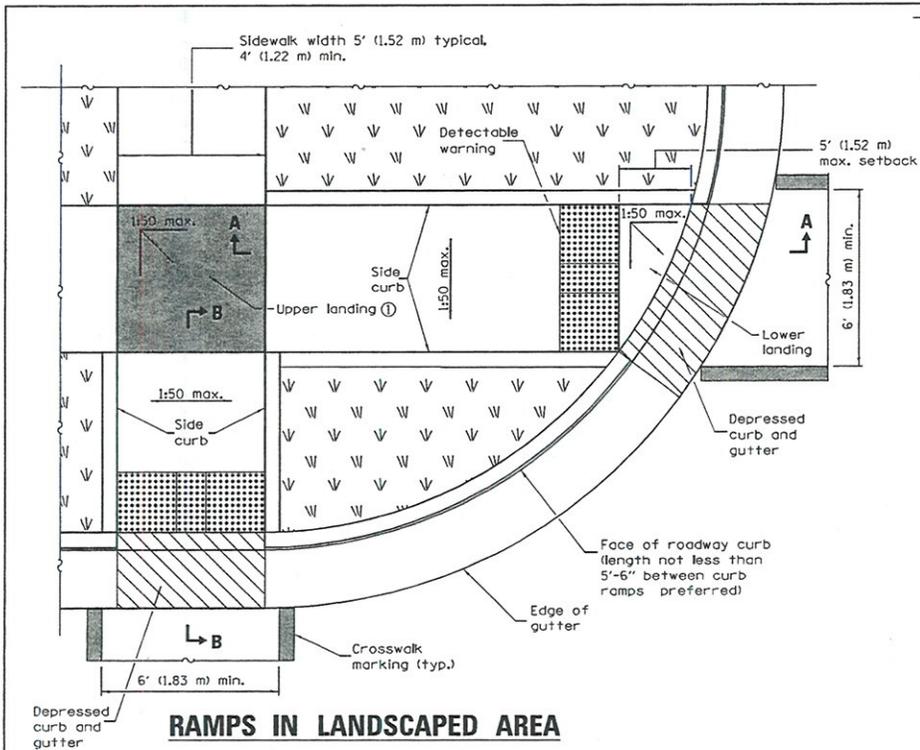
SEDIMENT BASIN

Illinois Department of Transportation	
PASSED	January 1, 2013
Michael Beard ENGINEER OF POLICY AND PROCEDURES	
APPROVED	January 1, 2013
ENGINEER OF DESIGN AND ENVIRONMENT	
16-1-1	03/SSS

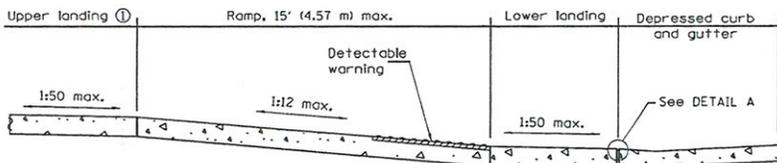
TEMPORARY EROSION CONTROL SYSTEMS

(Sheet 2 of 2)

STANDARD 280001-07

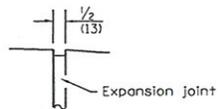


RAMPS IN LANDSCAPED AREA
SETBACK ≤ 5'

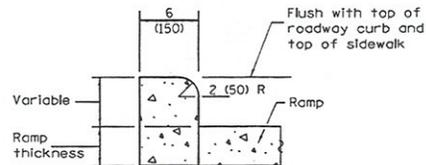


SECTION A-A

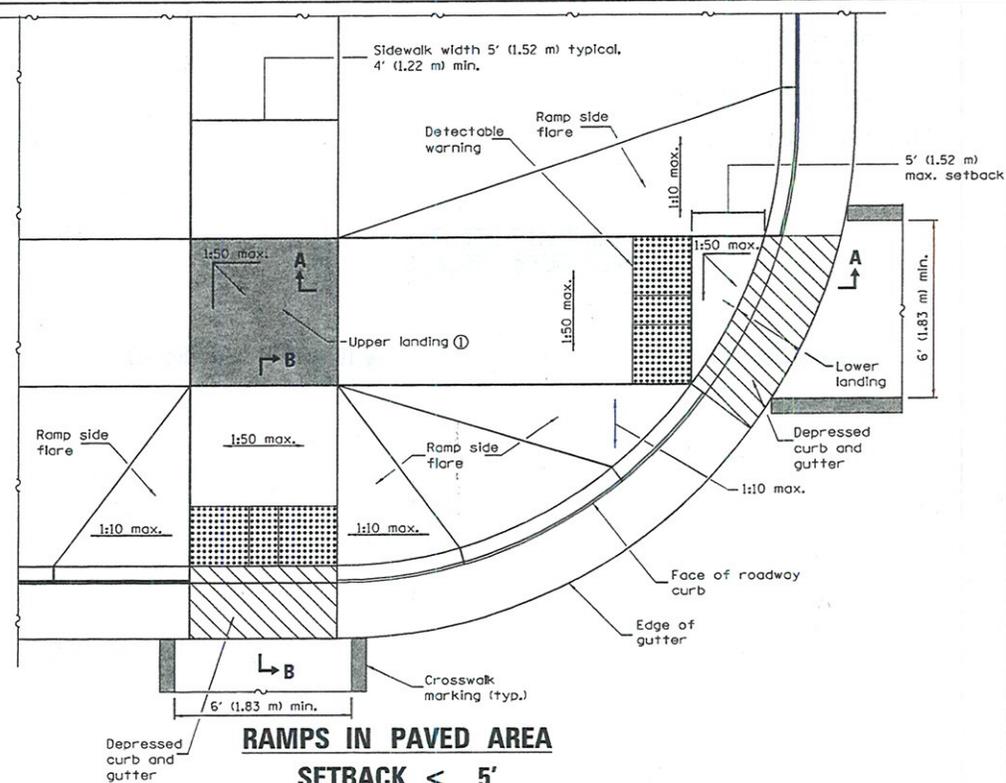
① Upper landing not required for ramp slopes flatter than 1:20.



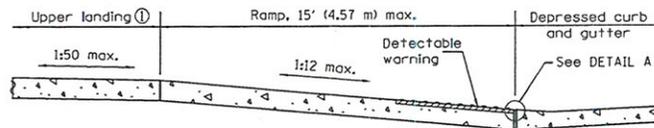
DETAIL A



SIDE CURB DETAIL



RAMPS IN PAVED AREA
SETBACK ≤ 5'



SECTION B-B

① Upper landing not required for ramp slopes flatter than 1:20.

GENERAL NOTES

All slope ratios are expressed as units of vertical displacement to units of horizontal displacement (V:H).

Where 1:50 maximum slope is shown, 1:64 is preferred.

See Standard 606001 for details of depressed curb adjacent to curb ramp.

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

DATE	REVISIONS
1-1-13	Widened crosswalk markings to 6' (1.83 m) min. inside dimension. Rev. Gen. Notes.
1-1-12	Completely revised and renamed standard.

PERPENDICULAR CURB RAMPS FOR SIDEWALKS
(Sheet 1 of 2)

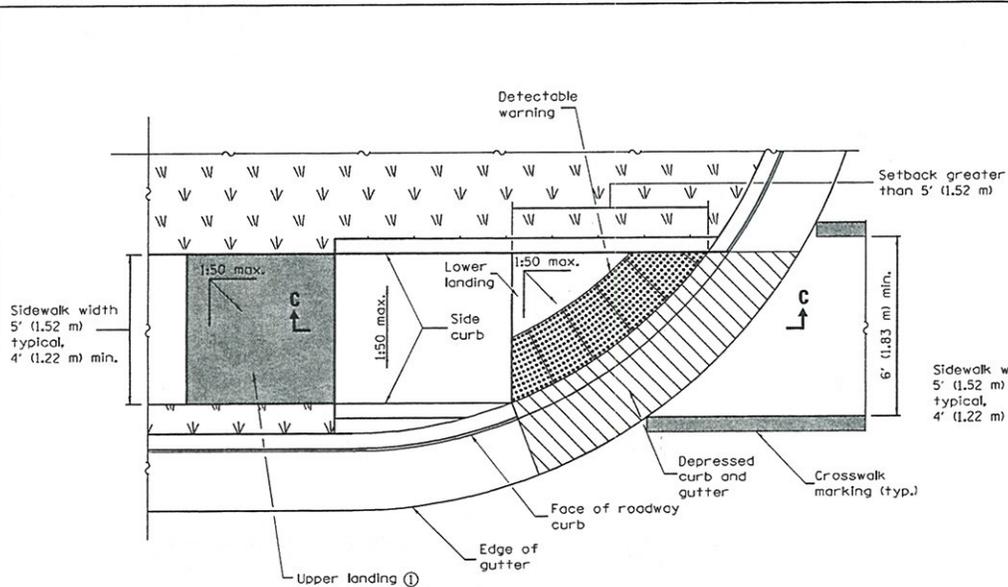
STANDARD 424001-07

Illinois Department of Transportation

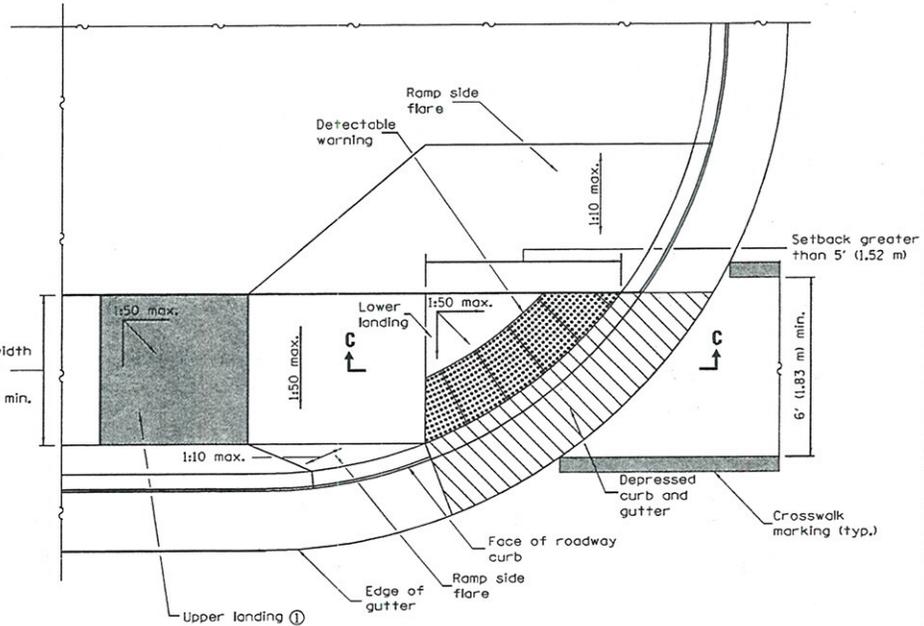
PASSED January 1, 2013
Michael Beard
ENGINEER OF POLICY AND PROCEDURES

APPROVED January 1, 2013
[Signature]
ENGINEER OF DESIGN AND ENVIRONMENT

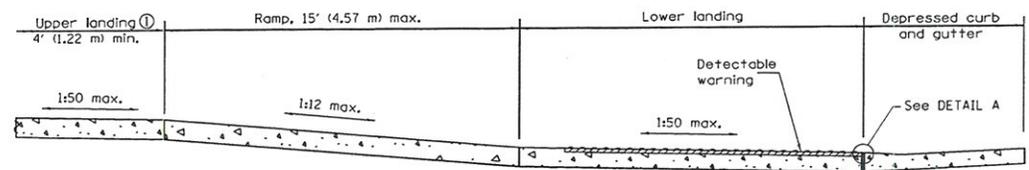
ISSUED 1-1-97



**RAMP IN LANDSCAPED AREA
SETBACK > 5'**



**RAMP IN PAVED AREA
SETBACK > 5'**



SECTION C-C

① Upper landing not required for ramp slopes flatter than 1:20.

Illinois Department of Transportation

PASSED January 1, 2013
Michael Beard
 ENGINEER OF POLICY AND PROCEDURES

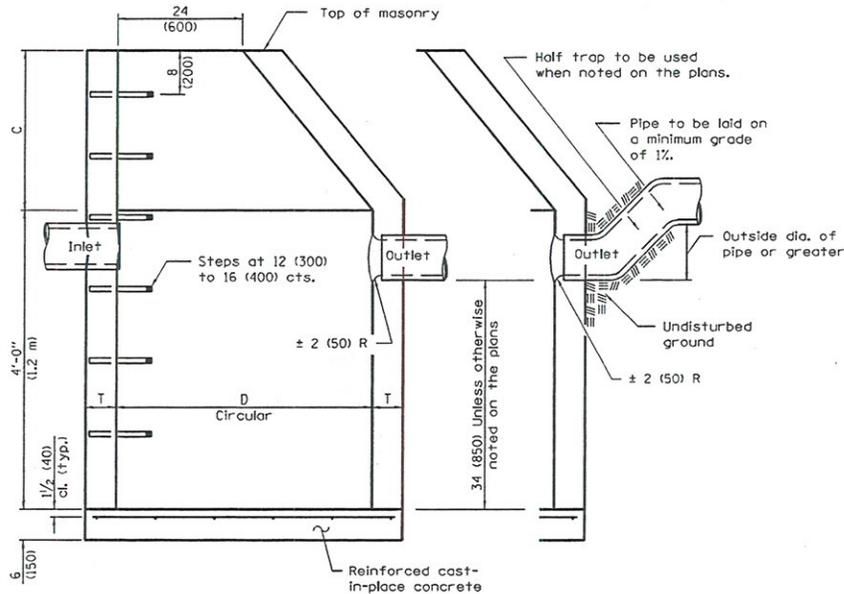
APPROVED January 1, 2013
[Signature]
 ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-91

**PERPENDICULAR CURB RAMPS
FOR SIDEWALKS**

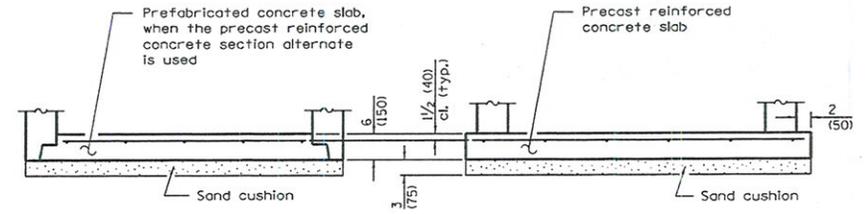
(Sheet 2 of 2)

STANDARD 424001-07



ELEVATION
(Standard Outlet)

ELEVATION
(Half Trap)



ALTERNATE BOTTOM SLAB

ALTERNATE MATERIALS FOR WALLS	D	C*	T (min.)
Concrete Masonry Unit	4'-0" (1.2 m)	30 (750)	5 (125)
	5'-0" (1.5 m)	3'-9" (1.15 m)	5 (125)
Brick Masonry	4'-0" (1.2 m)	30 (750)	8 (200)
	5'-0" (1.5 m)	3'-9" (1.15 m)	8 (200)
Precast Reinforced Concrete Section	4'-0" (1.2 m)	30 (750)	4 (100)
	5'-0" (1.5 m)	3'-9" (1.15 m)	5 (125)
Cast-In-place Concrete	4'-0" (1.2 m)	30 (750)	6 (150)
	5'-0" (1.5 m)	3'-9" (1.15 m)	6 (150)

* For precast reinforced concrete sections, dimension "C" may vary from the dimension given to plus 6 (150).

GENERAL NOTES

Bottom slabs shall be reinforced with a minimum of 0.20 sq. in./ft (420 sq. mm/m) in both directions with a maximum spacing of 12 (300).

Bottom slabs may be connected to the riser as determined by the fabricator; however, only a single row of reinforcement around the perimeter may be utilized.

See Standard 602601 for optional precast reinforced concrete flat slab top.

See Standard 602701 for details of steps.

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

DATE	REVISIONS
1-1-11	Added 'Outside' to half trap note. Detail rein. in slabs. Revised general notes.
1-1-09	Switched units to English (metric).

**CATCH BASIN
TYPE A**

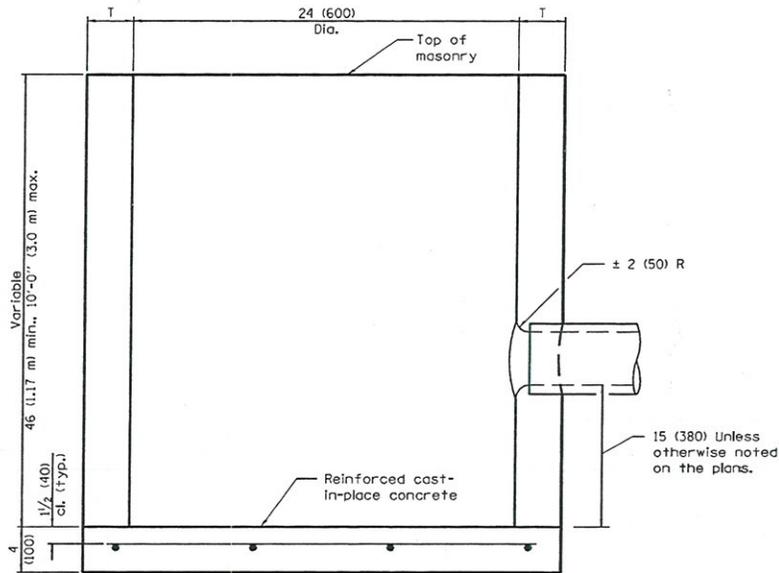
STANDARD 602001-02

Illinois Department of Transportation

PASSED January 1, 2011
Michael Beard
 ENGINEER OF POLICY AND PROCEDURES

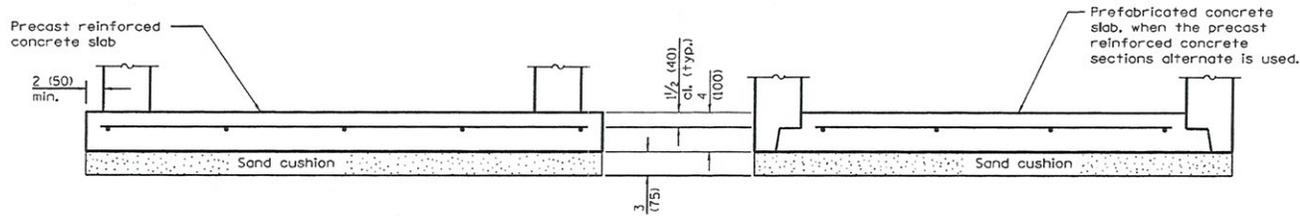
APPROVED January 1, 2011
S. J. Smith
 ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-91



ELEVATION

ALTERNATE MATERIALS FOR WALLS	T (min)
Precast Reinforced Concrete Section	3 (75)
Concrete Masonry Unit	5 (125)
Cast-in-Place Concrete	6 (150)
Brick Masonry	8 (200)



ALTERNATE BOTTOM SLAB

GENERAL NOTES

Bottom slabs shall be reinforced with a minimum of 0.27 sq. in./ft. (570 sq. mm/m) in both directions with a maximum spacing of 9 (230).

Bottom slabs may be connected to the riser as determined by the fabricator; however, only a single row of reinforcement around the perimeter may be utilized.

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

Illinois Department of Transportation

PASSED January 1, 2011
Michael Brand
 ENGINEER OF POLICY AND PROCEDURES

APPROVED January 1, 2011
Scott Smith
 ENGINEER OF DESIGN AND ENVIRONMENT

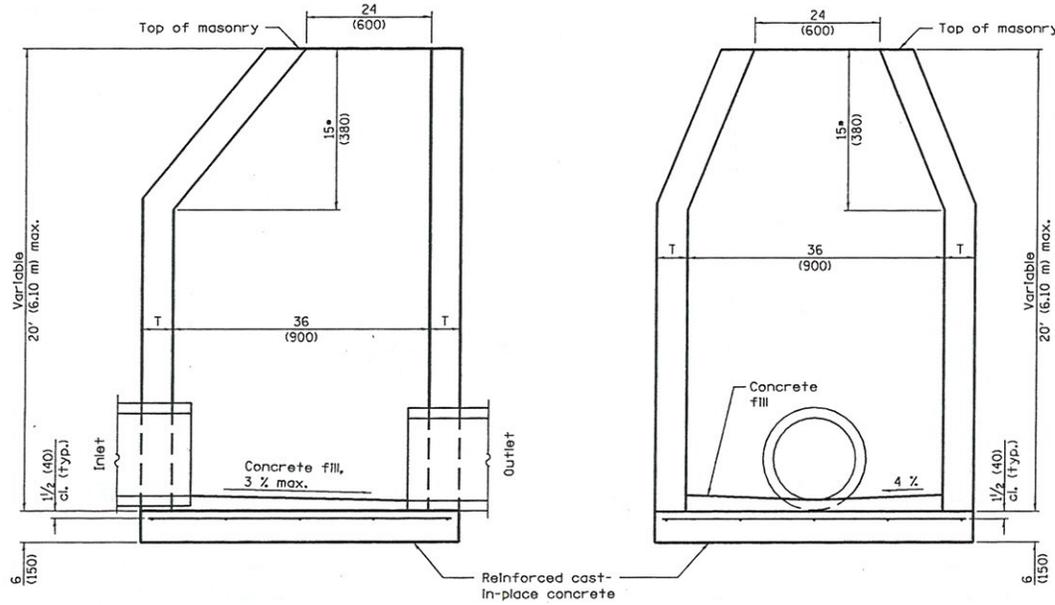
ISSUED 1-1-97

DATE	REVISIONS
1-1-11	Detailed rein. in slabs.
	Added max. limit to height.
	Added general notes.
1-1-09	Switched units to
	English (metric).

CATCH BASIN TYPE C

STANDARD 602011-02

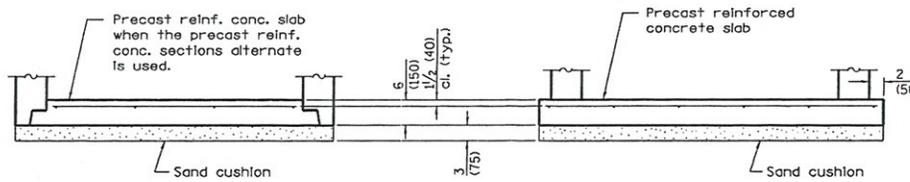
* For precast reinforced concrete sections, this dimension may vary from the dimension given to plus 6 (150).



ELEVATION - ECCENTRIC

ELEVATION - CONCENTRIC

ALTERNATE MATERIALS FOR WALLS	T (min.)
Concrete Masonry Unit	5 (125)
Brick Masonry	8 (200)
Precast Reinforced Concrete Section	3 (75)
Cast-In-Place Concrete	6 (150)



ALTERNATE BOTTOM SLAB

GENERAL NOTES

Bottom slabs shall be reinforced with a minimum of 0.20 sq. in./ft. (420 sq. mm/m) in both directions with a maximum spacing of 12 (300).

Bottom slabs may be connected to the riser as determined by the fabricator; however, only a single row of reinforcement around the perimeter may be utilized.

See Standard 602601 for optional Precast Reinforced Concrete Flat Slab Top.

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

DATE	REVISIONS
1-1-11	Detailed reinf. in slabs.
	Added max. limit to height.
	Revised general notes.
1-1-09	Switched units to English (metric).

INLET - TYPE B

STANDARD 602306-03

Illinois Department of Transportation

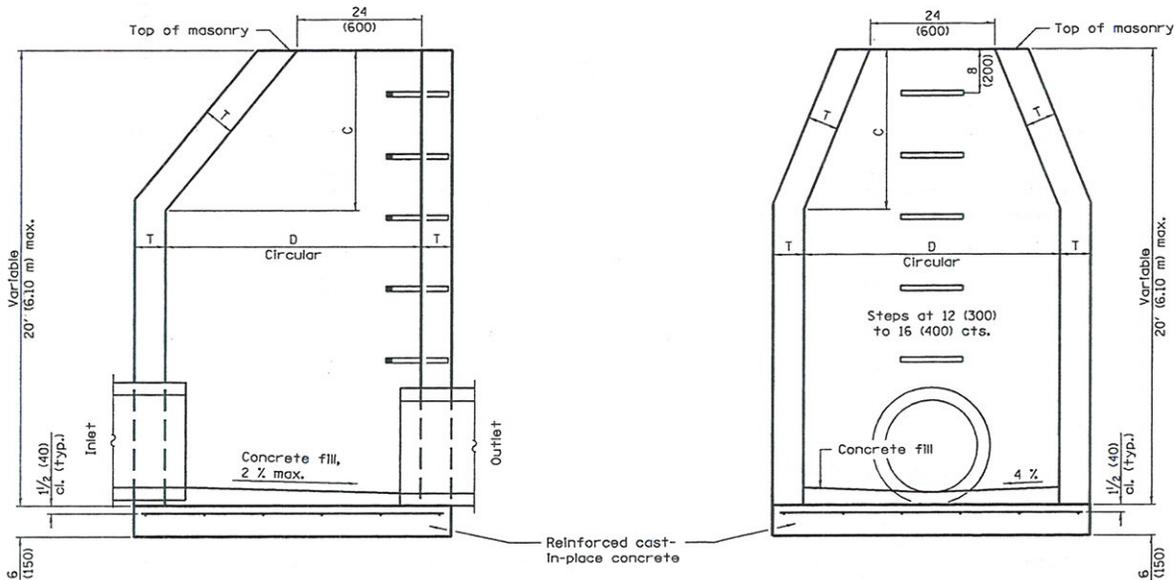
PASSED January 1, 2011

Michael Beard
ENGINEER OF POLICY AND PROCEDURES

APPROVED January 1, 2011

ENGINEER OF DESIGN AND ENVIRONMENT

16-1-1 03RS5

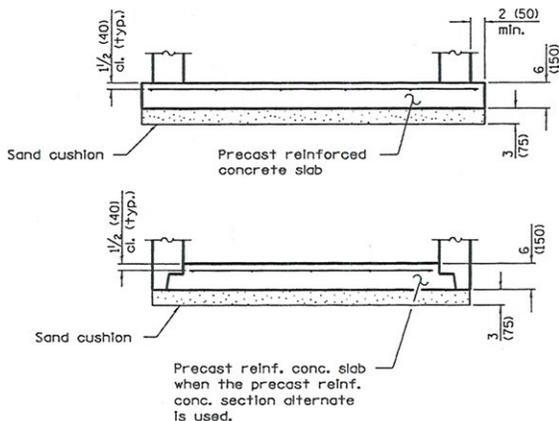


ELEVATION - ECCENTRIC

ELEVATION - CONCENTRIC

ALTERNATE MATERIALS FOR WALLS	D	C*	T (min.)
Concrete Masonry Unit	4'-0" (1.2 m) 5'-0" (1.5 m)	30 (750) 3'-9" (1.15 m)	5 (125) 5 (125)
Brick Masonry	4'-0" (1.2 m) 5'-0" (1.5 m)	30 (750) 3'-9" (1.15 m)	8 (200) 8 (200)
Precast Reinforced Concrete Section	4'-0" (1.2 m) 5'-0" (1.5 m)	30 (750) 3'-9" (1.15 m)	4 (100) 5 (125)
Cast-in-place Concrete	4'-0" (1.2 m) 5'-0" (1.5 m)	30 (750) 3'-9" (1.15 m)	6 (150) 6 (150)

* For precast reinforced concrete sections, dimension "C" may vary from the dimension given to plus 6 (150).



ALTERNATE BOTTOM SLAB

GENERAL NOTES

Bottom slabs shall be reinforced with a minimum of 0.31 sq. in./ft. (650 sq. mm/m) in both directions with a maximum spacing of 12 (300).

Bottom slabs may be connected to the riser as determined by the fabricator; however, only a single row of reinforcement around the perimeter may be utilized.

See Standard 602701 for details of steps.

See Standard 602601 for optional Precast Reinforced Concrete Flat Slab Top.

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

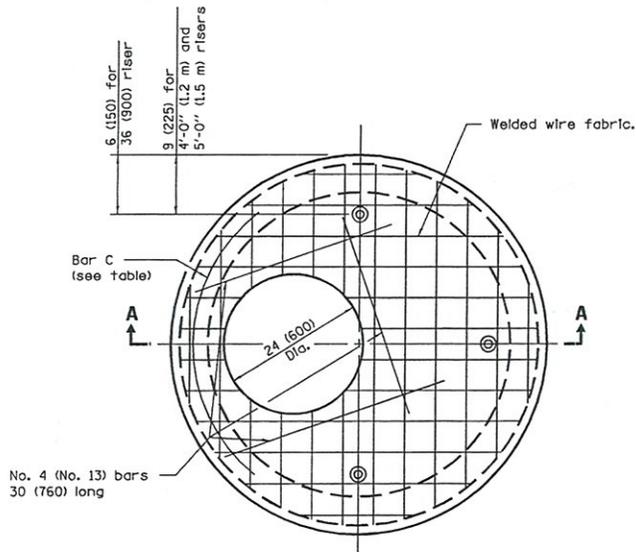
DATE	REVISIONS	MANHOLE TYPE A
1-1-11	Detailed reinf. in slabs. Added max. limit to height. Revised general notes.	
1-1-09	Switched units to English (metric).	
		STANDARD 602401-03

Illinois Department of Transportation

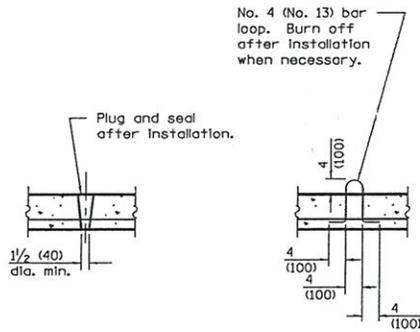
PASSED January 1, 2011
Michael Beard
 ENGINEER OF POLICY AND PROCEDURES

APPROVED January 1, 2011
Scott K...
 ENGINEER OF DESIGN AND ENVIRONMENT

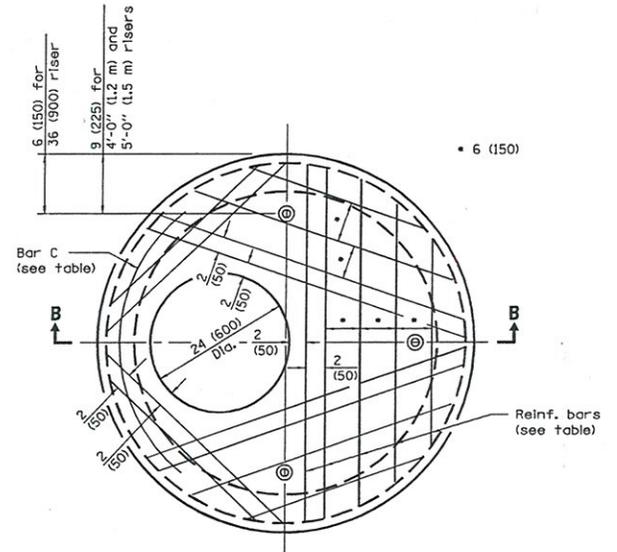
ISSUED 1-1-97



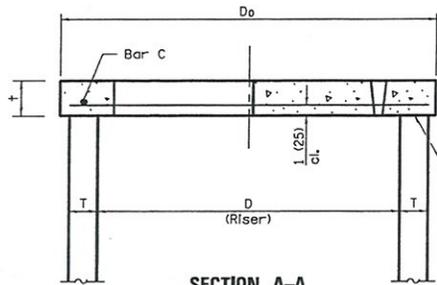
PLAN
(WELDED WIRE FABRIC)



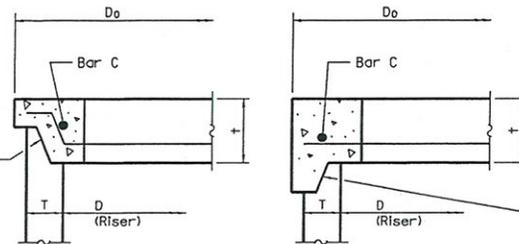
LIFTING HOLE OR LIFTING LOOP
TYPICAL
(3 required per slab)



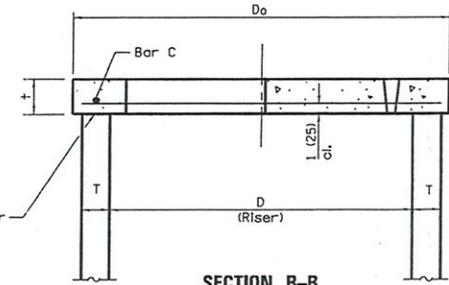
PLAN
(REINFORCEMENT BARS)



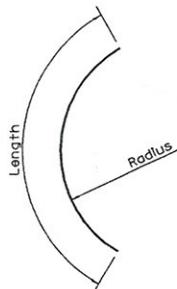
SECTION A-A



ALTERNATE JOINT CONFIGURATIONS



SECTION B-B



BAR C

TABLE

D	T	Do (min.)	+	Reinforcement		No. 4 (No. 13) Bar C	
				"As" W.W.F. each direction	OR Bar size	Length	Radius
36 (900)	See applicable Standards	D + 2T	6 (150)	0.20 sq. in./ft. (425 sq. mm/m)	No. 4 (No. 13)	4'-0" (1.2 m)	19 (480)
4'-0" (1.2 m)				0.35 sq. in./ft. (740 sq. mm/m)	No. 5 (No. 16)	4'-6" (1.35 m)	26 (660)
5'-0" (1.5 m)				0.35 sq. in./ft. (740 sq. mm/m)	No. 5 (No. 16)	5'-0" (1.5 m)	32 (810)

GENERAL NOTES

The flat slab top may be used in lieu of the tapered tops shown on Standards 602001, 602011, 602016, 602306, 602401, or 602501 at the option of the Contractor or when field conditions prohibit the use of tapered tops.

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

DATE	REVISIONS
1-1-09	Switched units to English (metric).
1-1-07	Soft converted metric reinforcement bars.

PRECAST REINFORCED CONCRETE FLAT SLAB TOP

STANDARD 602601-02

Illinois Department of Transportation

PASSED January 1, 2009

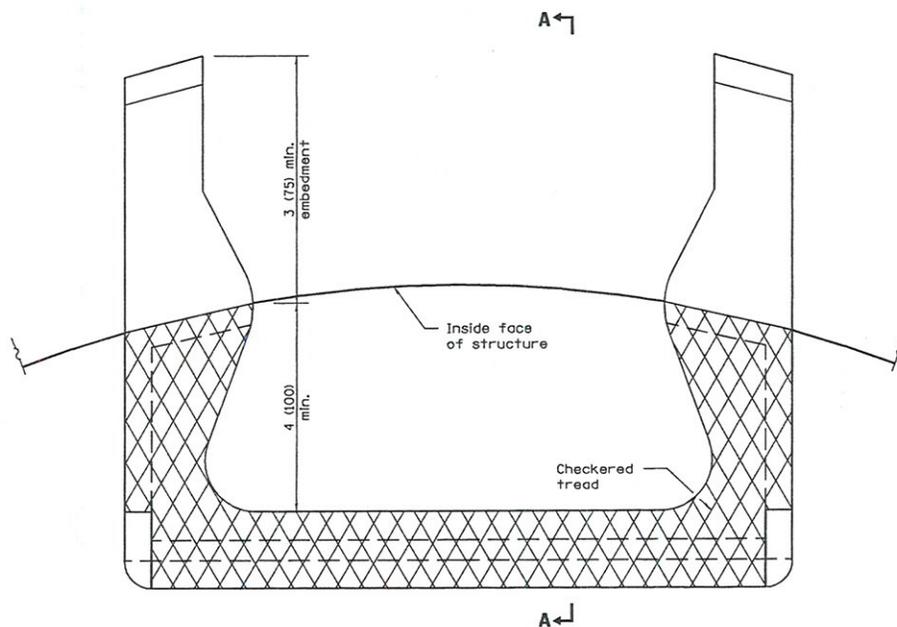
ENGINEER OF POLICY AND PROCEDURES

APPROVED January 1, 2009

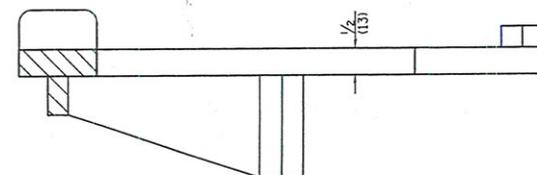
ENGINEER OF DESIGN AND ENVIRONMENT

16-1-1 03/05/11

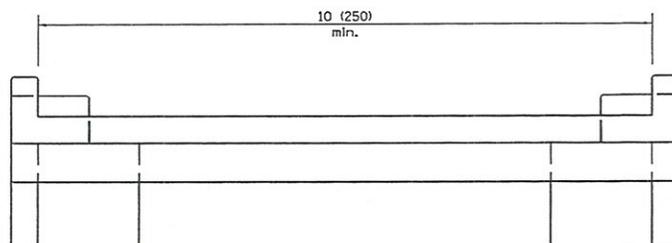
CAST IRON STEPS



PLAN VIEW



SECTION A-A



ELEVATION VIEW

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

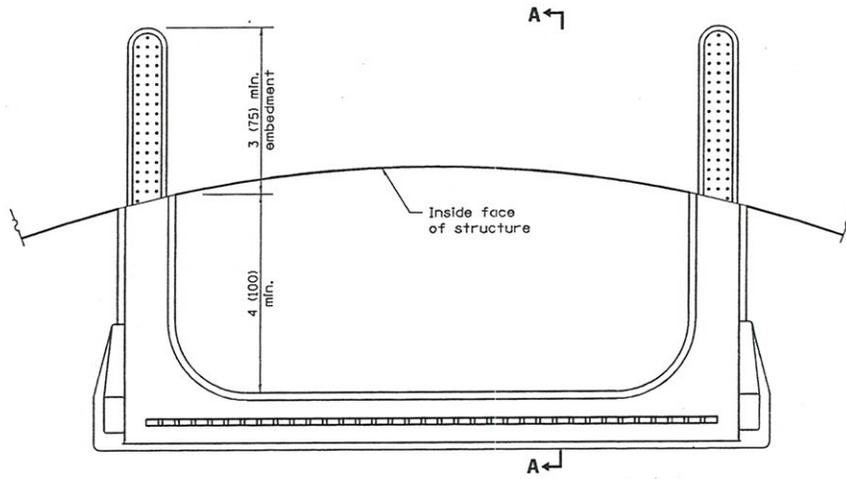
DATE	REVISIONS	MANHOLE STEPS (Sheet 1 of 2)
1-1-09	Switched units to English (metric).	
4-1-06	Revised title, drawings, and added plastic steps on sheet 2.	STANDARD 602701-02

Illinois Department of Transportation

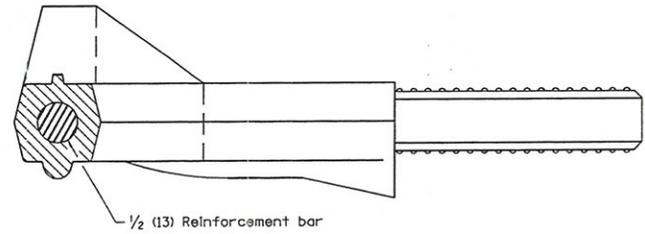
PASSED January 1, 2009
 ENGINEER OF POLICY AND PROCEDURES

APPROVED January 1, 2009
 ENGINEER OF DESIGN AND ENVIRONMENT

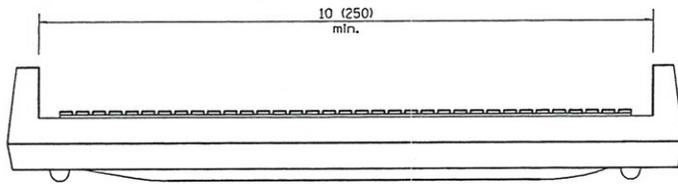
ISSUED 1-1-97



PLAN VIEW



SECTION A-A



ELEVATION VIEW

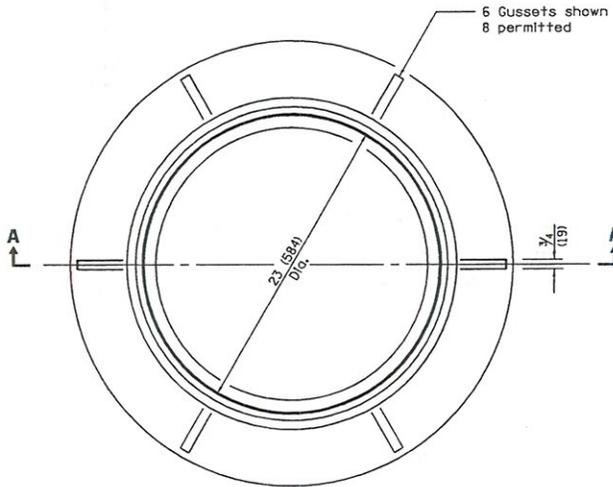
Illinois Department of Transportation
PASSED January 1, 2009
ENGINEER OF POLICY AND PROCEDURES
APPROVED January 1, 2009
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

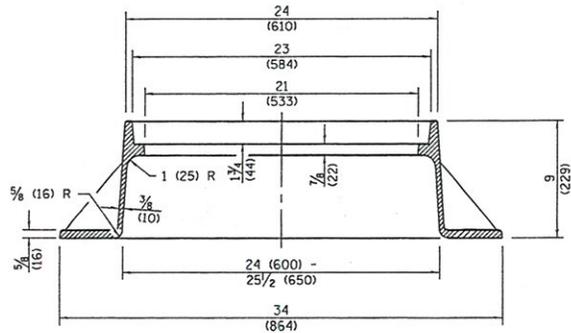
MANHOLE STEPS

(Sheet 2 of 2)

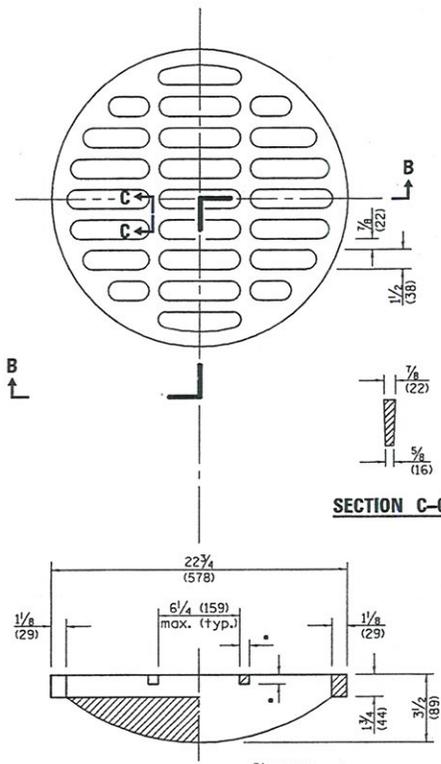
STANDARD 602701-02



CAST FRAME



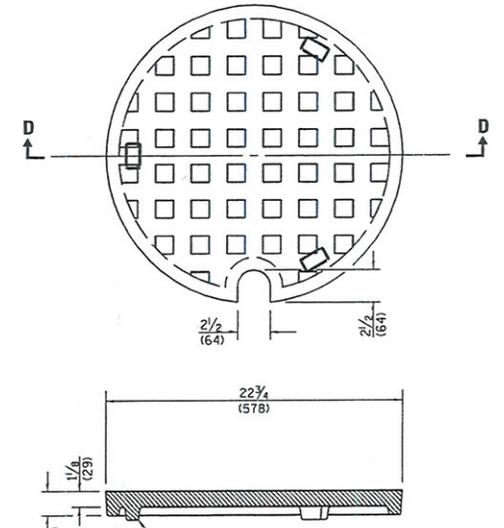
SECTION A-A
Gray Iron



SECTION B-B

CAST OPEN LID

SECTION C-C



SECTION D-D

CAST CLOSED LID
Gray Iron Lid

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

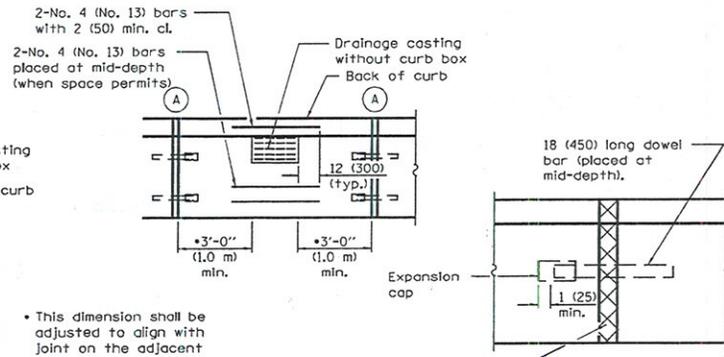
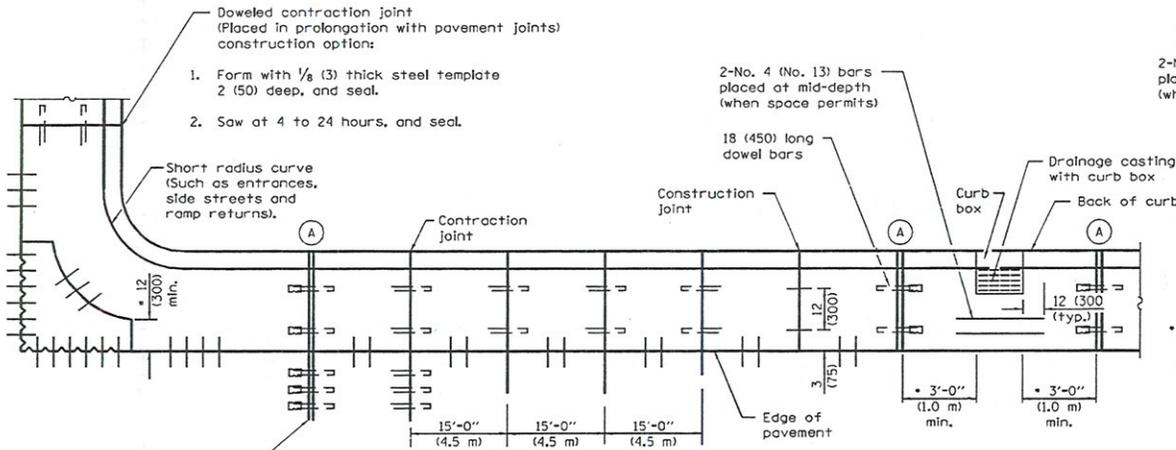
DATE	REVISIONS	<p align="center">FRAME AND LIDS TYPE 1</p> <p align="center">STANDARD 604001-03</p>
1-1-09	Switched units to English (metric).	
1-1-04	Removed weights.	

Illinois Department of Transportation

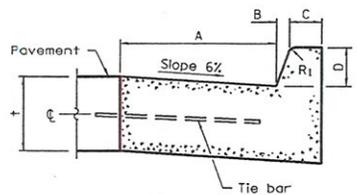
PASSED January 1, 2009
S. Smith
 ENGINEER OF POLICY AND PROCEDURES

APPROVED January 1, 2009
Eric C. Ho
 ENGINEER OF DESIGN AND ENVIRONMENT

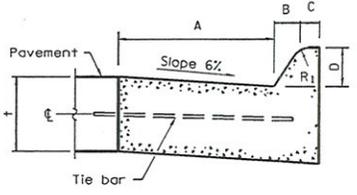
16-1-1 02/05/01



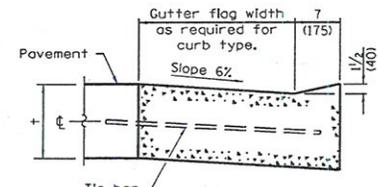
PLAN
ADJACENT TO PCC PAVEMENT OR PCC BASE COURSE



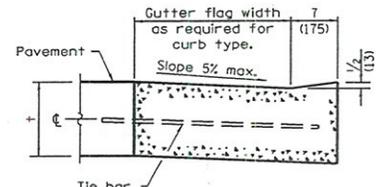
BARRIER CURB



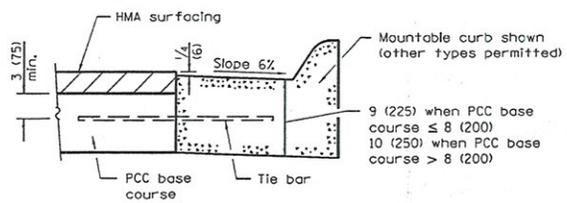
MOUNTABLE CURB



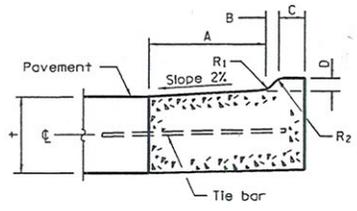
DEPRESSED CURB (TYPICAL)



DEPRESSED CURB ADJACENT TO CURB RAMP ACCESSIBLE TO THE DISABLED



ADJACENT TO PCC BASE COURSE WITH HMA SURFACING



M-2.06 (M-5.15) and M-2.12 (M-5.30)

TYPE	A	B	C	D	R ₁
B-6.12	12	1	6	6	1
(B-15.3)	(300)	(25)	(150)	(150)	(25)
B-6.18	18	1	6	6	1
(B-15.45)	(450)	(25)	(150)	(150)	(25)
B-6.24	24	1	6	6	1
(B-15.60)	(600)	(25)	(150)	(150)	(25)
B-9.12	12	2	5	9	1
(B-22.30)	(300)	(50)	(125)	(225)	(25)
B-9.18	18	2	5	9	1
(B-22.45)	(450)	(50)	(125)	(225)	(25)
B-9.24	24	2	5	9	1
(B-22.60)	(600)	(50)	(125)	(225)	(25)

TYPE	A	B	C	D	R ₁	R ₂
M-2.06	6	2	4	2	3	2
(M-5.15)	(150)	(50)	(100)	(50)	(75)	(50)
M-2.12	12	2	4	2	3	2
(M-5.30)	(300)	(50)	(100)	(50)	(75)	(50)
M-4.06	6	4	3	4	3	NA
(M-10.15)	(150)	(100)	(75)	(100)	(75)	NA
M-4.12	12	4	3	4	3	NA
(M-10.30)	(300)	(100)	(75)	(100)	(75)	NA
M-4.18	18	4	3	4	3	NA
(M-10.45)	(450)	(100)	(75)	(100)	(75)	NA
M-4.24	24	4	3	4	3	NA
(M-10.60)	(600)	(100)	(75)	(100)	(75)	NA
M-6.06	6	6	2	6	2	NA
(M-15.15)	(150)	(150)	(50)	(150)	(50)	NA
M-6.12	12	6	2	6	2	NA
(M-15.30)	(300)	(150)	(50)	(150)	(50)	NA
M-6.18	18	6	2	6	2	NA
(M-15.45)	(450)	(150)	(50)	(150)	(50)	NA
M-6.24	24	6	2	6	2	NA
(M-15.60)	(600)	(150)	(50)	(150)	(50)	NA

GENERAL NOTES

The bottom slope of combination curb and gutter constructed adjacent to pcc pavement shall be the same slope as the subbase or 6% when subbase is omitted.

t = Thickness of pavement.

Longitudinal joint tie bars shall be No. 6 (No. 19) at 24 (600) centers in accordance with details for longitudinal construction joint shown on Standard 420001.

A minimum clearance of 2 (50) between the end of the tie bar and the back of the curb shall be maintained.

The dowel bars shown in contraction joints will only be required for monolithic construction.

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

DATE	REVISIONS
1-1-13	Added general note regarding requirement for dowel bars.
1-1-09	Switched units to English (metric).

CONCRETE CURB TYPE B AND COMBINATION CONCRETE CURB AND GUTTER
(Sheet 1 of 2)

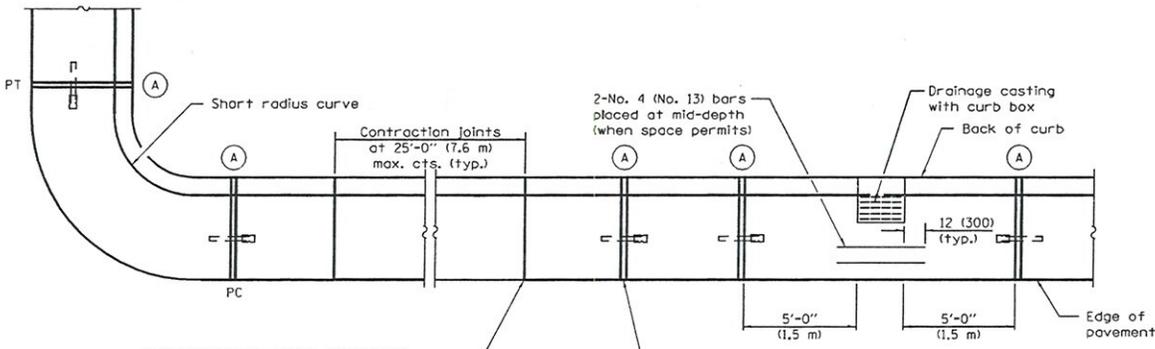
STANDARD 606001-05

Illinois Department of Transportation

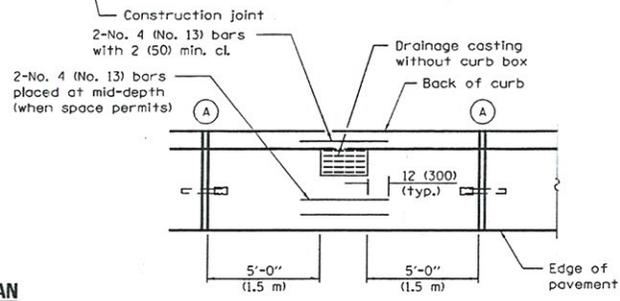
PASSED January 1, 2013
Michael Beard
ENGINEER OF POLICY AND PROCEDURES

APPROVED January 1, 2013
[Signature]
ENGINEER OF DESIGN AND ENVIRONMENT

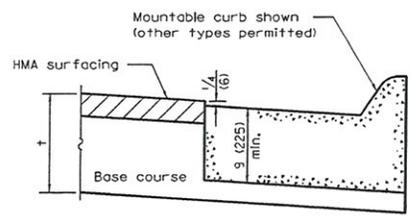
ISSUED 1-1-97



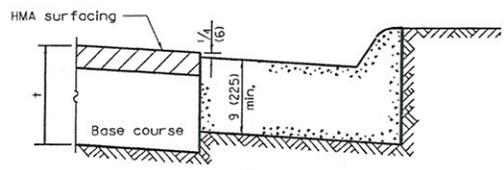
- Undoweled contraction joint (typ.) construction options:
1. Form with 1/4 (3) thick steel template 2 (50) deep, and seal.
 2. Saw 2 (50) deep at 4 to 24 hours, and seal.
 3. Insert 3/4 (20) thick preformed joint filler full depth and width.



PLAN

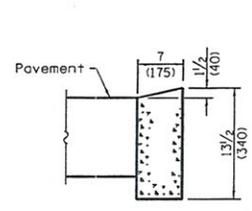


ON DISTURBED SUBGRADE

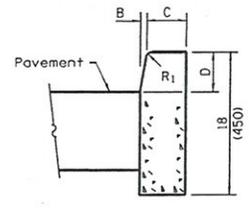


ON UNDISTURBED SUBGRADE

ADJACENT TO FLEXIBLE PAVEMENT

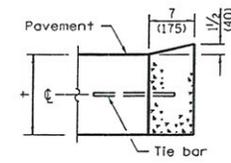


DEPRESSED CURB

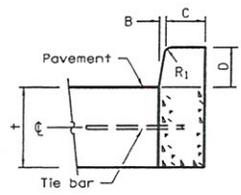


BARRIER CURB

ADJACENT TO FLEXIBLE PAVEMENT



DEPRESSED CURB



BARRIER CURB

ADJACENT TO PCC PAVEMENT OR PCC BASE COURSE

CONCRETE CURB TYPE B

**CONCRETE CURB TYPE B
AND COMBINATION
CONCRETE CURB AND GUTTER**
(Sheet 2 of 2)

STANDARD 606001-05

Illinois Department of Transportation

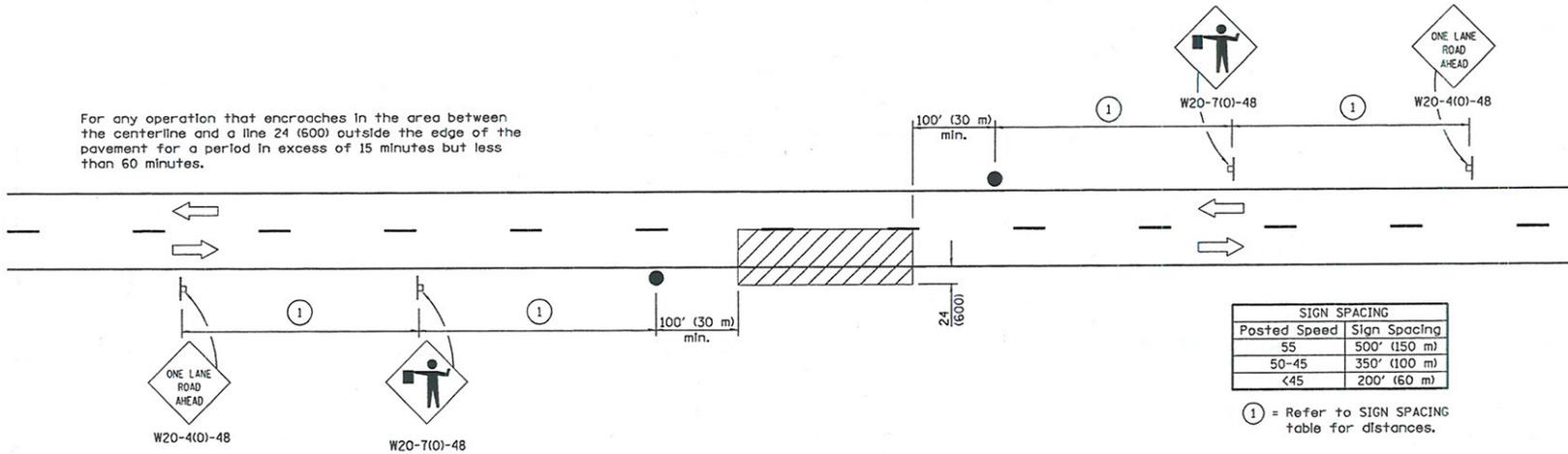
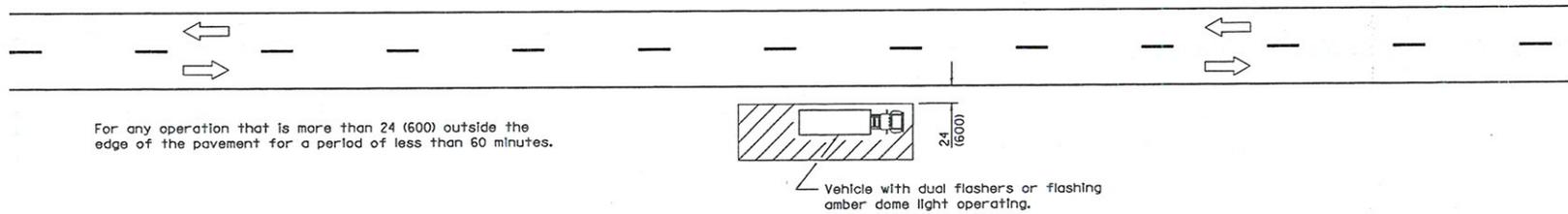
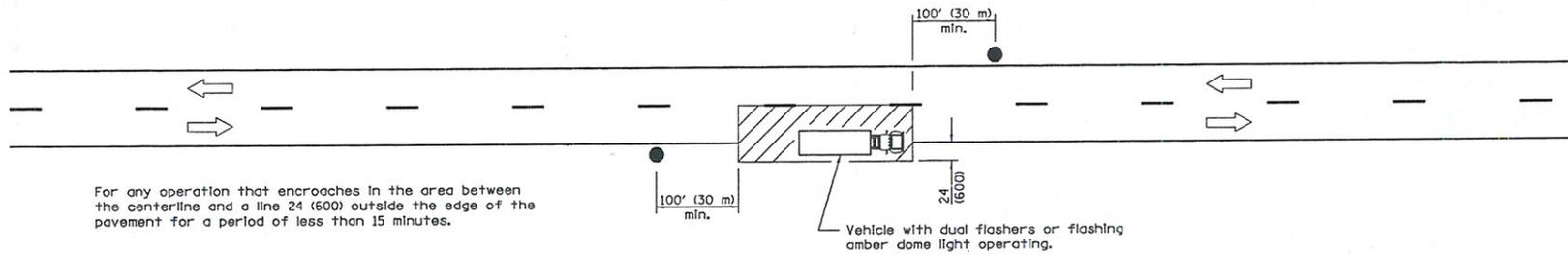
PASSED January 1, 2013

Michael Brand
ENGINEER OF POLICY AND PROCEDURES

APPROVED January 1, 2013

ENGINEER OF DESIGN AND ENVIRONMENT

16-1 (03/05)



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

TYPICAL APPLICATIONS

- Marking patches
- Field survey
- String line
- Utility operations
- Cleaning up debris on pavement

SYMBOLS

- Work area
- Sign on portable or permanent support
- Flagger with traffic control sign

DATE	REVISIONS
1-1-11	Revised flagger sign.
1-1-09	Switched units to English (metric).

LANE CLOSURE, 2L, 2W, SHORT TIME OPERATIONS

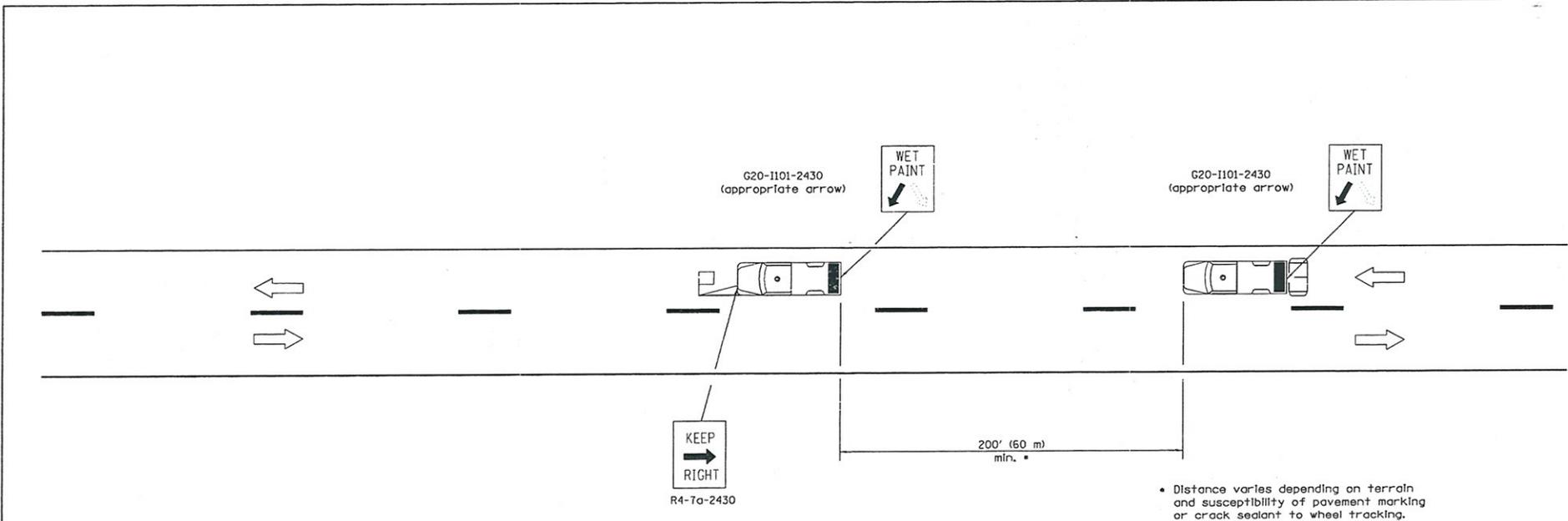
STANDARD 701301-04

Illinois Department of Transportation

APPROVED January 11, 2011
ENGINEER OF SAFETY ENGINEERING

APPROVED January 11, 2011
ENGINEER OF DESIGN AND ENVIRONMENT

16-1-1 (REVISED)



• Distance varies depending on terrain and susceptibility of pavement marking or crack sealant to wheel tracking.

TYPICAL APPLICATIONS

- Landscaping work
- Utility work
- Pavement marking
- Weed spraying
- Roadometer measurements
- Debris cleanup
- Crack pouring

SYMBOLS

-  Arrow board (Hazard Mode only)
-  Truck with headlights, emergency flashers and flashing amber light. (visible from all directions)
-  18x18 (450x450) min. orange flag (use when guide wheel is used)
-  Truck mounted attenuator

GENERAL NOTES

This Standard is used where any vehicle, equipment, workers or their activities will require a continuous moving operation where the average speed is greater than 3 mph (5 km/h).

For shoulder operations not encroaching on the pavement, use DETAIL A, Standard 701426.

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

Illinois Department of Transportation

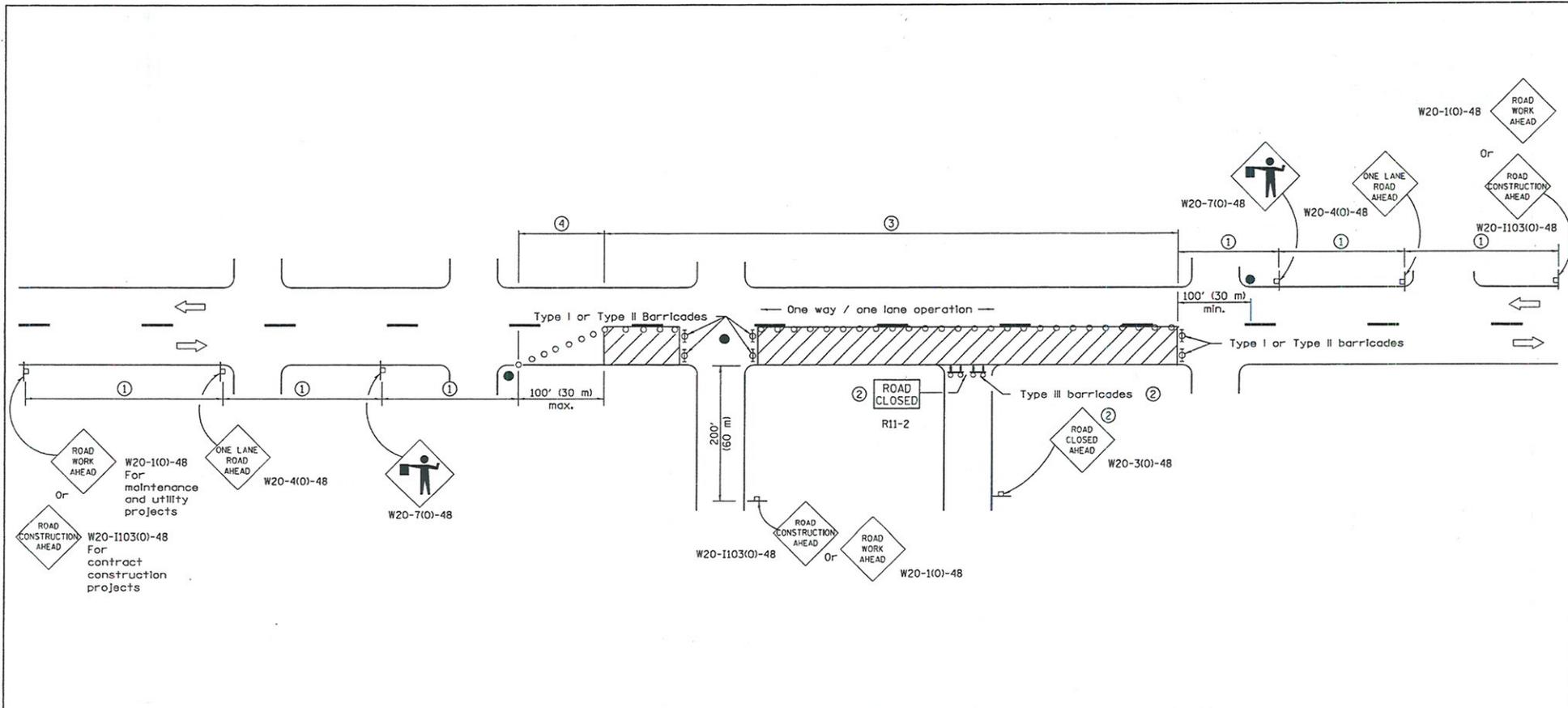
APPROVED January 1, 2009
 ENGINEER OF OPERATIONS
 APPROVED January 1, 2009
 ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

DATE	REVISIONS
1-1-09	Switched units to English (metric). Omitted Pass With Care sign.
1-1-00	Elim. speed restrictions in Standard title.

LANE CLOSURE 2L, 2W MOVING OPERATIONS—DAY ONLY

STANDARD 701311-03



SIGN SPACING	
Posted Speed	Sign Spacing
55	500' (150 m)
50-45	350' (100 m)
<45	200' (60 m)

SYMBOLS

- Work area
- Cone, drum or barricade (not required for moving operations)
- Sign on portable or permanent support
- Flagger with traffic control sign
- Barricade or drum with flashing light
- Type III barricade with flashing lights

- ① Refer to SIGN SPACING TABLE for distances.
- ② For approved sideroad closures.
- ③ Cones at 25' (8 m) centers for 250' (75 m). Additional cones may be placed at 50' (15 m) centers. When drums or Type I or Type II barricades are used, the interval between devices may be doubled.
- ④ Cones, drums or barricades at 20' (6 m) centers.

GENERAL NOTES

This Standard is used where at any time, day or night, any vehicle, equipment, workers or their activities encroach on the pavement requiring the closure of one traffic lane in an urban area.

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

DATE	REVISIONS
1-1-11	Revised flagger sign.
1-1-09	Switched units to English (metric).
	Corrected sign No.'s.

**URBAN LANE CLOSURE,
2L, 2W, UNDIVIDED**

STANDARD 701501-06

Illinois Department of Transportation

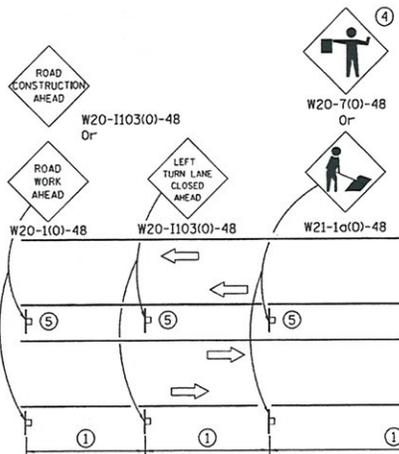
APPROVED January 1, 2011

 ENGINEER OF SAFETY ENGINEERING

APPROVED January 1, 2011

 ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97



LEFT TURN LANE OR CENTER MEDIAN OPERATIONS

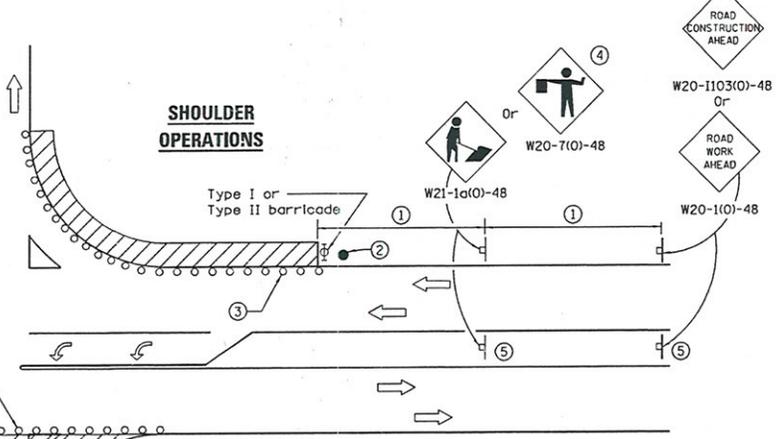
- ① Refer to SIGN SPACING TABLE for distance.
- ② Required for speed > 40 mph.
- ③ Cones at 25' (8 m) centers for 250' (75 m). Additional cones may be placed at 50' (15 m) centers. When drums or Type I or Type II barricades are used, the interval between devices may be doubled.
- ④ Use flagger sign only when flagger is present.
- ⑤ Omit this sign when median is less than 10' (3 m) or for bi-directional turn lanes.
- ⑥ Cones, drums or barricades at 20' (6 m) centers in taper.
- ⑦ Advanced arrow board required for speeds > 45 mph.

SIGN SPACING	
Posted Speed	Sign Spacing
55	500' (150 m)
50-45	350' (100 m)
<45	200' (60 m)

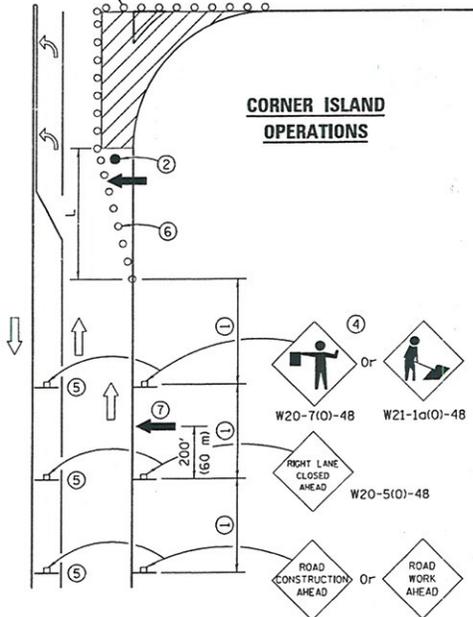
SYMBOLS

- Work area
- Cone, drum or barricade
- Sign on portable or permanent support
- Arrow board
- Barricade or drum with flashing light
- Flagger with traffic control sign

SHOULDER OPERATIONS



CORNER ISLAND OPERATIONS



W20-1103(O)-48 W20-1(O)-48 for contract maintenance and utility projects

GENERAL NOTES

This Standard is used where at any time, day or night, any vehicle, equipment, workers or their activities encroach on the pavement during shoulder operations or where construction requires lane closures in an urban area.

Calculate L as follows:

SPEED LIMIT

FORMULAS
English (Metric)

40 mph (70 km/h) or less:

$$L = \frac{WS^2}{60} \quad L = \frac{WS^2}{150}$$

45 mph (80 km/h) or greater:

$$L = (W)(S) \quad L = 0.65(W)(S)$$

W = Width of offset in feet (meters).

S = Normal posted speed mph (km/h).

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

DATE	REVISIONS
1-1-12	Revised flagger sign. Omitted W21-110 sign.
1-1-11	Added advanced arrow board and note (7).

URBAN LANE CLOSURE, MULTILANE INTERSECTION

STANDARD 701701-08

Illinois Department of Transportation

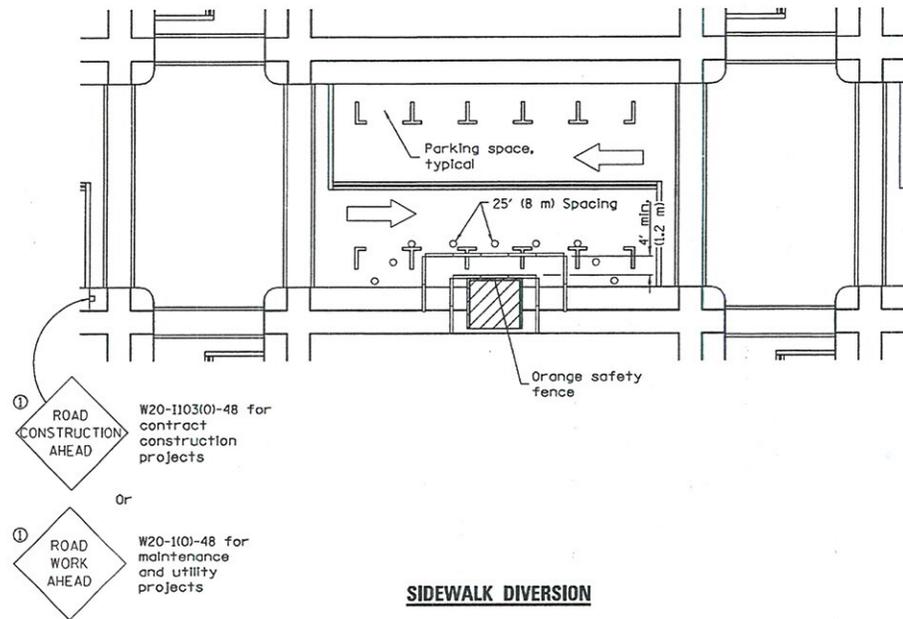
APPROVER January 1, 2012

 ENGINEER OF SAFETY ENGINEERING

APPROVED January 1, 2012

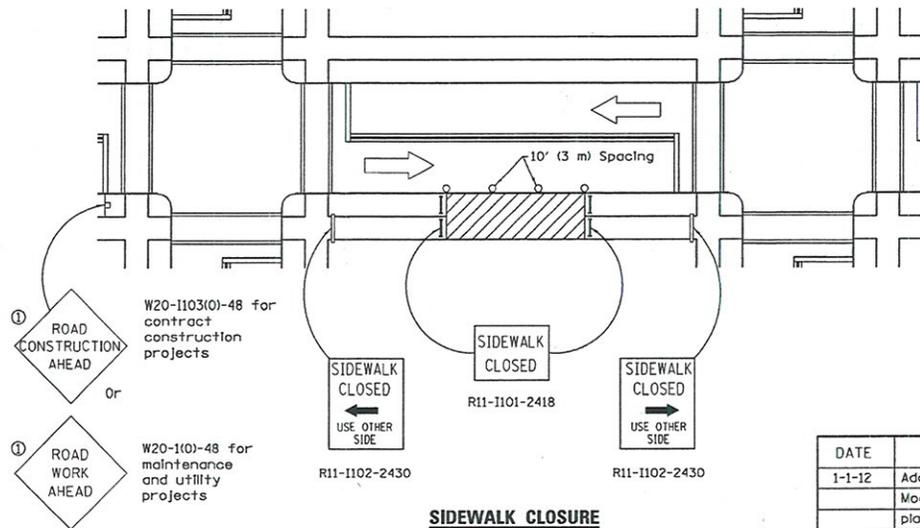
 ENGINEER OF DESIGN AND ENVIRONMENT

1520050
16-1-1



① Omit whenever duplicated by road work traffic control.

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



GENERAL NOTES

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

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

Temporary facilities shall be detectable and accessible.

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

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

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

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

DATE	REVISIONS
1-1-12	Added SIDEWALK DIVERSION.
	Modified appearance of plan views. Renamed Std.
1-1-09	Switched units to English (metric),
	702001 to 701901.

SIDEWALK, CORNER OR CROSSWALK CLOSURE

(Sheet 1 of 2)

STANDARD 701801-05

Illinois Department of Transportation

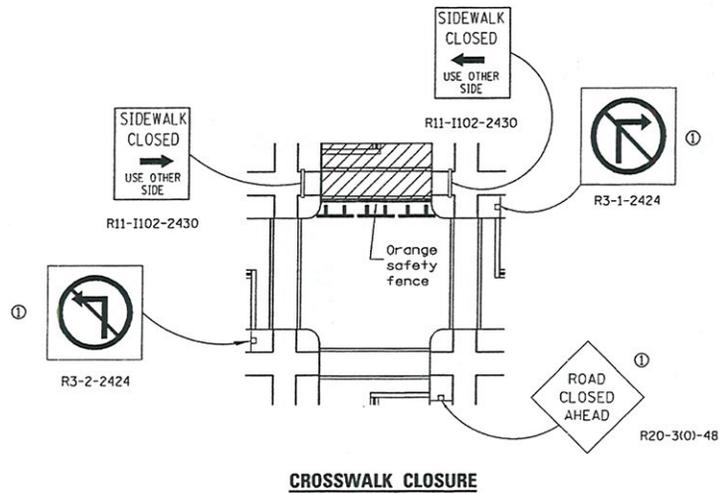
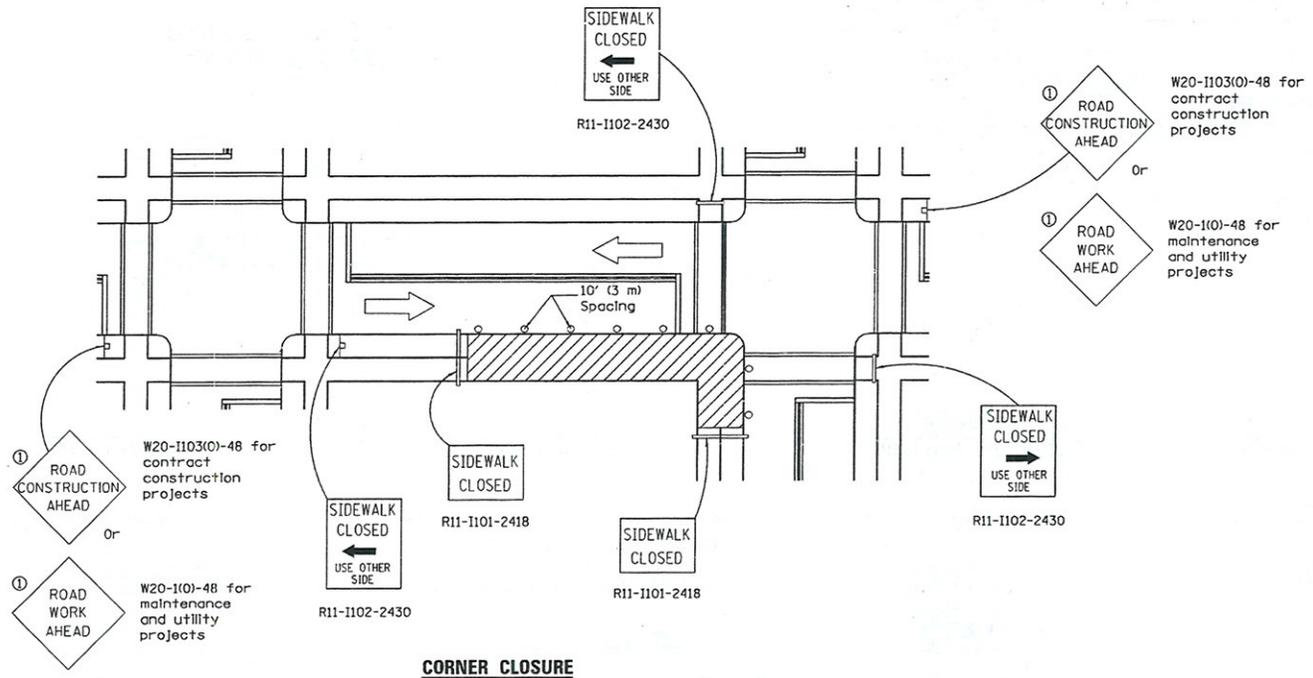
APPROVER January 1, 2012

James P. ...
ENGINEER OF SAFETY ENGINEERING

APPROVED January 1, 2012

...
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97



SIDEWALK, CORNER OR CROSSWALK CLOSURE

(Sheet 2 of 2)

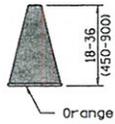
STANDARD 701801-05

Illinois Department of Transportation

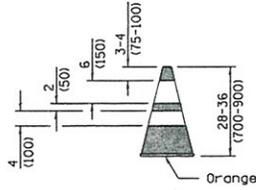
APPROVED January 1, 2012
James A. [Signature]
 ENGINEER OF SAFETY ENGINEERING

APPROVED January 1, 2012
[Signature]
 ENGINEER OF DESIGN AND ENVIRONMENT

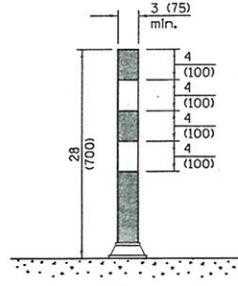
16-1-1 03/05/11



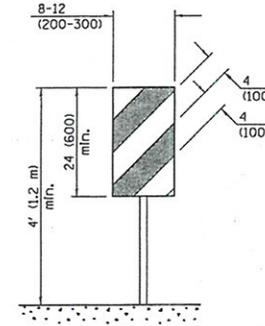
CONE



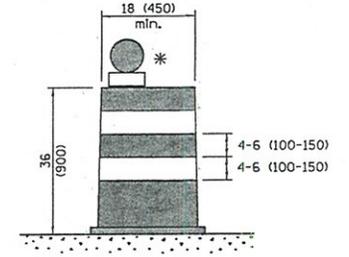
REFLECTORIZED CONE



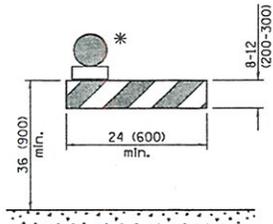
FLEXIBLE DELINEATOR



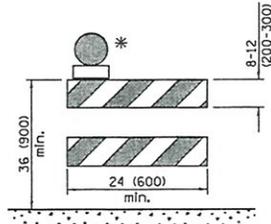
**VERTICAL PANEL
POST MOUNTED**



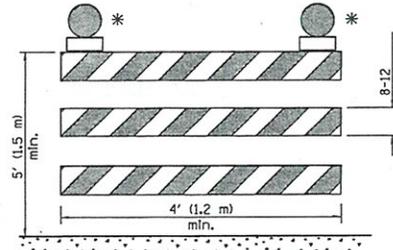
DRUM



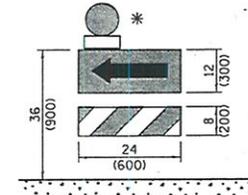
TYPE I BARRICADE



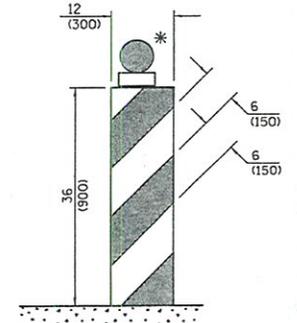
TYPE II BARRICADE



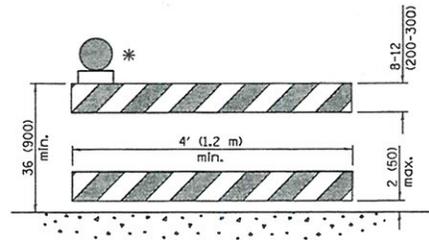
TYPE III BARRICADE



**DIRECTION INDICATOR
BARRICADE**



VERTICAL BARRICADE



**DETECTABLE PEDESTRIAN
CHANNELIZING BARRICADE**

* Warning lights (if required)

GENERAL NOTES
All heights shown shall be measured above the pavement surface.

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

DATE	REVISIONS
1-1-12	Added DETECTABLE PEDESTRIAN CHANNELIZING BARRICADE.
1-1-09	Switched units to English (metric). Omitted light on vertical panel.

**TRAFFIC CONTROL
DEVICES**

(Sheet 1 of 3)

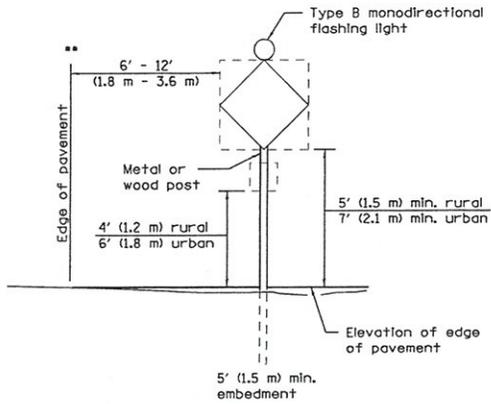
STANDARD 701901-02

Illinois Department of Transportation

APPROVED January 1, 2012
Nathan Mann
 ENGINEER OF OPERATIONS

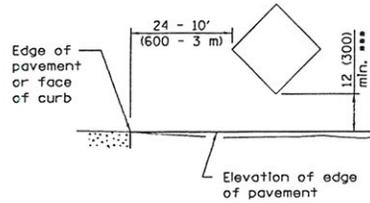
APPROVED January 1, 2012
Scott Smith
 ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97



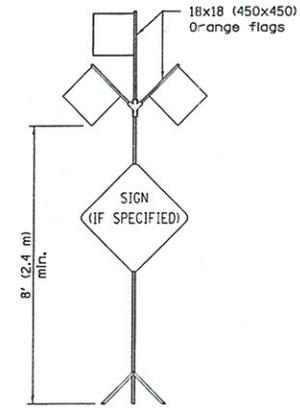
POST MOUNTED SIGNS

- When curb or paved shoulder are present this dimension shall be 24 (600) to the face of curb or 5' (1.8 m) to the outside edge of the paved shoulder.



SIGNS ON TEMPORARY SUPPORTS

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



HIGH LEVEL WARNING DEVICE

ROAD
CONSTRUCTION
NEXT X MILES

END
CONSTRUCTION

G20-110-6036

G20-2a(0)-6024

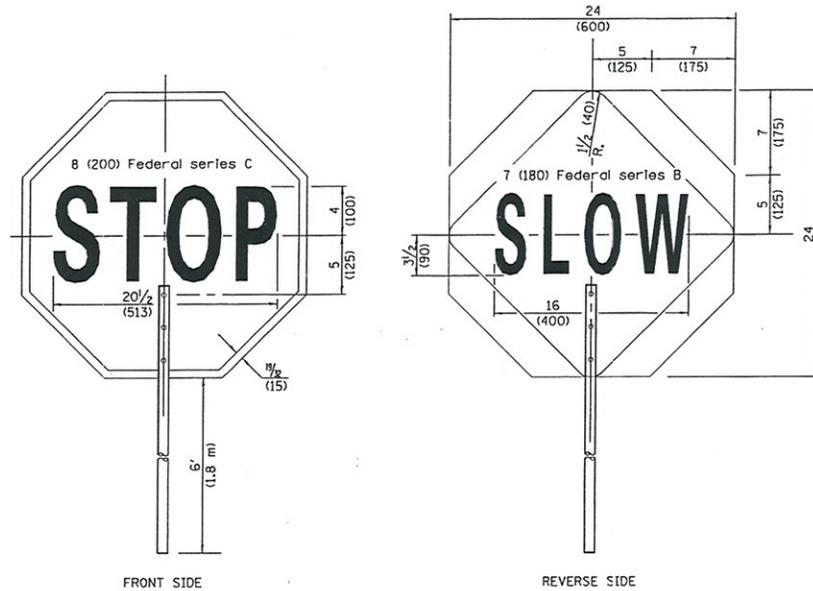
This signing is required for all projects 2 miles (3200 m) or more in length.

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

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

Dual sign displays shall be utilized on multi-lane highways.

WORK LIMIT SIGNING



FRONT SIDE

REVERSE SIDE

FLAGGER TRAFFIC CONTROL SIGN

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

TRAFFIC CONTROL DEVICES

(Sheet 2 of 3)

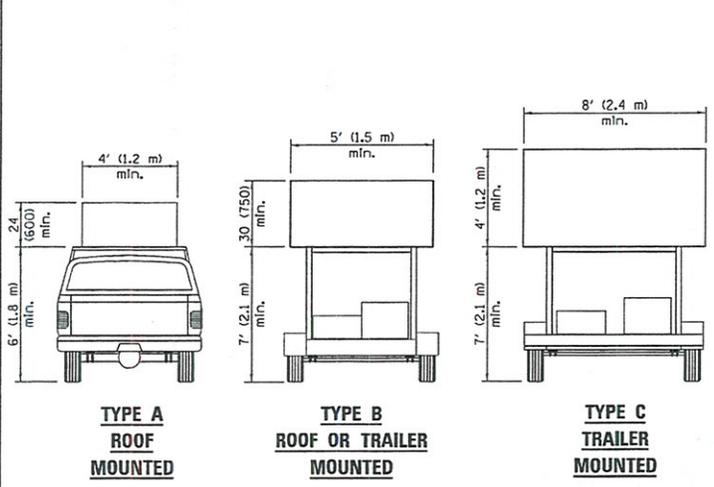
STANDARD 701901-02

Illinois Department of Transportation

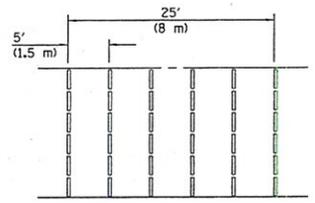
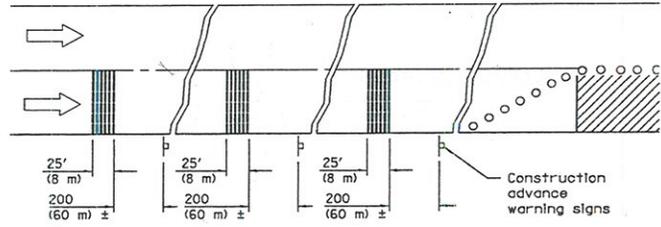
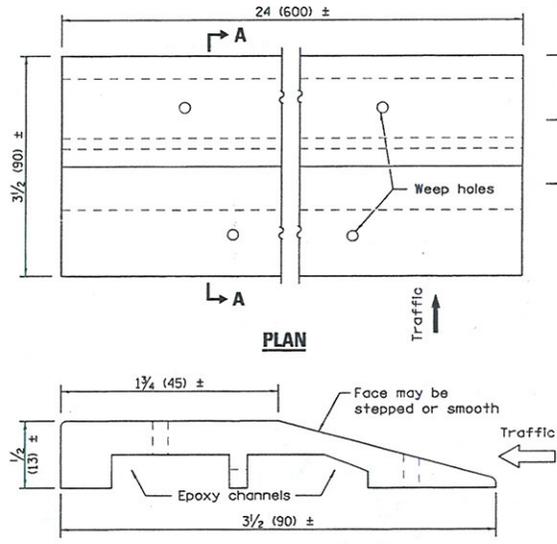
APPROVED January 1, 2012
Water Mann
 ENGINEER OF OPERATIONS

APPROVED January 1, 2012
Saffish
 ENGINEER OF DESIGN AND ENVIRONMENT

16-1-1 03/05/11

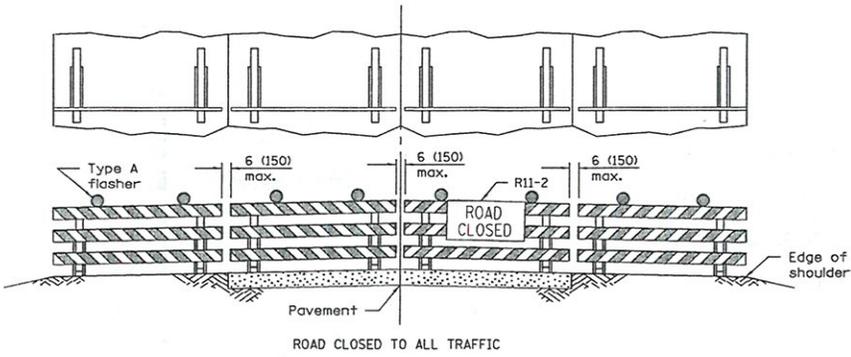


ARROW BOARDS



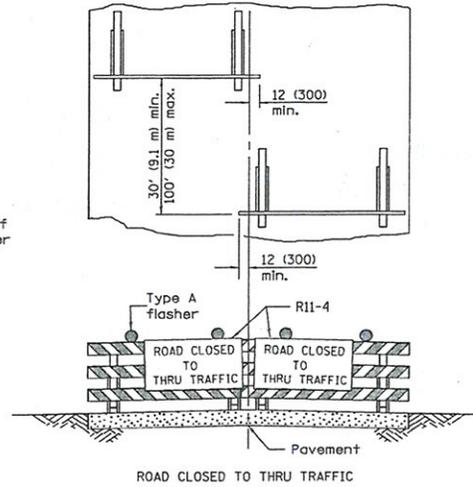
SECTION A-A

TEMPORARY RUMBLE STRIPS



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

**TYPICAL APPLICATIONS OF
TYPE III BARRICADES CLOSING A ROAD**



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

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

Illinois Department of Transportation

APPROVED January 1, 2012
Water Mann
 ENGINEER OF OPERATIONS

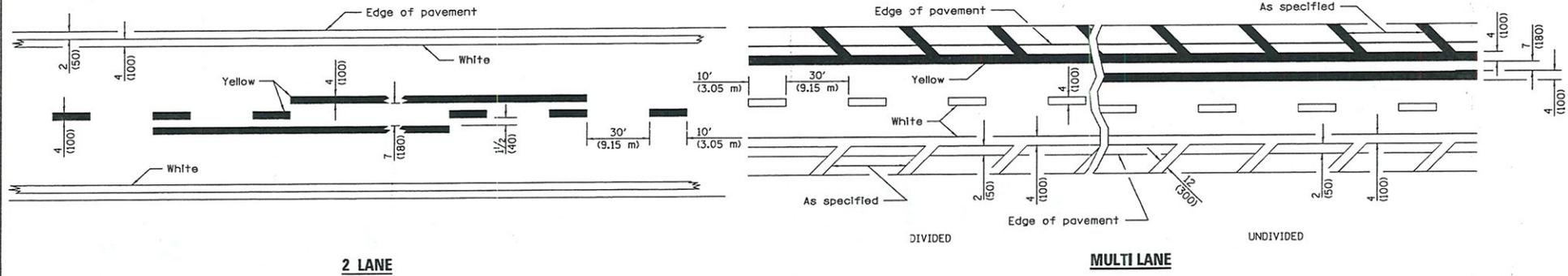
APPROVED January 1, 2012
S. J. ...
 ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-8-97

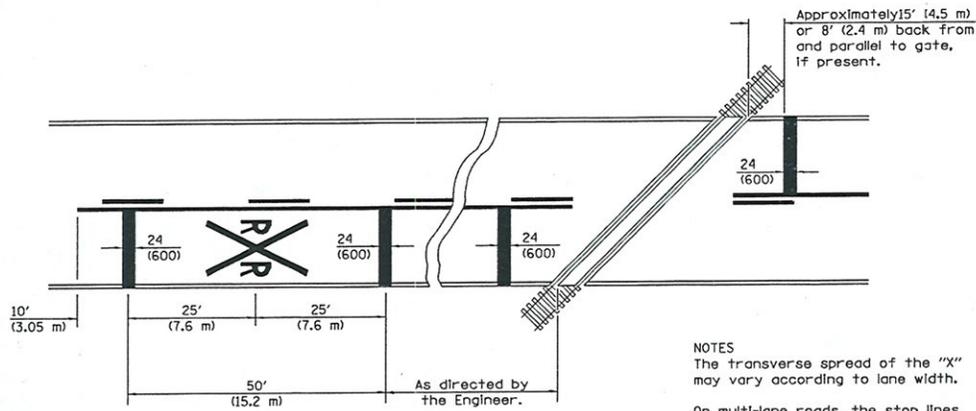
**TRAFFIC CONTROL
DEVICES**

(Sheet 3 of 3)

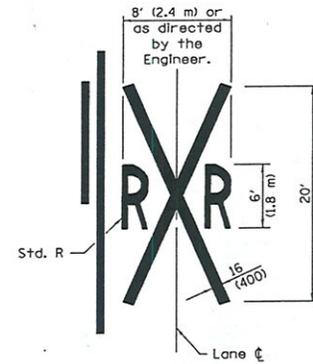
STANDARD 701901-02



LANE AND EDGE LINES



NOTES
 The transverse spread of the "X" may vary according to lane width.
 On multi-lane roads, the stop lines shall extend across all approach lanes and separate RXR symbols shall be placed adjacent to each other in each lane.
 When the pavement marking symbol is used, a portion of the symbol should be located directly adjacent to the Advance Warning Sign (W10-1) as placed by Table 2C-4, Condition B of the MUTCD.



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

PAVEMENT MARKINGS AT RAILROAD-HIGHWAY GRADE CROSSING

DATE	REVISIONS
1-1-12	Updated reference to current MUTCD table in notes.
1-1-09	Switched units to English (metric).

TYPICAL PAVEMENT MARKINGS

(Sheet 1 of 2)

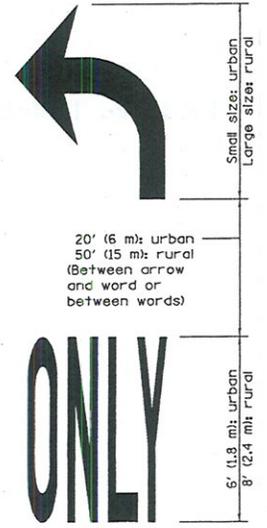
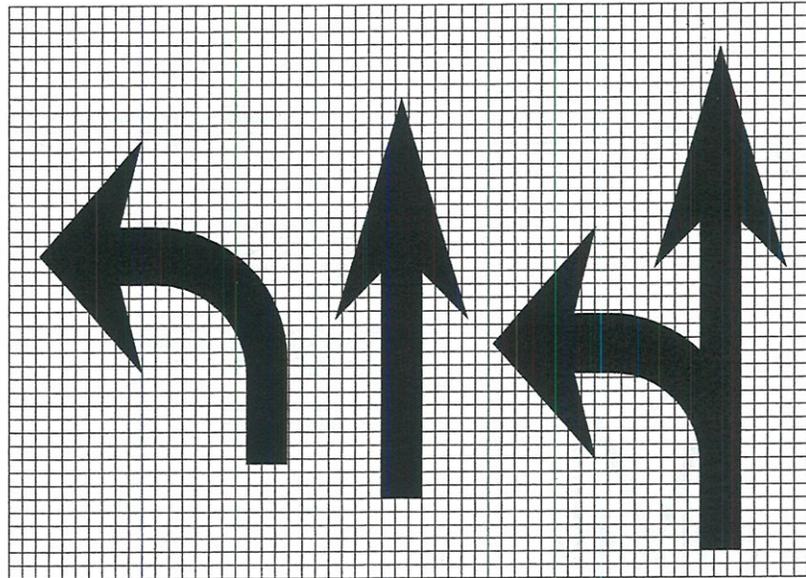
STANDARD 780001-03

Illinois Department of Transportation

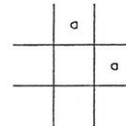
APPROVED January 1, 2012
Water Mann
 ENGINEER OF OPERATIONS

APPROVED January 1, 2012
Spitzer
 ENGINEER OF DESIGN AND ENVIRONMENT

16-1-1 02/15/11



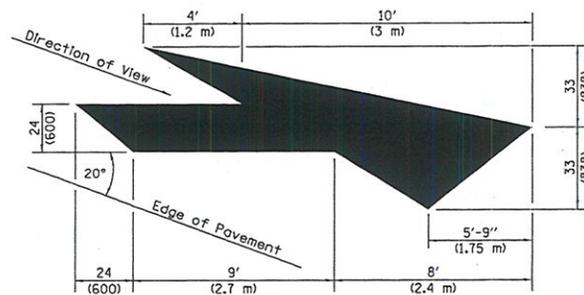
WORD AND ARROW LAYOUT



Legend Height	Arrow Size	a
6' (1.8 m)	Small	2.9 (74)
8' (2.4 m)	Large	3.8 (96)

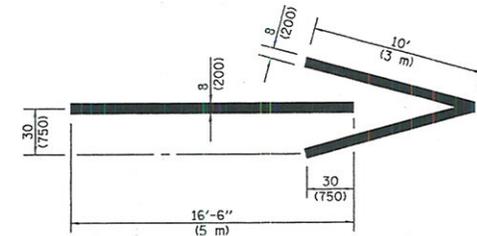
The space between adjacent letters or numerals should be approximately 3 (75) for 6' (1.8 m) legend and 4 (100) for 8' (2.4 m) legend.

LETTER AND ARROW GRID SCALE



LANE DROP ARROW

Right lane drop arrow shown. Use mirror image for left lane.



WRONG WAY ARROW

TYPICAL PAVEMENT MARKINGS

(Sheet 2 of 2)

STANDARD 780001-03

Illinois Department of Transportation

APPROVED January 1, 2012
Justin Mann
 ENGINEER OF OPERATIONS

APPROVED January 1, 2012
S. J. Smith
 ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97



TESTING SERVICE CORPORATION

Corporate Office

360 S. Main Place, Carol Stream, IL 60188-2404
630.462.2600 • Fax 630.653.2988

Local Offices:

1701 W. Market Street, Suite B, Bloomington, IL 61701-2641
309.821.0430 • Fax 309.821.1242

457 E. Gundersen Drive, Carol Stream, IL 60188-2492
630.653.3920 • Fax 630.653.2726

650 N. Peace Road, Suite D, DeKalb, IL 60115-8401
815.748.2100 • Fax 815.748.2110

401 Riverside Drive, Suite 24, Gurnee, IL 60031-5906
847.249.6040 • Fax 847.249.6042

2235 23RD Avenue, Rockford, IL 61104-7334
815.394.2562 • Fax 815.394.2566

203 Earl Road, Suite A, Shorewood, IL 60404-9446
815.744.1510 • Fax 815.744.1728

8201 W. 183RD Street, Suite C, Tinley Park, IL 60487-9208
708.429.2080 • Fax 708.429.2144

Geotechnical & Environmental Engineering

1978 1979 1980 1981 1982 1983

Construction Materials Engineering & Testing

1984 1985 1986 1987 1988 1989 1990

Laboratory Testing of Soils, Concrete & Asphalt

1991 1992 1993 1994 1995

Geo-Environmental Drilling & Sampling

Report of Soils Exploration

Maple Ave Reconstruction and Relief Sewer

Bluff Ave to LaGrange Rd

LaGrange, Illinois

Baxter & Woodman

GEOTECHNICAL GROUP

CAROL STREAM

TABLE OF CONTENTS

Section		Page
I.	TEXT	
1.0	Introduction	2
2.0	Field Investigation and Laboratory Testing	2
3.0	Discussion of Test Data	4
3.1	Pavement Composition.	4
3.2	Soil Borings.....	4
4.0	Analysis and Recommendations	5
4.1	Roadway Construction.	5
4.2	Sewer Construction - Maple Avenue.	6
4.3	Sewer Construction - Poplar Place and Edgewood Drive.....	8
4.4	Lateral Earth Pressures.	8
4.5	Groundwater Management	9
5.0	Closure	9
II.	APPENDIX	

July 6, 2011

L-76,828

REPORT OF SOILS EXPLORATION
MAPLE AVE RECONSTRUCTION & RELIEF SEWER
BLUFF AVENUE TO LA GRANGE ROAD
LA GRANGE, ILLINOIS

PREPARED FOR:
BAXTER & WOODMAN, INC.
8840 WEST 192ND STREET
MOKENA, ILLINOIS 60448

PREPARED BY
TESTING SERVICE CORPORATION
457 EAST GUNDERSEN DRIVE
CAROL STREAM, ILLINOIS 60188
630-653-3920

July 6, 2011

L-76,828

REPORT OF SOILS EXPLORATION
MAPLE AVE RECONSTRUCTION & RELIEF SEWER
BLUFF AVENUE TO LA GRANGE ROAD
LA GRANGE, ILLINOIS

1.0 INTRODUCTION

This report presents results of the soils exploration performed for Maple Avenue reconstruction and new relief sewer in La Grange, Illinois. These geotechnical services have been provided in accordance with TSC Proposal No. 46,746 dated April 5, 2011, incorporated herein by reference.

The project limits for Maple Avenue extend for approximately 1,970 lf from Sta. 49+00 to 68+71, i.e. LaGrange Road to Bluff Avenue. The project also includes Poplar Place for about 765 lf from Hillgrove Avenue to the cul-de-sac to the north. These roads currently consist of two lane asphalt pavements with curb and gutter.

It is understood that the Maple Avenue is to be reconstructed in connection with the installation of a new relief sewer. The storm sewer will be 60 inch in diameter. Plans provided by Baxter & Woodman have sewer inverts ranging from Elevation to 615.5 to 623.5, i.e. approximately 15 to 20 feet below existing grade. An additional relief sewer is planned on Poplar Place and a 100-year overflow sewer at Edgewood Drive.

2.0 FIELD INVESTIGATION AND LABORATORY TESTING

A total of thirteen (13) soil borings and twelve (12) pavement cores were performed for this soils exploration. Borings 1-11 were drilled along Maple Avenue for the proposed relief sewer and roadway



reconstruction. They were extended to auger/sampler refusal at depths ranging from 5 to 15 feet below existing grade. Borings 101 and 102 were extended 8 and 6 feet deep on Poplar Place and Edgewood Avenue, respectively. The boring locations were selected by Baxter & Woodman and staked by TSC. Reference is made to the Boring Location Plan included on the Appendix of this report.

The pavement cores were obtained using a 4" diameter core barrel containing diamond cutting bits. Granular base course materials were also sampled prior to boring being performed. The borings were back filled and patched upon completion. The pavement cores and aggregate samples were examined by a materials technician in the laboratory. These results are summarized in the attached sheet titled "Pavement Core Results".

The borings were drilled and samples tested according to currently recommended American Society for Testing and Materials specifications. Borings 1-11 were sampled at 2½-foot intervals, with Borings 101 and 102 were sampled continuously at 2-foot intervals to completion depths. All samples were taken in conjunction with the Standard Penetration Test, for which driving resistance to a 2" split-spoon sampler (N-value in blows per foot) provides an indication of the relative density of granular materials and consistency of cohesive soils. Water level readings were taken during and following completion of drilling operations.

All soil samples were examined in the laboratory to verify field descriptions and to classify them in accordance with the Unified 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 all cohesive samples using a calibrated pocket penetrometer, with actual measurements of unconfined compressive strength performed on native clay soils. One (1) Illinois Bearing Ratio (IBR) test was also run on bag sample obtained of uppermost subgrade soils at Boring 3.

Reference is made to the boring logs in the Appendix which indicate subsurface stratigraphy and soil descriptions, results of field and laboratory tests, as well as water level observations. An IBR Data Sheet with associated Moisture-Density Relationship, 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.

3.0 DISCUSSION OF TEST DATA

3.1 Pavement Composition

Twelve (12) pavement cores were taken in order to determine the general thickness and composition of the pavement and subbase materials. These results are detailed in the Appendix of this report and are briefly described in the following paragraphs.

Cores 1-11 were taken along Maple Avenue between LaGrange Road to Bluff Avenue. The cores revealed 2¼ to 5¼ inches bituminous concrete, typically overlying 9 to 14 inches crushed stone base materials with up to 18 inches at Core 3. Examination of the core samples generally revealed a single bituminous surface and binder layers, with Cores 6 and 7 having three (3) bituminous layers and Core 11 consisting of a single bituminous surface layer. Geotextile fabric was found in C-6 between the binder course and an emulsified asphalt layer. It should be noted that the bituminous layers in Cores 1 and 7 were generally not bonded to the underlying course.

Core 101 was taken on Popular Place between Hillgrove Avenue and the cul-de-sac. The core revealed 4 inches bituminous concrete overlying 5 inches crushed stone base materials. Underlying materials otherwise consisted of brown and gray silty clay in a very tough condition. The subgrade had pocket penetrometer readings ranging from 2.0 to 3.0 tons per square foot (tsf) at moisture contents from 21 to 25 percent.

3.2 Soil Borings

Borings 1-11 were cored prior to being drilled on existing asphalt pavements, with Borings 101 and 102 taken on grass located within the roadway right-of-way. Topsoil fill materials were 2 to 4 inches in thickness at Borings 101 and 102.

Silt clay fill materials were found underlying the topsoil layer in Borings 101 and 102 and extended 2 to 5 feet below existing grade. Samples of the cohesive fill exhibited dry unit weights ranging from 110 to 118 pounds per cubic foot (pcf) and pocket penetrometer readings from 3.0 to 4.5+ tons per square foot (tsf). Moisture contents varied from 12 to 15 percent in Boring 101 and were up to 24 percent in Boring 102.

Tough to hard native silty clay soils otherwise predominated in the borings, extending to top of rock at Borings 2-11. The cohesive materials had unconfined compressive strengths typically ranging from 1.5 to 4.5+ tons per square foot (tsf) at moisture contents varying from 17 to 25 percent. A very dense clayey sand layer was encountered below a depth of 8 feet in Boring 1, having N-values ranging from 53 to 65 blows per foot (bpf).

Hard drilling and/or high sampler blow counts were first encountered at between 3½ and 13½ feet below existing grade in Borings 1-11, correlating to approximate Elevations 619.5 to 636.5. This likely represents boulder zone materials or the top of bedrock. Drilling operations were able to advance about 1 to 2 feet into these materials before virtual sampler/auger refusal was met. Based on auger cuttings the apparent bedrock appeared to consist of brown to gray Dolomitic limestone. The borings were all "dry" both during and upon completion of drilling operations.

4.0 ANALYSIS AND RECOMMENDATIONS

4.1 Roadway Construction

Borings 1-11 were drilled along Maple Avenue between Bluff Avenue and LaGrange Road. It is understood that Maple Avenue will be reconstructed in connection with the new relief sewer to be installed along the middle of the roadway. Very tough to hard silty clay soil were found below the existing pavement section, considered suitable for pavement support. Borings 101 and 102 were drilled within the grass right-of-way along Poplar Place and Edgewood Avenue, respectively. Silty clay (native and/or fill) materials were found in the upper 5 feet, also representing suitable subgrade.

Work performed for this study included performing an IBR test on a representative cohesive subgrade sample from Boring 3 (i.e. on Maple Avenue), which revealed an IBR value of 2.5. The Standard Proctor test performed on this material revealed a maximum dry density of 113.2 pound per cubic foot (pcf) at an optimum water content of 16.1 percent. Based on the data obtained from this soil boring, an IBR value no greater than 2.5 is recommended for pavement design.

All earthwork and subgrade preparation should be in accordance with Division 200 and 300 of the IDOT Standard Specifications. Compaction for subgrade materials should be to at least 95 percent Standard Proctor density (AASHTO T-99). Remedial work for unstable subgrade should consist of discing, aerating, and recompacting exposed subgrade soils, as provided for in Art. 301.04 of the IDOT Standard Specifications. Depending upon grading requirements and specific site conditions, solutions to a persistent pumping problem may include use of geotextile stabilization fabric or geogrid product, removal of unstable soils and replacement with granular backfill, construction of trench drains or a combination thereof.

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 beneath the Aggregate Subgrade layer may consist of the IDOT Porous Granular Embankment-Subgrade (PGES). Please note that the PGES materials are to be placed beneath the aggregate base course and are to be used only as a bridging layer over soft, pumpy subgrade or for replacement of unsuitable soils. The use of geotextile fabric can help to reduce the depth of undercutting and aggregate Fill required.

A Shrinkage Factor on the order of 15 percent should be used to correlate the volume of earth borrow materials for use as new earth embankment or subgrade Fill. Unsuitable organic soils should not be included as suitable earth Fill.

4.2 Sewer Construction - Maple Avenue

Borings 1-11 were drilled for a proposed 60" relief sewer along Maple Avenue. Plans provided by Baxter & Woodman indicate that the sewer inverts ranging from Elevation to 615.5 to 623.5, i.e. approximately 15 to 20 feet below existing grade.



Summarized in the following table are existing grades and the approximate storm relief sewer invert elevations at each boring location. The depth/elevation to top of non-rippable materials (i.e. bedrock or possible boulder zone) are also shown.

Boring No.	Approximate Station	Ground Surface Elevation*	Storm Relief Sewer Invert**		Non-Rippable Material#	
			Depth (feet)	Elevation	Depth (feet)	Elevation
1	66+30	633.3	17.0	616.5	14.0	619.5
2	63+97	632.9	15.5	617.5	8.5	624.5
3	61+66	634.7	15.5	619.0	6.0	628.5
4	60+53	638.9	18.5	620.5	8.5	630.5
5	58+70	640.5	20.0	620.5	8.5	632.0
6	57+05	640.7	20.0	620.5	4.0	636.5
7	55+15	639.7	18.0	621.5	6.0	633.5
8	53+48	639.6	17.5	622.0	3.5	636.0
9	51+40	638.7	16.0	623.0	3.5	635.0
10	49+53	638.4	15.0	623.5	6.5	632.0
11	49+00	638.8	15.5	623.5	6.0	633.0

- * Ground surface elevations at the borings were provided by Baxter & Woodman.
- ** Approximate invert depth/elevations were interpolated from plans provided; rounded to the nearest 0.5 foot.
- # Depths/elevations of potentially non-rippable materials rounded to the nearest 0.5 foot.

Hard drilling and/or high sampler blow counts, likely indicative of top of bedrock or boulder zone (i.e. non-rippable materials), were encountered above proposed relief sewer invert elevations in Borings 1-11. They were typically met with hard drilling between 3½ to 8½ feet below existing grade, i.e. between Elevations 620 to 636. Drilling operations were able to advance 1 to 2 feet into these materials before virtual auger refusal was met. It should be understood, that where hard drilling was first encountered is considered to be the top of potentially non-rippable material. It should also be noted that bedrock may be encountered at shallower depths along the proposed relief sewer (i.e. between boring locations).



The bedrock or boulder zone materials are potentially non-rippable, i.e. it will likely not be possible to excavate into (penetrate) them using conventional backhoe equipment. This condition will directly impact sewer construction costs, to typically depend on the amount of rock excavations required to reach sewer invert elevations. Special excavation procedures may be required where rock or boulder zone materials are encountered, to possibly include pneumatic tools or blasting (if permitted).

In some cases drilling equipment can penetrate materials which are very difficult to excavate with backhoe equipment. Conversely, our equipment may experience hard drilling or refusal in materials which are rippable in a larger hole. It can therefore be beneficial to perform test pits along the grass shoulder within the existing roadway right-of-way prior to construction to further evaluate the presence of rock, boulders, cobbles or very dense materials and to assess their ease or difficulty of excavation. As indicated above, specialized rock excavation methods may be required where relatively "sound" rock is encountered.

4.3 Sewer Construction - Poplar Place and Edgewood Avenue

Borings 101 and 102 were taken on Poplar Place and Edgewood Avenue, respectively. They revealed silty clay soils (native and/or fill) in a tough to hard condition to boring completion depths. These cohesive materials are considered suitable for support of a net allowable soil bearing pressure of 3000 pounds per square foot (psf). In this regard, the cohesive soils exhibited unconfined compressive strengths of 1.5 tons per square foot (tsf) or greater. The 3000 psf bearing value is typical and generally satisfactory for support of the sewers and trench backfill.

4.4 Lateral Earth Pressures

Lateral earth pressures for permanent underground structures will be dependent on the type of backfill used and the groundwater levels. Equivalent fluid pressures are given for cohesive and granular backfills, assuming at-rest (K_0) and active (K_a) 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).



BACKFILL TYPE	EQUIVALENT FLUID PRESSURE (PSF/FT)	
	ABOVE WATER TABLE	BELOW WATER TABLE
	AT-REST STATE	
Granular	50	90
Cohesive	65	100
	ACTIVE STATE	
Granular	35	80
Cohesive	50	90

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.

All excavations should comply with the requirements of OSHA 29CFR, Part 1926, Subpart P, "Excavations" and its appendices as well as any other applicable codes. This document states that excavation safety is the responsibility of the Contractor. Reference to this OSHA requirement should be included in the job specifications.

4.5 Groundwater Management

Given that the borings were all "dry" both during and following completion of drilling operations , serious water problems are not anticipated. However, the accumulation of run-off water or seepage at the base of excavations should still be expected to occur during foundation 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.

5.0 CLOSURE

It is recommended that full-time technician services be provided by Testing Service Corporation personnel during pavement construction. In addition, adequacy of stripping, fill placement and compaction should be monitored for compliance with the recommended procedures and specifications.



The analysis and recommendations submitted in this report are based upon the data obtained from the thirteen (13) soil borings and twelve (12) pavement cores performed at the locations indicated on the Boring Location Plans. This report does not reflect any variations which may occur between these borings, 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.

Timothy R. Peceniak, P.E.
Project Engineer
Registered Professional Engineer
Illinois No. 062-061269

Michael V. Machalinski, P.E.
Vice President



TESTING SERVICE CORPORATION

GENERAL CONDITIONS

Geotechnical and Construction Services

1. PARTIES AND SCOPE OF WORK: 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 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: 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 materials as defined by the Resource Conservation Recovery Act, 42 U.S.C. § 6901, et. seq., as amended ("RCRA") or by any state or Federal statute or regulation. In the event that hazardous materials 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, Client's construction personnel will verify that the pad is properly located and sized to meet Client's projected building loads. 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.

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.

7. 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.

8. 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.

9. 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.

10. WARRANTY: TSC's professional services will be performed, its findings obtained and its reports prepared in accordance with these General Conditions 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 on

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.

11. 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, suits, 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 or independent contractors. In the event both TSC and Client are found to be 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 liability of TSC under this provision shall not exceed the policy limits of insurance carried by TSC. Neither TSC nor Client shall be bound under this indemnity agreement to liability determined in a proceeding in which it did not participate represented by its own independent counsel. The indemnities provided hereunder shall not terminate upon the termination or expiration of this Agreement, but may be modified to the extent of any waiver of subrogation agreed to by TSC and paid for by Client.

12. 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.

13. OTHER AGREEMENTS: TSC shall not be bound by any provision or agreement (i) requiring or providing for arbitration of disputes or controversies arising out of this Agreement or its performance, (ii) wherein TSC waives any rights to a mechanics lien or surety bond claim, (iii) that conditions TSC's right to receive payment for its services upon payment to Client by any third party or (iv) that requires TSC to indemnify any party beyond its own negligence. 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. Unless expressly accepted by TSC in writing prior to delivery of TSC's services, Client shall not add any conditions or impose conditions which are in conflict with those contained herein, and no such additional or conflicting terms shall be binding upon TSC. 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. In the event of a dispute arising out of or relating to the performance of this Agreement, the breach thereof or TSC's services, the parties agree to try in good faith to settle the dispute by mediation under the Construction Industry Mediation Rules of the American Arbitration Association as a condition precedent to filing any demand for arbitration, or any petition or complaint with any court. Should litigation be necessary, the parties 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.

APPENDIX

PAVEMENT CORE RESULT RESULTS (2)

IBR DATA SHEET

MOISTURE-DENSITY RELATIONSHIP

UNIFIED CLASSIFICATION CHART

LEGEND FOR BORING LOGS

BORING LOGS (13)

BORING LOCATION PLANS (3)

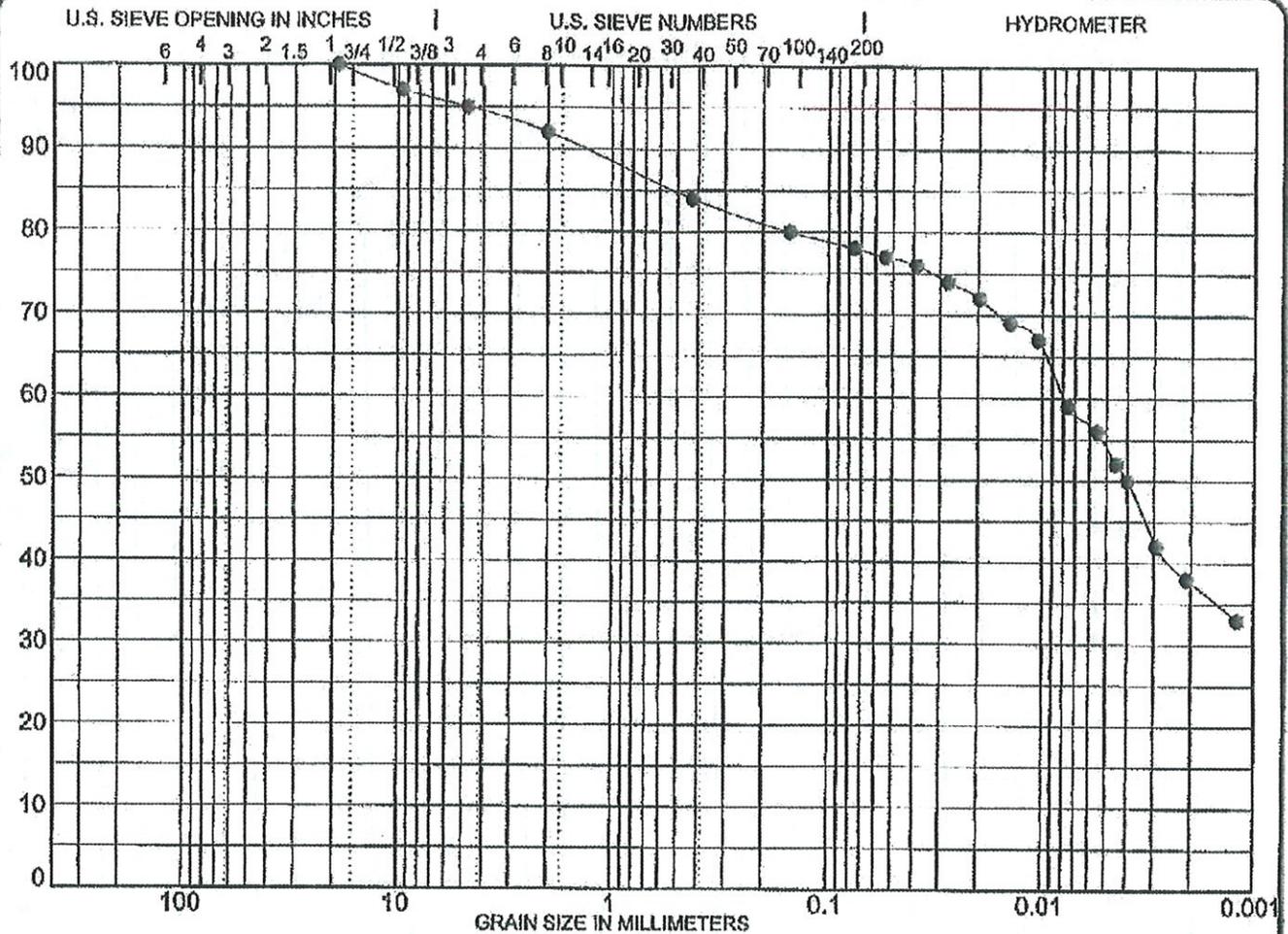
PAVEMENT CORE RESULTS

(Each component of pavement section listed from top down.)

Maple Avenue

Core 1	1.0"	Bituminous Surface Course (Not Bonded to Underlying Course)
	<u>2.1"</u>	Bituminous Binder Course
	3"	Total Bituminous Thickness
	9"	Crushed Stone Base Course (1.5" Max, no fines)
Core 2	1.4"	Bituminous Surface Course
	<u>2.0"</u>	Bituminous Binder Course
	3½"	Total Bituminous Thickness
	12"	Crushed Stone Base Course (2" Max, no fines)
Core 3	1.5"	Bituminous Surface Course
	<u>3.1"</u>	Bituminous Binder Course
	4½"	Total Bituminous Thickness
	18"	Crushed Stone Base Course (3" Max, no fines)
Core 4	2.3"	Bituminous Surface Course
	<u>1.4"</u>	Bituminous Binder Course
	3¾"	Total Bituminous Thickness
	11"	Crushed Stone Base Course (2" Max, no fines)
Core 5	2.3"	Bituminous Surface Course
	<u>2.9"</u>	Bituminous Binder Course
	5¼"	Total Bituminous Thickness
	12"	Crushed Stone Base Course (2" Max, no fines)
Core 6	2.7"	Bituminous Surface Course
	1.2"	Bituminous Binder Course
	<u>0.6"</u>	Emulsified Bituminous Concrete (Fabric Between Courses)
	4½"	Total Bituminous Thickness
	13"	Crushed Stone Base Course (3" Max, no fines)

Core 7	2.0"	Bituminous Surface Course (Not Bonded to Underlying Course)
	0.8"	Bituminous Surface Course (Not Bonded to Underlying Course)
	<u>1.2"</u>	Bituminous Surface Course
	4"	Total Bituminous Thickness
11"	Crushed Stone Base Course (2" Max, no fines)	
Core 8	1.5"	Bituminous Surface Course
	0.7"	Bituminous Binder Course
	<u>2¼"</u>	Total Bituminous Thickness
14"	Crushed Stone Base Course (3" Max, no fines)	
Core 9	1.3"	Bituminous Surface Course
	1.5"	Bituminous Binder Course
	<u>2¾"</u>	Total Bituminous Thickness
9"	Crushed Stone Base Course (3" Max, no fines)	
Core 10	2.0"	Bituminous Surface Course
	1.5"	Bituminous Binder Course
	<u>3½"</u>	Total Asphalt Thickness
9"	Crushed Stone Base Course (3" Max, no fines)	
Core 11	<u>3.0"</u>	Bituminous Surface Course
	3"	Total Bituminous Thickness
10"	Crushed Stone Base Course (3" Max, no fines)	
<u>Poplar Place</u>		
Core 101	1.7"	Bituminous Surface Course
	<u>2.3"</u>	Bituminous Binder Course
	4.0"	Total Bituminous Thickness
5"	Crushed Stone Base Course (1" to fine)	



AASHTO	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

SPECIMEN IDENTIFICATION

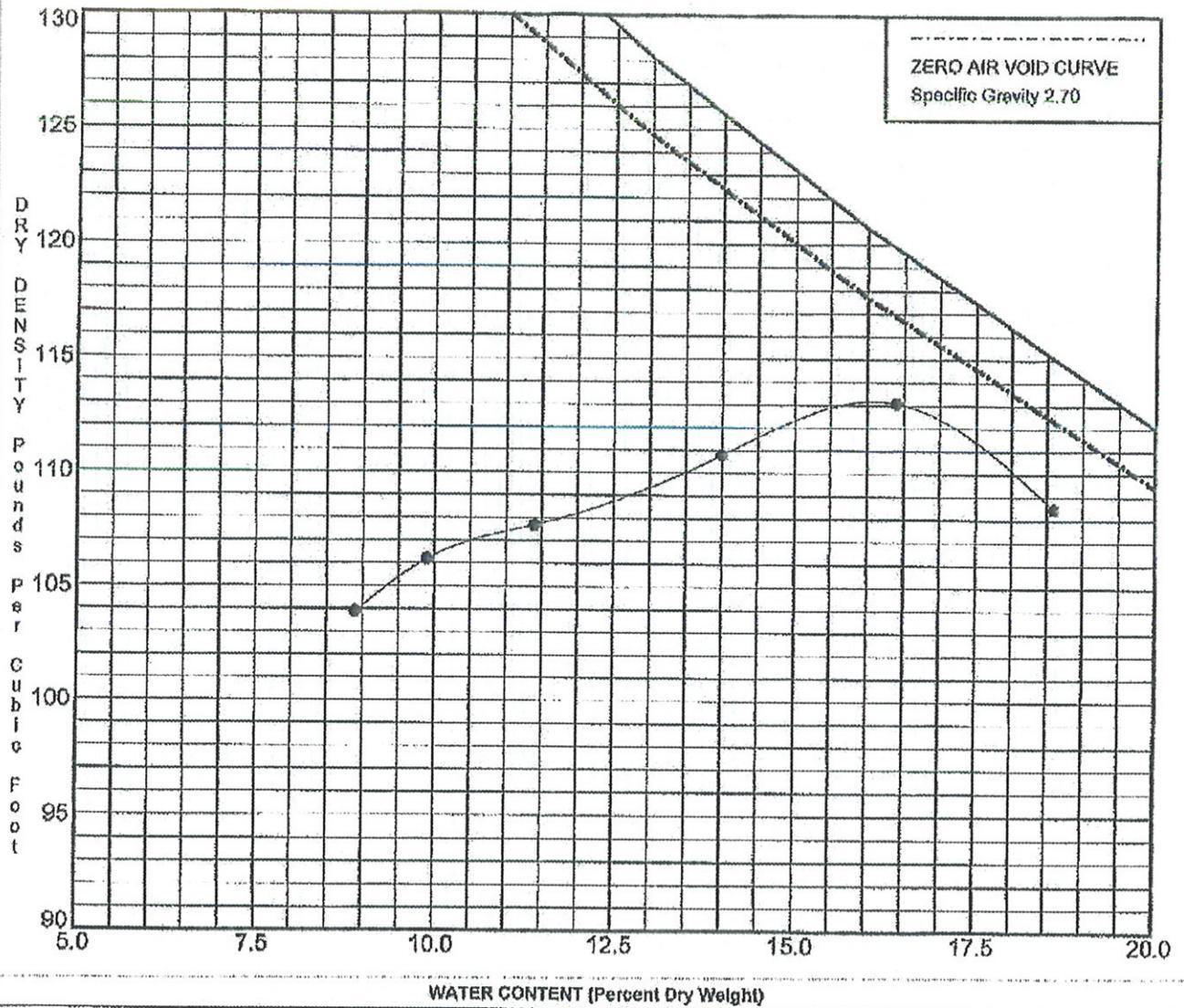
Boring: 3					A	B	
				Molded Moist %	15.9	15.9	
				Compaction %	100.2	100.2	
CLASSIFICATION				SIEVE	% PASS		
HRB & GROUP INDEX:		A-7-6(21)		3 Inch	100		
GRAIN SIZE:		CLAY		2	100		
UNIFIED:		CL		1 1/2	100		
%GRAVEL	%SAND	%SILT	%CLAY	1	100		
5	17	40	38	3/4	100		
Atterberg Limits				3/8	97		
LL	PL	PI	# 4	95	0.1" Penetration	2.8 2.9	
44	15	29	# 10	92	0.2" Penetration	2.6 2.6	
Standard Moisture/Density T99				# 40	84	0.3" Penetration	2.6 2.8
Max γ_{Wet}	Max γ_{Dry}	Opt MC%	# 100	80	0.4" Penetration	2.6 2.7	
131.4	113.2	16.1	# 200	78	0.5" Penetration	2.5 2.8	
					Illinois Bearing Ratio Value:	2.5	

PROJECT LOCATION: Maple Ave. Reconstruction & Relief Sewer
LaGrange, Illinois

JOB NO. L-76,828
DATE June 3, 2011

IBR DATA SHEET
Testing Service Corporation
Carol Stream, IL 60188

IBR NEW2 75828.CPJ TSC ALL.GDT 6/24/11



SPECIMEN IDENTIFICATION		SOIL CLASSIFICATION	
Boring: 3		Brown CLAY, A-7-6(21), CL	
MOISTURE/DENSITY RELATIONSHIP		NOTES :	
X	Standard ASTM D698/AASHTO T99		
	Modified ASTM D1557/AASHTO T180		
	Maximum Dry Density (PCF) 113.2		
	Optimum Water Content (%) 16.1		

PROJECT LOCATION: Maple Ave. Reconstruction & Relief Sewer JOB NO. L-76,828
LaGrange, Illinois DATE June 3, 2011

MOISTURE-DENSITY RELATIONSHIP
 Testing Service Corporation
 Carol Stream, IL 60188

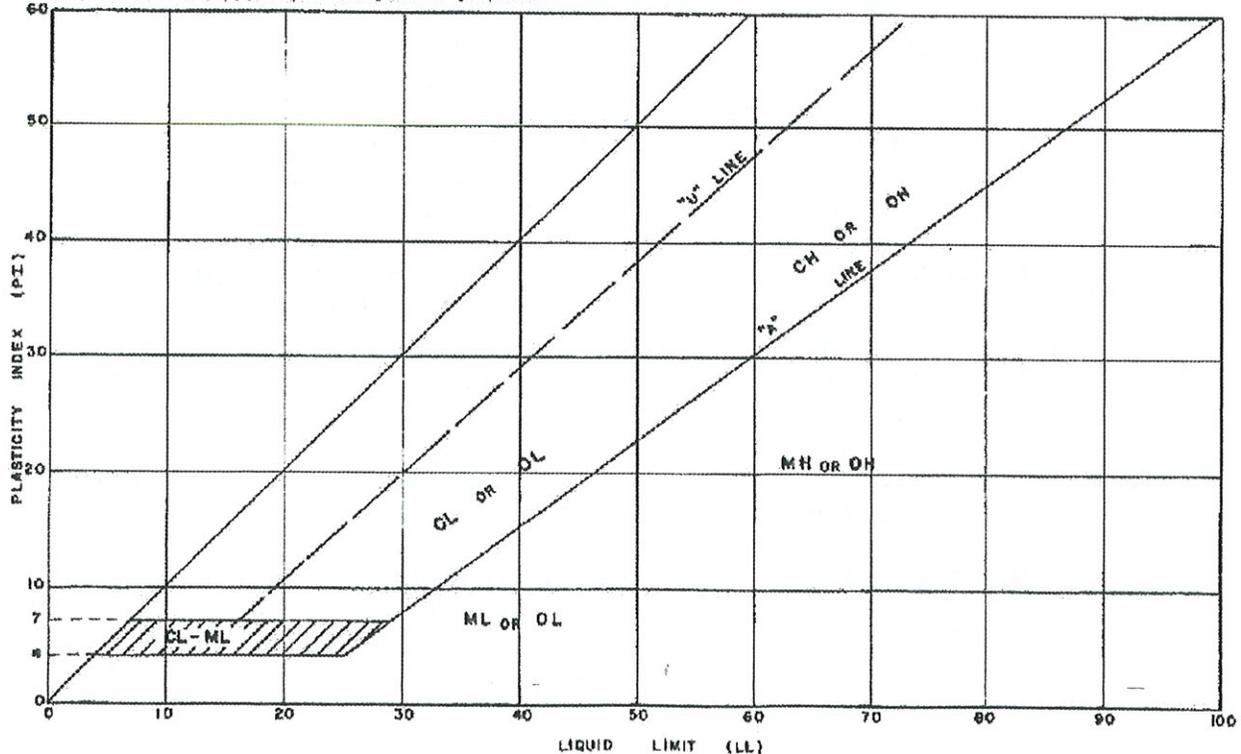
PROCTORS 76828.GPJ TSC ALL.GDT 5/24/11

**TESTING SERVICE CORPORATION
UNIFIED CLASSIFICATION CHART**

CRITERIA FOR ASSIGNING GROUP SYMBOLS AND GROUP NAMES USING LABORATORY TESTS ^a				SOIL CLASSIFICATION	
				GROUP SYMBOL	GROUP NAME ^b
COARSE-BRAINED SOILS more than 50% retained on No. 200 sieve	GRAVELS More than 50% of coarse fraction retained on No. 4 sieve	CLEAN GRAVELS Less than 5% fines ^c	$C_u \geq 4$ and $1 \leq C_c \leq 3$ ^e	GW	Well graded gravel ^f
			$C_u < 4$ and/or $1 > C_c > 3$ ^e	GP	Poorly graded gravel ^f
		GRAVELS WITH FINES More than 12% fines ^c	Fines classify as ML or MH	GM	Silty gravel ^{f,g,h}
			Fines classify as CL or CH	GC	Clayey gravel ^{f,g,h}
	SANDS 50% or more of coarse fraction passes No. 4 sieve	CLEAN SANDS Less than 5% fines ^d	$C_u \geq 6$ and $1 \leq C_c \leq 5$ ^e	SW	Well-graded sand ^f
			$C_u < 6$ and/or $1 > C_c > 5$ ^e	SP	Poorly graded sand ^f
		SANDS WITH FINES More than 12% fines ^d	Fines classify as ML or MH	SM	Silty sand ^{f,g,h,i}
			Fines classify as CL or CH	SC	Clayey sand ^{f,g,h,i}
FINE-BRAINED SOILS 50% or more passed the No. 200 sieve	SILTS & CLAYS Liquid limit less than 50%	Inorganic	PI ≥ 7 and plots on or above "A" line ^j	CL	Lean clay ^{k,l,m}
			PI < 4 or plots below "A" line ^j	ML	Silt ^{k,l,m}
	SILTS & CLAYS Liquid limit 50% or more	Inorganic	PI plots on or above "A" line	CH	Fat clay ^{k,l,m}
			PI plots below "A" line	MH	Elastic silt ^{k,l,m}
	SILTS & CLAYS Liquid limit 50% or more	Organic	$\frac{\text{Liquid limit} - \text{oven dried}}{\text{Liquid limit} - \text{not dried}} \leq 0.75$	OL	Organic clay ^{k,l,m,n} Organic silt ^{k,l,m,o}
			Highly organic soils	Primarily organic matter, dark in color, and organic odor	PT

- a. Based on the material passing the 3-in (75-mm) sieve.
b. If field sample contained cobbles and/or boulders, add "with cobbles and/or boulders" to group name.
c. Gravels with 5 to 12% fines require dual symbols
GW-GM well graded gravel with silt
SW-GC well graded gravel with clay
GP-GM poorly graded gravel with silt
GP-GC poorly graded gravel with clay
d. Sands with 5% to 12% fines require dual symbols
SW-SM well graded sand with silt
SW-SC well graded sand with clay
SP-SM poorly graded sand with silt
SP-SC poorly graded sand with clay
e. $C_u = D_{60}/D_{10}$ $C_c = \frac{(D_{30})^2}{D_{10} \times D_{60}}$
f. If soil contains $\geq 15\%$ sand, add "with sand" to group name.
g. If fines classify as CL-MH, use dual symbol GC-GM, SC-SM.
h. If fines are organic, add "with organic fines" to group name.
i. If soil contains $\geq 15\%$ gravel, add "with gravel" to group name.

- j. If Atterberg Limits plot in hatched area, soil is a CL-ML, silty clay.
k. If soil contains 15 to 25% plus No. 200, add "with sand" or "with gravel" whichever is predominant.
l. If soil contains $\geq 30\%$ plus No. 200, predominantly sand, add "sandy" to group name.
m. If soil contains $\geq 30\%$ plus No. 200, predominantly gravel, add "gravelly" to group name.
n. PI ≥ 4 and plots on or above "A" line.
o. PI ≥ 4 or plots below "A" line.
p. PI plots on or above "A" line.
q. PI plots below "A" line.



TESTING SERVICE CORPORATION

LEGEND FOR BORING LOGS



FILL



TOPSOIL



PEAT



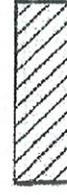
GRAVEL



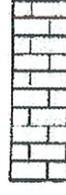
SAND



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 Foot
 Wc = In-Situ Water Content
 Qu = Unconfined Compressive Strength in Tons per Square Foot
 * Pocket Penetrometer Measurement; Maximum Reading = 4.5 tsf
 γ_D = Dry Unit Weight in Pounds per Cubic Foot

WATER LEVELS:

▽ While Drilling
 ▽ End of Boring
 ▼ 24 Hours

SOIL DESCRIPTION:

MATERIAL

BOULDER
 COBBLE
 Coarse GRAVEL
 Small GRAVEL
 Coarse SAND
 Medium SAND
 Fine SAND
 SILT and CLAY

PARTICLE SIZE RANGE

Over 12 inches
 12 inches to 3 inches
 3 inches to $\frac{3}{8}$ inch
 $\frac{3}{8}$ inch to No. 4 Sieve
 No. 4 Sieve to No. 10 Sieve
 No. 10 Sieve to No. 40 Sieve
 No. 40 Sieve to No. 200 Sieve
 Passing No. 200 Sieve

COHESIVE SOILS

<u>CONSISTENCY</u>	<u>Qu</u>
Very Soft	Less than 0.3
Soft	0.3 to 0.6
Stiff	0.6 to 1.0
Tough	1.0 to 2.0
Very Tough	2.0 to 4.0
Hard	4.0 and over

COHESIONLESS SOILS

<u>RELATIVE DENSITY</u>	<u>N</u>
Very Loose	0 - 4
Loose	4 - 10
Firm	10 - 30
Dense	30 - 50
Very Dense	50 and over

MODIFYING TERM

Trace
 Little
 Some

PERCENT BY WEIGHT

1 - 10
 10 - 20
 20 - 35



CLIENT **Baxter & Woodman, Inc., Mokena, IL**

BORING **1** DATE STARTED **6-2-11** DATE COMPLETED **6-2-11** JOB **L-76,828**

ELEVATIONS

GROUND SURFACE **633.3**
 END OF BORING **618.3**

WATER LEVEL OBSERVATIONS

▽ WHILE DRILLING **Dry**
 ▽ AT END OF BORING **Dry**
 ▽ 24 HOURS

DISTANCE BELOW SURFACE IN FEET	LENGTH RECOVERY	SAMPLE		N	WC	Qu	γ _{DRY}	DEPTH	ELEV.	SOIL DESCRIPTIONS
		NO.	TYPE							
0								0.3	633.0	3" Bituminous Concrete
								1.0	632.3	9" Crushed Stone Base
		1	SS	8	20.8	4.00 4.25*				Hard brown and gray silty CLAY, little sand, trace gravel, moist (CL)
		2	SS	12	21.7	4.5*				
5								5.5	627.8	Tough gray silty CLAY, little sand and gravel, occasional sand seams, moist (CL)
		3	SS	10	18.7	1.75*				
								8.0	625.3	Very dense brown and gray clayey SAND, trace gravel, occasional sand seams, moist (SC)
10		4	SS	53	7.3					
		5	SS	65	7.4					
								13.5	619.8	Weathered/Fractured Rock or Boulder Zone [Hard Drilling]
15										Auger Refusal at 15.0'
										* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.
20										
25										

Division lines between deposits represent approximate boundaries between soil types; in-situ, the transition may be gradual.

DRILL RIG NO. **315**

TSC2 78823.GPJ TSC_ALL.GDT 11/16/11



CLIENT Baxter & Woodman, Inc., Mokena, IL

BORING 2 DATE STARTED 6-2-11 DATE COMPLETED 6-2-11 JOB L-76,828

ELEVATIONS
 GROUND SURFACE 632.9
 END OF BORING 622.9

WATER LEVEL OBSERVATIONS
 ▽ WHILE DRILLING Dry
 ▽ AT END OF BORING Dry
 ▽ 24 HOURS _____

DISTANCE BELOW SURFACE IN FEET	LENGTH RECOVERY	SAMPLE		N	WC	Qu	Y DRY	DEPTH	ELEV.	SOIL DESCRIPTIONS
		NO.	TYPE							
0								0.3	632.6	3 1/2" Bituminous Concrete
								1.3	631.6	12" Crushed Stone Base
1		1	SS	7	18.8	4.5+*				Very tough to hard brown and gray silty CLAY, little sand, trace gravel, moist (CL)
2		2	SS	11	20.4	3.5*				
3		3	SS	15	18.4	4.5+*				
4		4	SS	100/2"				8.5	624.4	Weathered/Fractured Bedrock or Possible Boulder Zone [Hard Drilling]
10										Auger Refusal at 10.0'
15										* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.
20										
25										

TSC2 76828.GPJ TSC_ALL.GDT 11/16/11

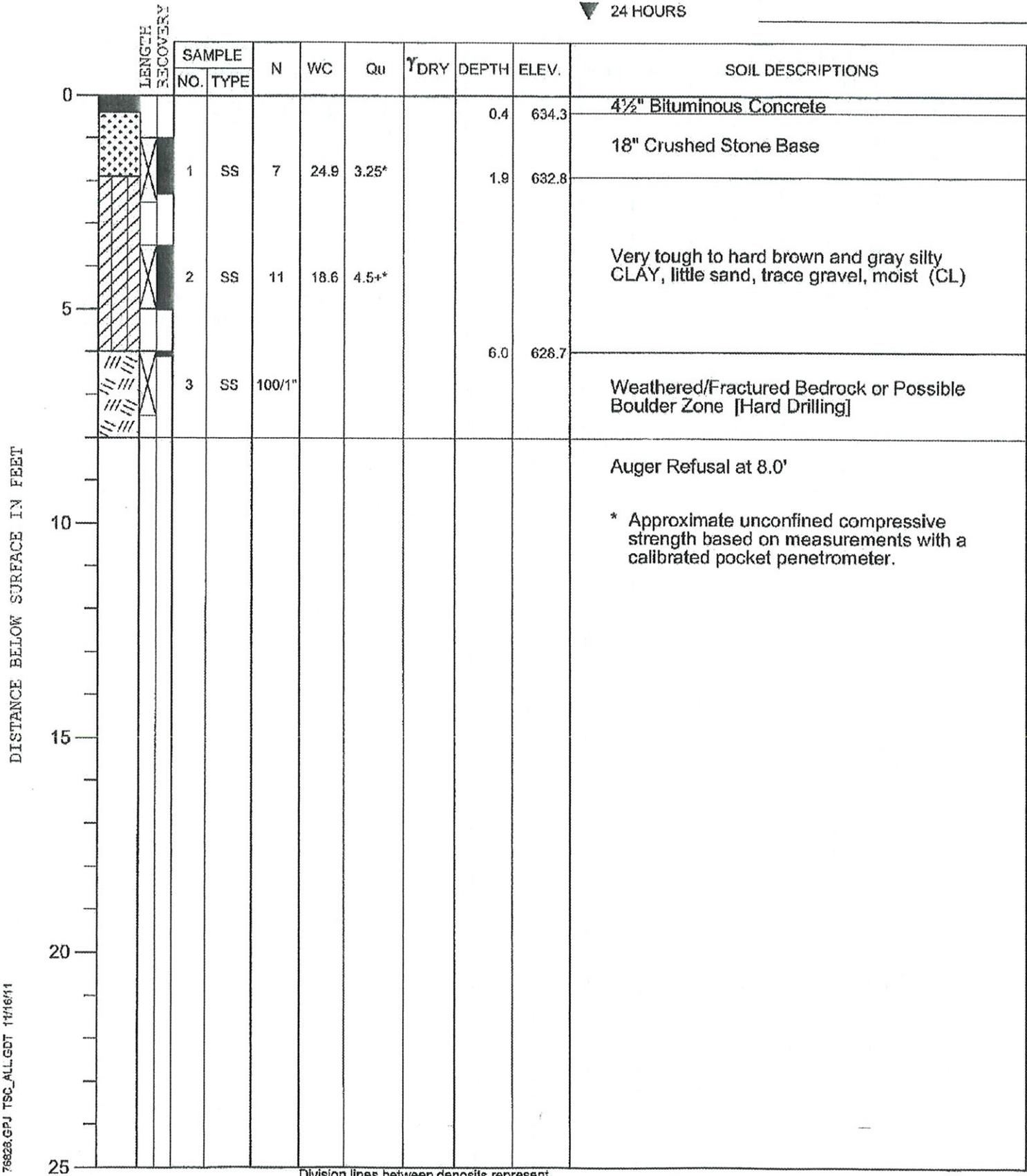
DRILL RIG NO. 315

Division lines between deposits represent approximate boundaries between soil types; in-situ, the transition may be gradual.



ELEVATIONS
 GROUND SURFACE 634.7
 END OF BORING 626.7

WATER LEVEL OBSERVATIONS
 ▽ WHILE DRILLING Dry
 ▽ AT END OF BORING Dry
 ▽ 24 HOURS _____



DISTANCE BELOW SURFACE IN FEET

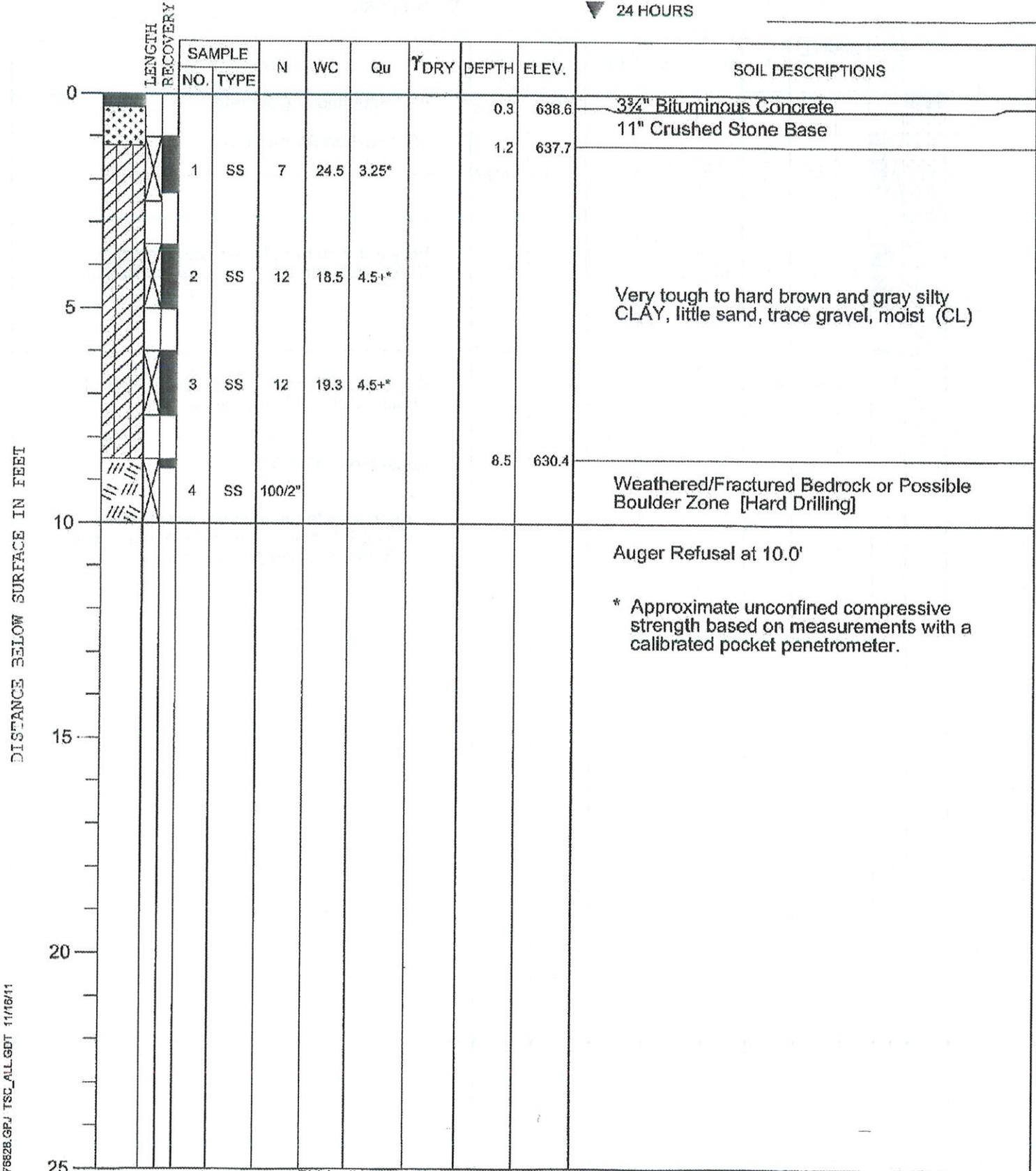
TSC2 76828.GPJ TSC_ALL.GDT 11/16/11

Division lines between deposits represent approximate boundaries between soil types; in-situ, the transition may be gradual.



ELEVATIONS
 GROUND SURFACE 638.9
 END OF BORING 628.9

WATER LEVEL OBSERVATIONS
 ▼ WHILE DRILLING Dry
 ▼ AT END OF BORING Dry
 ▼ 24 HOURS _____



TSC2 76828.GPJ TSC_ALL.GDT 11/16/11

Division lines between deposits represent approximate boundaries between soil types; in-situ, the transition may be gradual.

* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.

PROJECT **Maple Ave. Reconstruction & Relief Sewer, Bluff Ave. to LaGrange Rd., LaGrange, IL**



CLIENT **Baxter & Woodman, Inc., Mokena, IL**

BORING **5** DATE STARTED **6-2-11** DATE COMPLETED **6-2-11** JOB **L-76,828**

ELEVATIONS
 GROUND SURFACE **640.5**
 END OF BORING **630.5**

WATER LEVEL OBSERVATIONS
 ▽ WHILE DRILLING **Dry**
 ▽ AT END OF BORING **Dry**
 ▽ 24 HOURS

DISTANCE BELOW SURFACE IN FEET	LENGTH RECOVERY	SAMPLE		N	WC	Qu	γ _{DRY}	DEPTH	ELEV.	SOIL DESCRIPTIONS
		NO.	TYPE							
0								0.4	640.1	5 1/4" Bituminous Concrete
								1.4	639.1	12" Crushed Stone Base
1		1	SS	7	26.4	3.0*				Very tough to hard brown and gray silty CLAY, little sand, trace gravel, moist (CL)
2		2	SS	16	18.9	4.5+*				
3		3	SS	18	20.4	4.5+*				
4		4	SS	100/1"				8.5	632.0	Weathered/Fractured Bedrock or Possible Boulder Zone [Hard Drilling]
10										Auger Refusal at 10.0'
15										* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.
20										
25										

Division lines between deposits represent approximate boundaries between soil types; in-situ, the transition may be gradual.

TSC2 78828.GPJ TSC_ALL.GDT 11/6/11

DRILL RIG NO. **315**

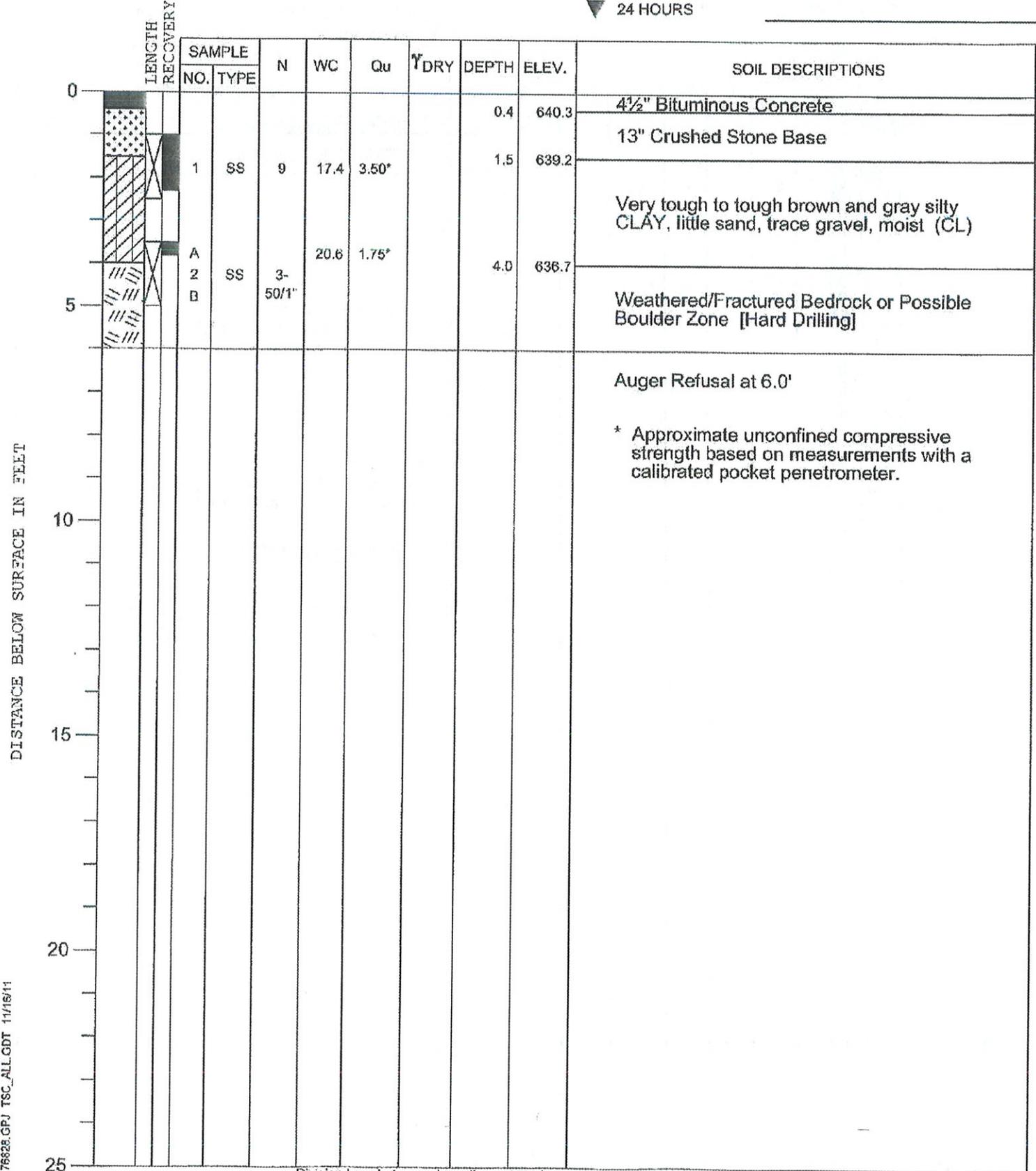


CLIENT Baxter & Woodman, Inc., Mokena, IL

BORING 6 DATE STARTED 6-2-11 DATE COMPLETED 6-2-11 JOB L-76,828

ELEVATIONS
 GROUND SURFACE 640.7
 END OF BORING 634.7

WATER LEVEL OBSERVATIONS
 ▽ WHILE DRILLING Dry
 ▽ AT END OF BORING Dry
 ▽ 24 HOURS _____



DISTANCE BELOW SURFACE IN FEET

Division lines between deposits represent approximate boundaries between soil types; in-situ, the transition may be gradual.

DRILL RIG NO. 315

PROJECT Maple Ave. Reconstruction & Relief Sewer, Bluff Ave. to LaGrange Rd., LaGrange, IL

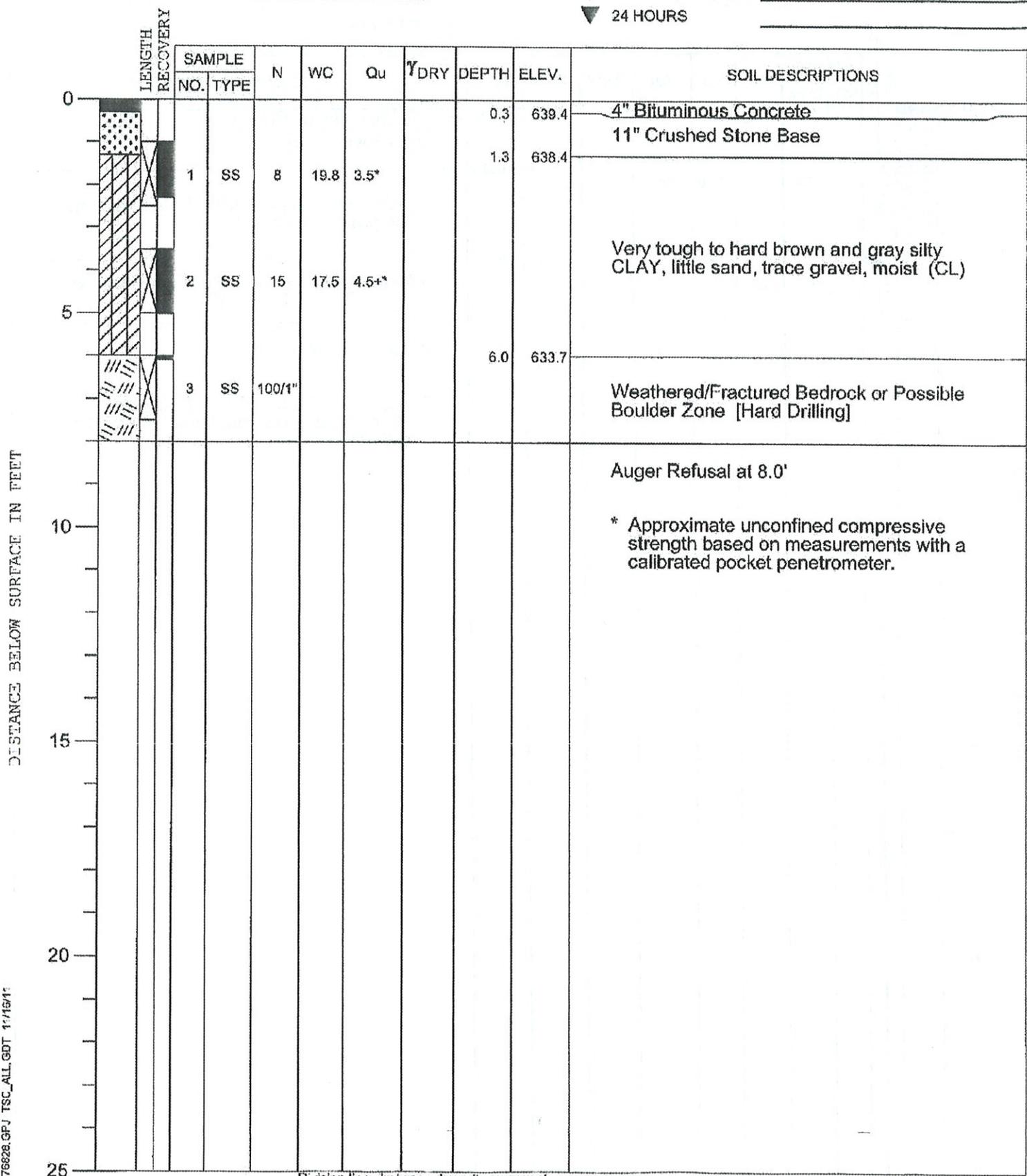


CLIENT Baxter & Woodman, Inc., Mokena, IL

BORING 7 DATE STARTED 6-2-11 DATE COMPLETED 6-2-11 JOB L-76,828

ELEVATIONS
 GROUND SURFACE 639.7
 END OF BORING 631.7

WATER LEVEL OBSERVATIONS
 ▽ WHILE DRILLING Dry
 ▽ AT END OF BORING Dry
 ▽ 24 HOURS _____



DISTANCE BELOW SURFACE IN FEET

TSC2 76828.GPJ TSC_ALL.GDT 11/16/11

DRILL RIG NO. 315

Division lines between deposits represent approximate boundaries between soil types; in-situ, the transition may be gradual.

* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.

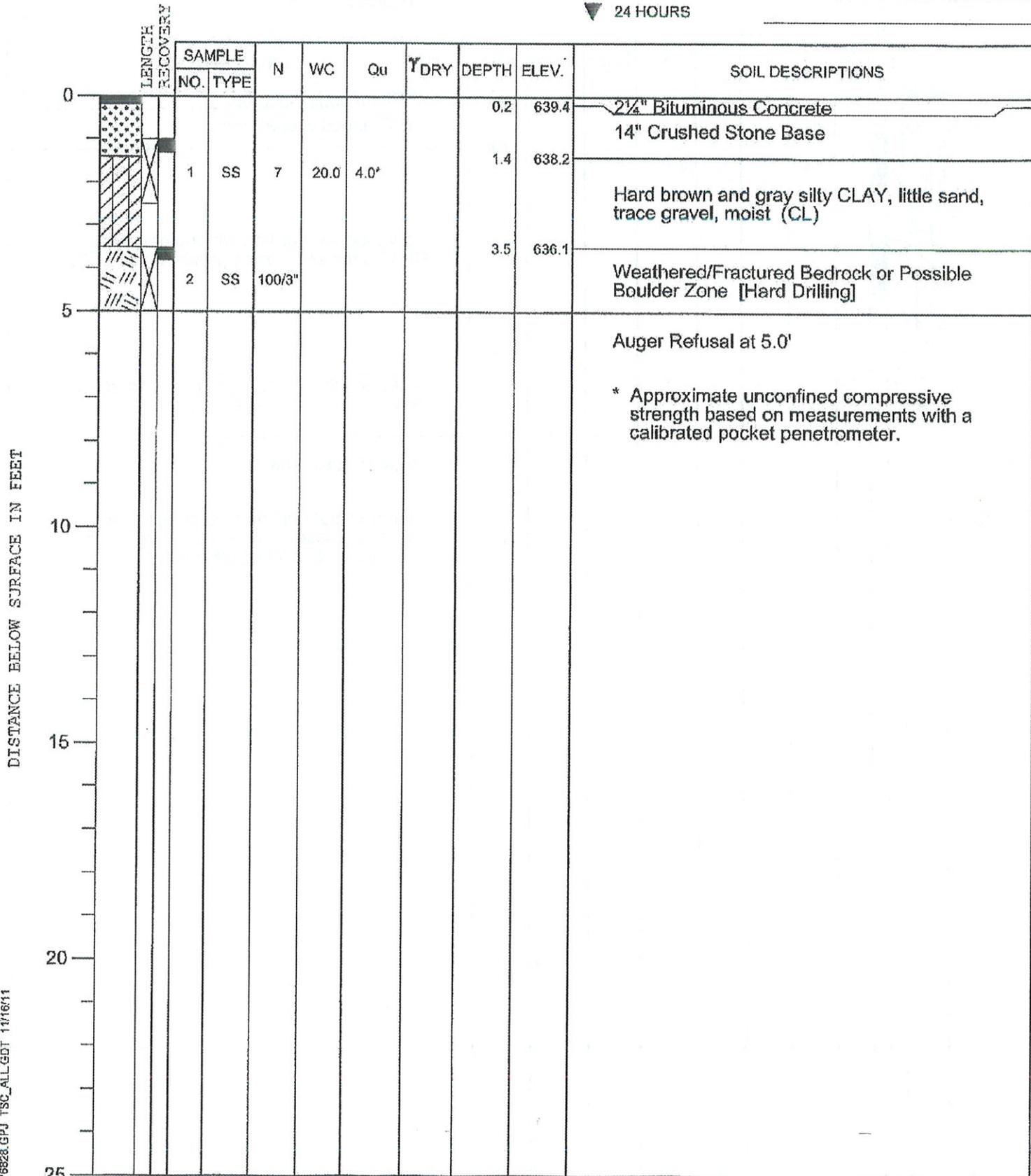


CLIENT Baxter & Woodman, Inc., Mokena, IL

BORING 8 DATE STARTED 6-2-11 DATE COMPLETED 6-2-11 JOB L-76,828

ELEVATIONS
 GROUND SURFACE 639.6
 END OF BORING 634.6

WATER LEVEL OBSERVATIONS
 ▽ WHILE DRILLING Dry
 ▽ AT END OF BORING Dry
 ▽ 24 HOURS _____



DISTANCE BELOW SURFACE IN FEET

TSC2 76828.GPJ TSC_ALL.GDT 11/16/11

DRILL RIG NO. 315

Division lines between deposits represent approximate boundaries between soil types; in-situ, the transition may be gradual.

* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.

PROJECT Maple Ave. Reconstruction & Relief Sewer, Bluff Ave. to LaGrange Rd., LaGrange, GA



CLIENT Baxter & Woodman, Inc., Mokena, IL

BORING 9 DATE STARTED 6-2-11 DATE COMPLETED 6-2-11 JOB L-76,828

ELEVATIONS
 GROUND SURFACE 638.7
 END OF BORING 633.7

WATER LEVEL OBSERVATIONS
 ▽ WHILE DRILLING Dry
 ▽ AT END OF BORING Dry
 ▽ 24 HOURS _____

DISTANCE BELOW SURFACE IN FEET	LENGTH RECOVERY	SAMPLE		N	WC	Qu	γ _{DRY}	DEPTH	ELEV.	SOIL DESCRIPTIONS
		NO.	TYPE							
0								0.2	638.5	2 3/4" Bituminous Concrete
								1.0	637.7	9" Crushed Stone Base
		1	SS	7	24.6	2.75*				Very tough brown and gray silty CLAY, little sand, trace gravel, moist (CL)
		2	SS	100/4"				3.5	635.2	Weathered/Fractured Bedrock or Possible Boulder Zone [Hard Drilling]
5										Auger Refusal at 5.0'
10										
15										
20										
25										

* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.

Division lines between deposits represent approximate boundaries between soil types; in-situ, the transition may be gradual.

DISTANCE BELOW SURFACE IN FEET

TSC2 76828.GPJ TSC_ALL.GDT 11/6/11

DRILL RIG NO. 315



ELEVATIONS
 GROUND SURFACE 638.4
 END OF BORING 630.4

WATER LEVEL OBSERVATIONS
 ▽ WHILE DRILLING Dry
 ▽ AT END OF BORING Dry
 ▽ 24 HOURS _____

DISTANCE BELOW SURFACE IN FEET	LENGTH RECOVERY	SAMPLE		N	WC	Qu	γ _{DRY}	DEPTH	ELEV.	SOIL DESCRIPTIONS
		NO.	TYPE							
0								0.3	638.1	3 1/2" Bituminous Concrete
								1.0	637.4	9" Crushed Stone Base
		1	SS	8	23.8	3.0*				Very tough brown and gray silty CLAY, little sand, trace gravel, moist (CL)
5		2	SS	10	28.8	2.5*				
		A			21.3	3.5*				
		3	SS	4-				6.5	631.9	Weathered/Fractured Bedrock or Possible Boulder Zone [Hard Drilling]
		B		50/2"						
10										Auger Refusal at 8.0'
15										* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.
20										
25										

Division lines between deposits represent approximate boundaries between soil types; in-situ, the transition may be gradual.



CLIENT **Baxter & Woodman, Inc., Mokena, IL**

BORING **11** DATE STARTED **6-3-11** DATE COMPLETED **6-3-11** JOB **L-76,828**

ELEVATIONS
 GROUND SURFACE **638.8**
 END OF BORING **630.8**

WATER LEVEL OBSERVATIONS
 ▽ WHILE DRILLING **Dry**
 ▽ AT END OF BORING **Dry**
 ▽ 24 HOURS

DISTANCE BELOW SURFACE IN FEET	LENGTH RECOVERY	SAMPLE		N	WC	Qu	γ _{DRY}	DEPTH	ELEV.	SOIL DESCRIPTIONS
		NO.	TYPE							
0								0.3	638.5	3" Bituminous Concrete
								1.1	637.7	10" Crushed Stone Base
		1	SS	9	23.1	3.0*				Very tough black silty CLAY, little sand, trace gravel, trace organic, moist (CL)
5		2	SS	5	23.2	2.5*		3.0	635.8	Very tough brown and gray silty CLAY, little sand, trace gravel, moist (CL)
		3	SS	100/2"				6.0	632.8	Weathered/Fractured Bedrock or Possible Boulder Zone [Hard Drilling]
10										Auger Refusal at 8.0'
15										
20										
25										

* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.

Division lines between deposits represent approximate boundaries between soil types; in-situ, the transition may be gradual.

TSC2 76828.GPJ TSC_ALL.GDT 11/16/11

DRILL RIG NO. **315**

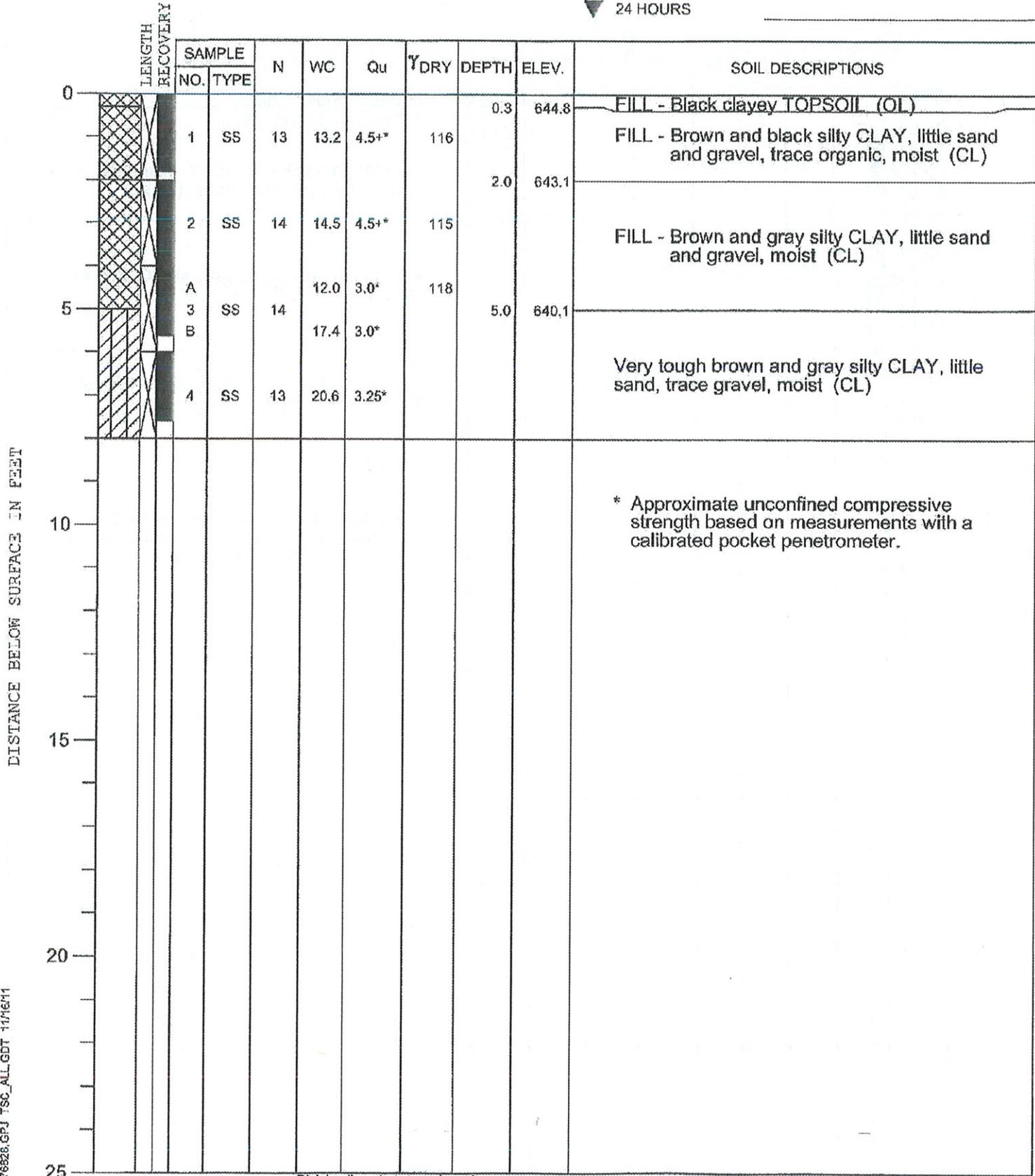


CLIENT **Baxter & Woodman, Inc., Mokena, IL**

BORING **101** DATE STARTED **6-8-11** DATE COMPLETED **6-8-11** JOB **L-76,828**

ELEVATIONS
 GROUND SURFACE **645.1**
 END OF BORING **637.1**

WATER LEVEL OBSERVATIONS
 ▽ WHILE DRILLING **Dry**
 ▽ AT END OF BORING **Dry**
 ▽ 24 HOURS



* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.

Division lines between deposits represent approximate boundaries between soil types; in-situ, the transition may be gradual.

TSC2 76828.GPJ TSC_ALL.GDT 11/6/11

DRILL RIG NO. **262**

PROJECT Maple Ave. Reconstruction & Relief Sewer, Bluff Ave. to LaGrange Rd., LaGrange, IL

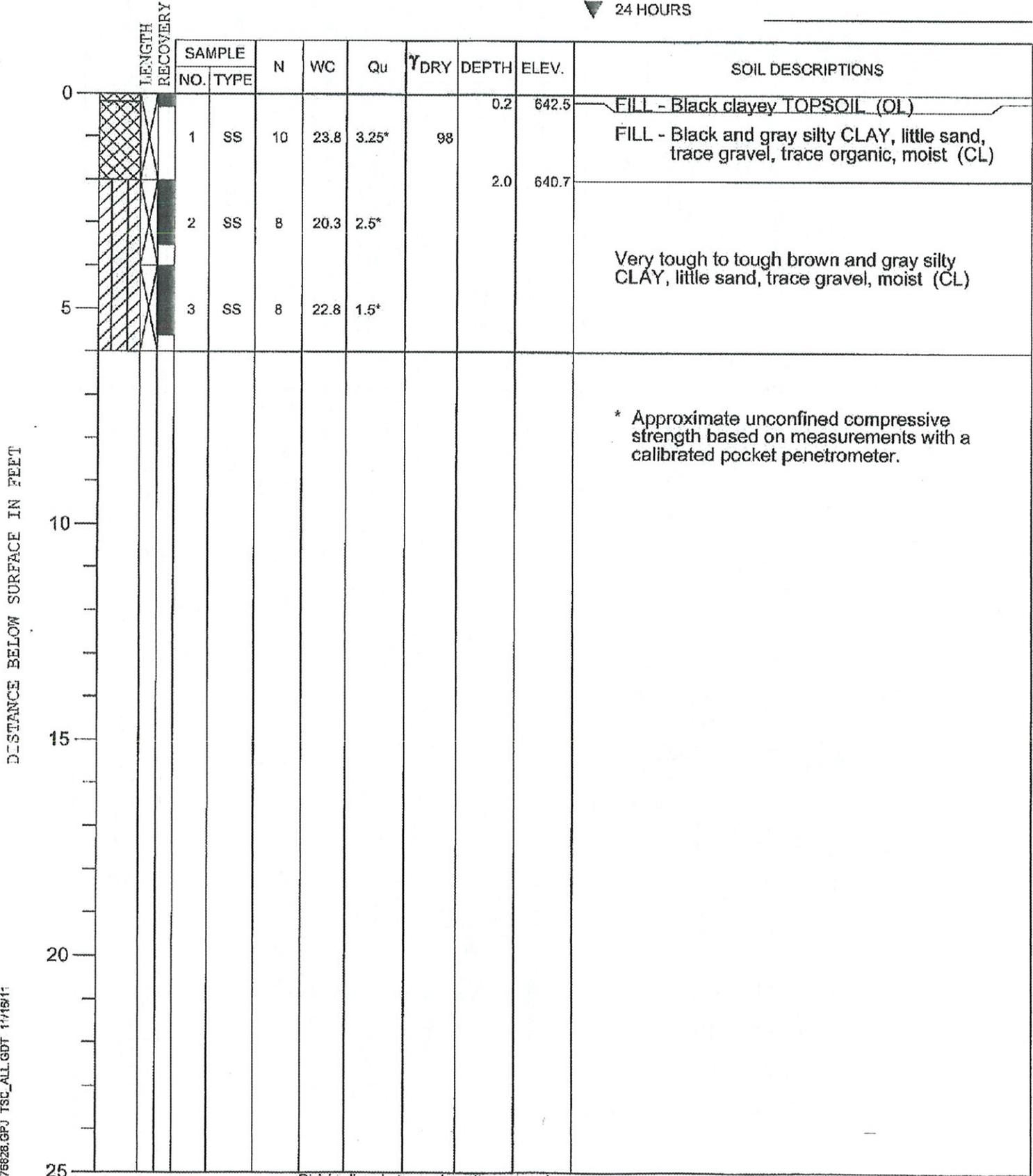


CLIENT Baxter & Woodman, Inc., Mokena, IL

BORING 102 DATE STARTED 6-8-11 DATE COMPLETED 6-8-11 JOB L-76,82B

ELEVATIONS
 GROUND SURFACE 642.7
 END OF BORING 636.7

WATER LEVEL OBSERVATIONS
 ▽ WHILE DRILLING Dry
 ▽ AT END OF BORING Dry
 ▽ 24 HOURS _____

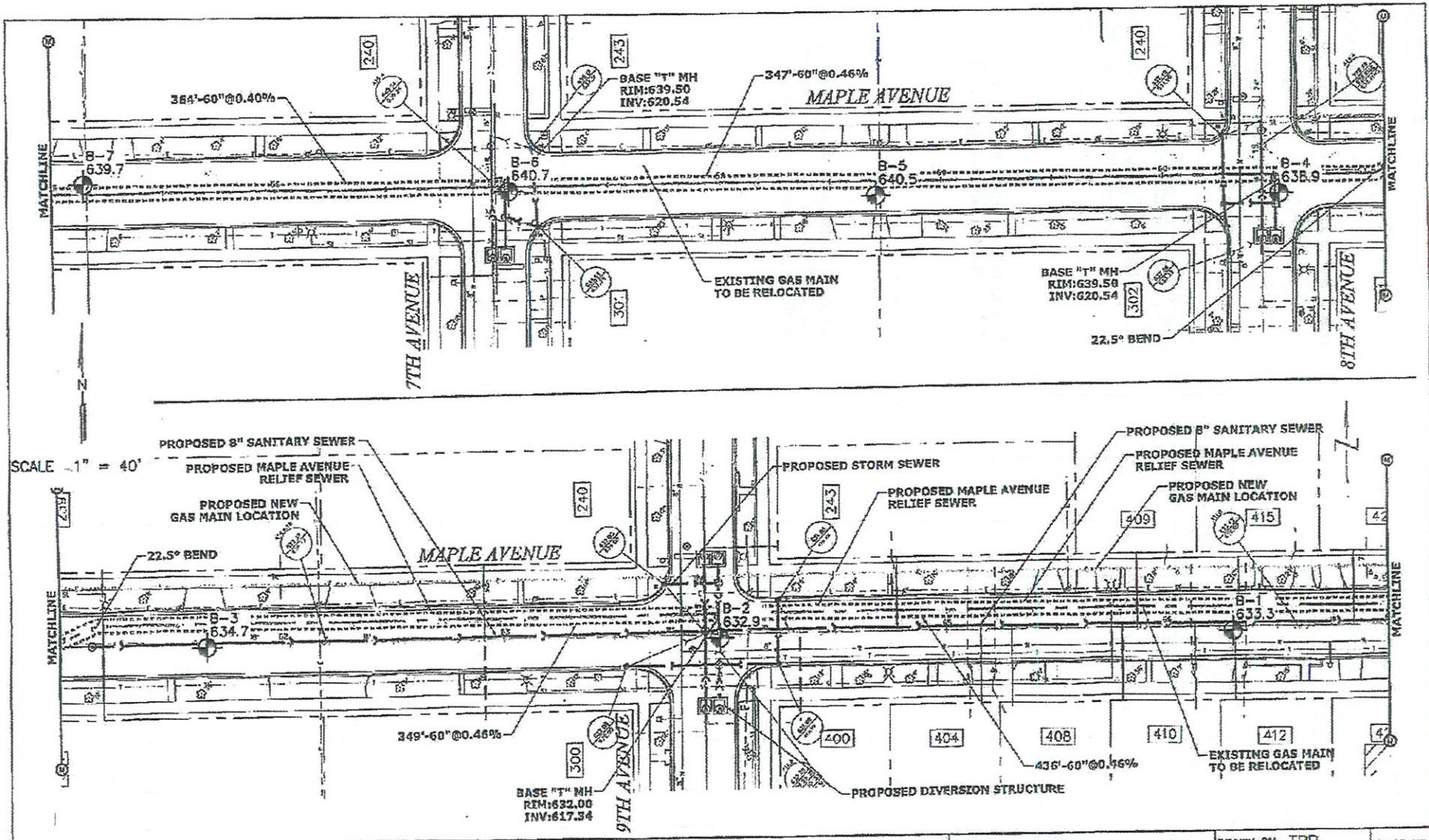


DISTANCE BELOW SURFACE IN FEET

TSC2 76828.GPJ TSC_ALL.GDT 11/16/11

DRILL RIG NO. 262

Division lines between deposits represent approximate boundaries between soil types; in-situ, the transition may be gradual.



NOTE: BORING ELEVATIONS AT THE BORING LOCATIONS PROVIDED BY BAXTER AND WOODMAN, INC.

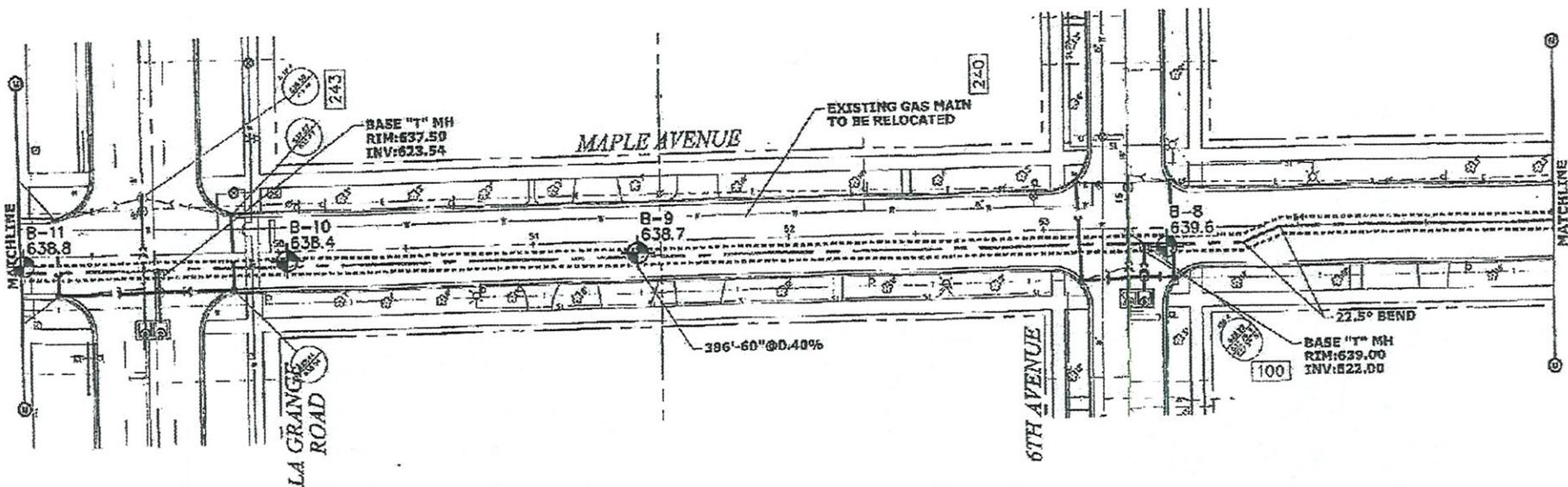
LEGEND
 SOIL BORING LOCATION

BORING LOCATION PLAN
 MAPLE AVENUE RECONSTRUCTION AND RELIEF SEWER
 BLUFF AVENUE TO I.A. GRANGE ROAD
 LA GRANGE, ILLINOIS

TSC TESTING SERVICE CORPORATION
 457 EAST GUNDERSEN DRIVE
 CAROL STREAM, ILLINOIS 60188

DRAWN BY: TRP	PAGE NO.
CHECKED BY: MVM	1 OF 3
JOB NO.: L-76,828	
DATE: 06-20-11	

SCALE 1" = 40'



NOTE: BORING ELEVATIONS AT THE BORING LOCATIONS PROVIDED BY BAXTER AND WOODMAN, INC.

LEGEND
 SOIL BORING LOCATION

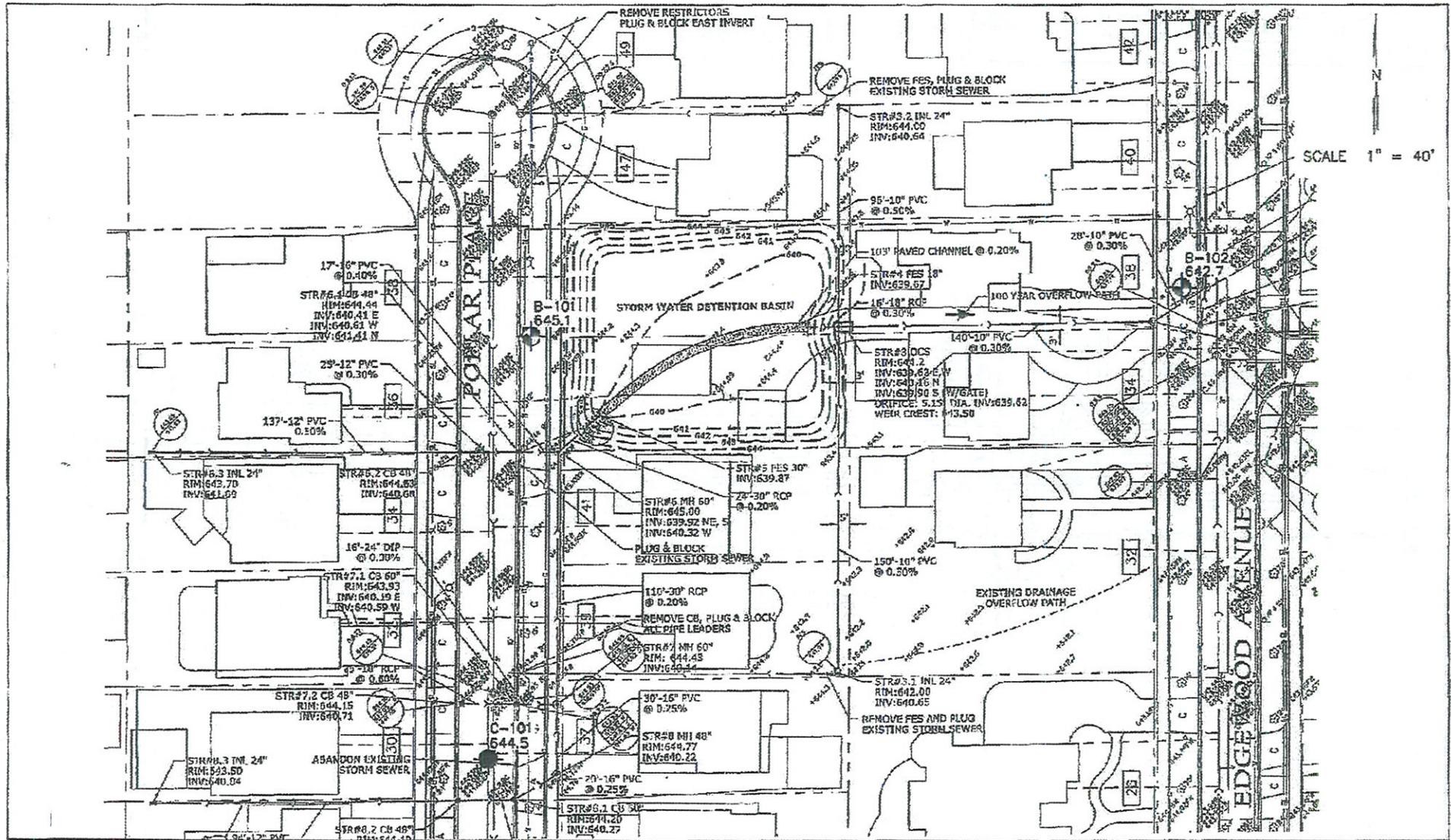
BORING LOCATION PLAN
 MAPLE AVENUE RECONSTRUCTION AND RELIEF SEWER
 BLUFF AVENUE TO LA GRANGE ROAD
 LA GRANGE, ILLINOIS



TESTING SERVICE CORPORATION
 457 EAST GUNDERSEN DRIVE
 CAROL STREAM, ILLINOIS 60188

DRAWN BY: TRP
 CHECKED BY: MVM
 JOB NO. : L-76,828
 DATE: 06-20-11

PAGE NO.
 2 OF 3



SCALE 1" = 40'

NOTE: BORING ELEVATIONS AT THE BORING LOCATIONS PROVIDED BY BAXTER AND WOODMAN, INC.

LEGEND
 SOIL BORING LOCATION
 CORE LOCATION

BORING LOCATION PLAN
 MAPLE AVENUE RECONSTRUCTION AND RELIEF SEWER
 BLUFF AVENUE TO LA GRANGE ROAD
 LA GRANGE, ILLINOIS

TSC TESTING SERVICE CORPORATION
 457 EAST GUNDERSEN DRIVE
 CAROL STREAM, ILLINOIS 60188

DRAWN BY: TRP
 CHECKED BY: MVM
 JOB NO.: L-76,828
 DATE: 06-20-11

PAGE NO.
 3 OF 3

**Supplemental
Rock Cores**

Maple Avenue Relief Sewer

Bluff Ave to La Grange Rd

LaGrange, Illinois

**Baxter & Woodman,
Inc.**



TESTING SERVICE CORPORATION

Corporate Office:

360 S. Main Place, Carol Stream, IL 60188-2404
630.462.2600 • Fax 630.653.2988

Local Office:

457 E. Gundersen Drive, Carol Stream, IL 60188-2492
630.653.3920 • Fax 630.653.2726

Local Office
June 22, 2012

Mr. Anthony S. Anczer
Baxter & Woodman, Inc.
8840 West 192nd Street
Mokena, Illinois 60448

Re: L-78,489
Supplemental Rock Cores
Maple Avenue Relief Sewer
Bluff Avenue to La Grange Road
LaGrange, Illinois

Dear Mr. Anczer:

This report presents results of the supplemental rock cores taken for the new Maple Avenue relief sewer in LaGrange, Illinois. It serves as an addendum to our original geotechnical report for this project, under TSC Job No. L-76,828 and dated July 6, 2011. These geotechnical services are being provided in accordance with TSC Proposal No. 47,488 as revised March 14, 2012 and the attached General Conditions, incorporated herein by reference. The rock cores were requested in order to determine the quality/condition of the bedrock materials encountered during our initial investigation.

Site Description

The project limits for Maple Avenue extend for approximately 1,970 lf from Sta. 49+00 to 68+71, i.e. LaGrange Road to Bluff Avenue. The roadway currently consists of 2 lanes of asphalt pavement with curb and gutter. Maple Avenue is to be reconstructed in connection with the installation of a new relief sewer. The storm sewer will be 60 inch in diameter. Plans provided by Baxter & Woodman have sewer inverts ranging from Elevation to 615.5 to 623.5, i.e. approximately 15 to 20 feet below existing grade.

Field Investigation and Laboratory Testing

Borings 1-11 were drilled as part of the original investigation for the proposed relief sewer. A total of five (5) supplemental rock cores were taken at Borings 201, 203, 206, 209 and 211 (5 total), i.e. at original Borings 1, 3, 6, 9 and 11. The borings were blind drilled to the rock surface approximately 3 to 15 feet below existing grade with rock then being cored for 10 to 25 feet. Reference is made to the Boring Location Plan included with this report. Photographs for each rock core sample are included in the appendix for reference.

Once rock was encountered, the boreholes were cased using NW steel casing with an impregnated diamond bit. The interior space of the casing was cleaned out and the boring was advanced using an NWD-4 core barrel (2 inch diameter rock core). The rock cores were logged by a geologist, with recovery and Rock Quality Designation (RQD) calculated, i.e. the sum of the lengths of sound core pieces greater than 4 inches divided by the core run length. Unconfined compressive tests were also performed on intact specimens from the cores.



Reference is made to the attached boring logs indicating 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 on the boring logs, the actual transition between soil layers may be more gradual.

Rock Core Summary

Summarized in the following table are the rock cores taken at Borings 201, 203, 206, 209 and 211 (6 total) along with the depth range for each run. The percentage of rock recovered and the rock quality designation (RQD) are also indicated in the table. In addition unconfined compression tests were run on intact samples of the dolomite rock.

Boring No.	Run No.	Depth Range (feet)	Recovery (%)		RQD (%)		Compressive Strength (psi)
			Per Run	Average	Per Run	Average	
201	1	15' - 18'	66	72	10	36	#
	2	18' - 22'	66		38		5,000
	3	22' - 23'	100		42		#
	4	23' - 25'	80		67		6,500
203	1	6' - 11'	100	100	0	18	#
	2	11' - 13'	100		17		4,000
	3	13' - 16'	100		0		#
	4	16' - 22'	100		27		6,000
	5	22' - 26'	100		42		3,000
206	1	6' - 16'	100	100	10	50	6,500
	2	16' - 21'	100		15		#
	3	21' - 26'	100		72		10,000
	4	26' - 31'	100		93		15,000
209	1	3½' - 7'	100	100	0	38	#
	2	7' - 13½'	100		7		8,500
	3	13½' - 23½'	100		71		8,000 - 14,000
211	1	6½' - 14½'	100	99	35	37	9,500
	2	14½' - 16½'	100		45		7,500
	3	16½' - 24½'	98		36		7,500 - 11,000

A compressive strength test was not able to be run on the recovered core sample.

The rock core samples taken at Borings 201, 203, 206, 209 and 211 (6 total) typically consisted of light to dark gray and tan dolomite, with a boulder zone between 13½ to 17 feet deep in Boring 201. The rock was typically thin to medium bedded, with little to some vugs, occasional clay partings and chert nodules. Sections of the recovered rock core were moderately to highly fractured as noted on the boring logs. The core samples had average recoveries ranging from 72 to 100 percent, with average Rock Quality Designation (RQD) values varying from 18 to 50 percent, indicative of a rock of very poor to fair quality. Compressive strength tests (Qu) were performed on intact core samples of the dolomite rock. The rock exhibited compressive strengths typically ranging from 3000 to 15,000 pounds per square inch (psi).

Closure

The analyses and recommendations submitted in this report are based upon the data obtained from the six (6) supplemental rock cores performed at the locations indicated on the Boring Location Plan. This report does not reflect any variations which may occur between these borings or elsewhere on the site, the nature and extent of which may not become evident until during the course of construction.

It has been a pleasure to assist you with this work. Please call if there are any questions or if we may be of further service.

Respectfully submitted,

TESTING SERVICE CORPORATION

Timothy R. Peceniak, P.E.
Project Engineer
Registered Professional Engineer
Illinois No. 062-061269

Michael V. Machalinski, P.E.
Vice President

TRP:MVM:trp



TESTING SERVICE CORPORATION

GENERAL CONDITIONS

Geotechnical and Construction Services

1. PARTIES AND SCOPE OF WORK: 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 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: 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 materials as defined by the Resource Conservation Recovery Act, 42 U.S.C. § 6901, et. seq., as amended ("RCRA") or by any state or Federal statute or regulation. In the event that hazardous materials 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, Client's construction personnel will verify that the pad is properly located and sized to meet Client's projected building loads. 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.

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.

7. 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.

8. 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.

9. 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.

10. WARRANTY: TSC's professional services will be performed, its findings obtained and its reports prepared in accordance with these General Conditions 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 on

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.

11. 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, suits, 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 or independent contractors. In the event both TSC and Client are found to be 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 liability of TSC under this provision shall not exceed the policy limits of insurance carried by TSC. Neither TSC nor Client shall be bound under this indemnity agreement to liability determined in a proceeding in which it did not participate represented by its own independent counsel. The indemnities provided hereunder shall not terminate upon the termination or expiration of this Agreement, but may be modified to the extent of any waiver of subrogation agreed to by TSC and paid for by Client.

12. 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.

13. OTHER AGREEMENTS: TSC shall not be bound by any provision or agreement (i) requiring or providing for arbitration of disputes or controversies arising out of this Agreement or its performance, (ii) wherein TSC waives any rights to a mechanics lien or surety bond claim; (iii) that conditions TSC's right to receive payment for its services upon payment to Client by any third party or (iv) that requires TSC to indemnify any party beyond its own negligence. 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. Unless expressly accepted by TSC in writing prior to delivery of TSC's services, Client shall not add any conditions or impose conditions which are in conflict with those contained herein, and no such additional or conflicting terms shall be binding upon TSC. 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. In the event of a dispute arising out of or relating to the performance of this Agreement, the breach thereof or TSC's services, the parties agree to try in good faith to settle the dispute by mediation under the Construction Industry Mediation Rules of the American Arbitration Association as a condition precedent to filing any demand for arbitration, or any petition or complaint with any court. Should litigation be necessary, the parties 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.

APPENDIX

UNIFIED CLASSIFICATION CHART

LEGEND FOR BORING LOGS

BORING LOGS (3)

ROCK CORE PHOTOS (6)

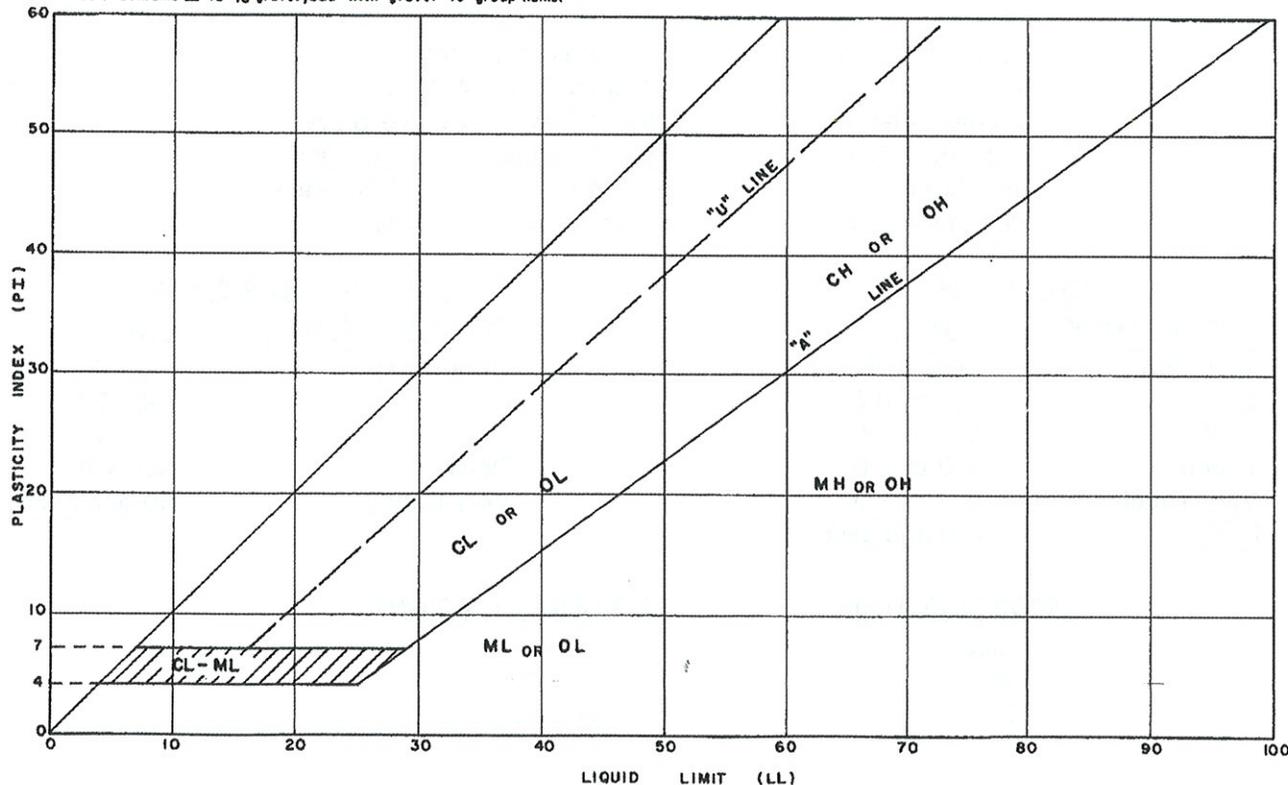
BORING LOCATION PLAN (2)

**TESTING SERVICE CORPORATION
UNIFIED CLASSIFICATION CHART**

CRITERIA FOR ASSIGNING GROUP SYMBOLS AND GROUP NAMES USING LABORATORY TESTS ^a				SOIL CLASSIFICATION	
				GROUP SYMBOL	GROUP NAME ^b
COARSE-GRAINED SOILS more than 50% retained on No. 200 sieve	GRAVELS More than 50% of coarse fraction retained on No. 4 sieve	CLEAN GRAVELS Less than 5% fines ^c	$C_u \geq 4$ and $1 \leq C_c \leq 3$ ^e	GW	Well graded gravel ^f
			$C_u < 4$ and/or $1 > C_c > 3$ ^e	GP	Poorly graded gravel ^f
		GRAVELS WITH FINES More than 12% fines ^c	Fines classify as ML or MH	GM	Silty gravel ^{f,g,h}
			Fines classify as CL or CH	GC	Clayey gravel ^{f,g,h}
	SANDS 50% or more of coarse fraction passes No. 4 sieve	CLEAN SANDS Less than 5% fines ^d	$C_u \geq 6$ and $1 \leq C_c \leq 3$ ^e	SW	Well-graded sand ⁱ
			$C_u < 6$ and/or $1 > C_c > 3$ ^e	SP	Poorly graded sand ⁱ
		SANDS WITH FINES More than 12% fines ^d	Fines classify as ML or MH	SM	Silty sand ^{g,h,f}
			Fines classify as CL or CH	SC	Clayey sand ^{g,h,f}
FINE-GRAINED SOILS 50% or more passed the No. 200 sieve	SILTS & CLAYS Liquid limit less than 50%	Inorganic	$PI \geq 7$ and plots on or above "A" line ^j	CL	Lean clay ^{k,l,m}
			$PI \leq 4$ or plots below "A" line ^j	ML	Silt ^{k,l,m}
		Organic	$\frac{\text{Liquid limit - oven dried}}{\text{Liquid limit - not dried}} \leq 0.75$	OL	Organic clay ^{k,l,m,n} Organic silt ^{k,l,m,o}
	SILTS & CLAYS Liquid limit 50% or more	Inorganic	PI plots on or above "A" line	CH	Fat clay ^{k,l,m}
			PI plots below "A" line	MH	Elastic silt ^{k,l,m}
		Organic	$\frac{\text{Liquid limit - oven dried}}{\text{Liquid limit - not dried}} < 0.75$	OH	Organic clay ^{k,l,m,p} Organic silt ^{k,l,m,q}
Highly organic soils	Primarily organic matter, dark in color, and organic odor			PT	Peat

- a. Based on the material passing the 3-in (75-mm) sieve.
b. If field sample contained cobbles and/or boulders, add "with cobbles and/or boulders" to group name.
c. Gravels with 5 to 12% fines require dual symbols
GW-GM well graded gravel with silt
GW-GC well graded gravel with clay
GP-GM poorly graded gravel with silt
GP-GC poorly graded gravel with clay
d. Sands with 5% to 12% fines require dual symbols
SW-SM well graded sand with silt
SW-SC well graded sand with clay
SP-SM poorly graded sand with silt
SP-SC poorly graded sand with clay
e.
 $C_u = D_{60}/D_{10}$ $C_c = \frac{(D_{30})^2}{D_{10} \times D_{60}}$
f. If soil contains $\geq 15\%$ sand, add "with sand" to group name.
g. If fines classify as CL-ML, use dual symbol GC-GM, SC-SM.
h. If fines are organic, add "with organic fines" to group name.
i. If soil contains $\geq 15\%$ gravel, add "with gravel" to group name.

- j. If Atterberg Limits plot in hatched area, soil is a CL-ML, silty clay.
k. If soil contains 15 to 29% plus No. 200, add "with sand" or "with gravel" whichever is predominant.
l. If soil contains $\geq 30\%$ plus No. 200, predominantly sand, add "sandy" to group name.
m. If soil contains $\geq 30\%$ plus No. 200, predominantly gravel, add "gravelly" to group name.
n. $PI \geq 4$ and plots on or above "A" line.
o. $PI \geq 4$ or plots below "A" line.
p. PI plots on or above "A" line.
q. PI plots below "A" line.



TESTING SERVICE CORPORATION

LEGEND FOR BORING LOGS



FILL



TOPSOIL



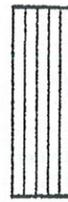
PEAT



GRAVEL



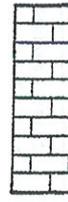
SAND



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 Foot
 Wc = In-Situ Water Content
 Qu = Unconfined Compressive Strength in Tons per Square Foot
 * Pocket Penetrometer Measurement; Maximum Reading = 4.5 tsf
 γD = Dry Unit Weight in Pounds per Cubic Foot

WATER LEVELS:

▽ While Drilling
 ▽ End of Boring
 ▼ 24 Hours

SOIL DESCRIPTION:

MATERIAL

BOULDER
 COBBLE
 Coarse GRAVEL
 Small GRAVEL
 Coarse SAND
 Medium SAND
 Fine SAND
 SILT and CLAY

PARTICLE SIZE RANGE

Over 12 inches
 12 inches to 3 inches
 3 inches to ¾ inch
 ¾ inch to No. 4 Sieve
 No. 4 Sieve to No. 10 Sieve
 No. 10 Sieve to No. 40 Sieve
 No. 40 Sieve to No. 200 Sieve
 Passing No. 200 Sieve

COHESIVE SOILS

CONSISTENCY

	<u>Qu</u>
Very Soft	Less than 0.3
Soft	0.3 to 0.6
Stiff	0.6 to 1.0
Tough	1.0 to 2.0
Very Tough	2.0 to 4.0
Hard	4.0 and over

COHESIONLESS SOILS

RELATIVE DENSITY

	<u>N</u>
Very Loose	0 - 4
Loose	4 - 10
Firm	10 - 30
Dense	30 - 50
Very Dense	50 and over

MODIFYING TERM

Trace
 Little
 Some

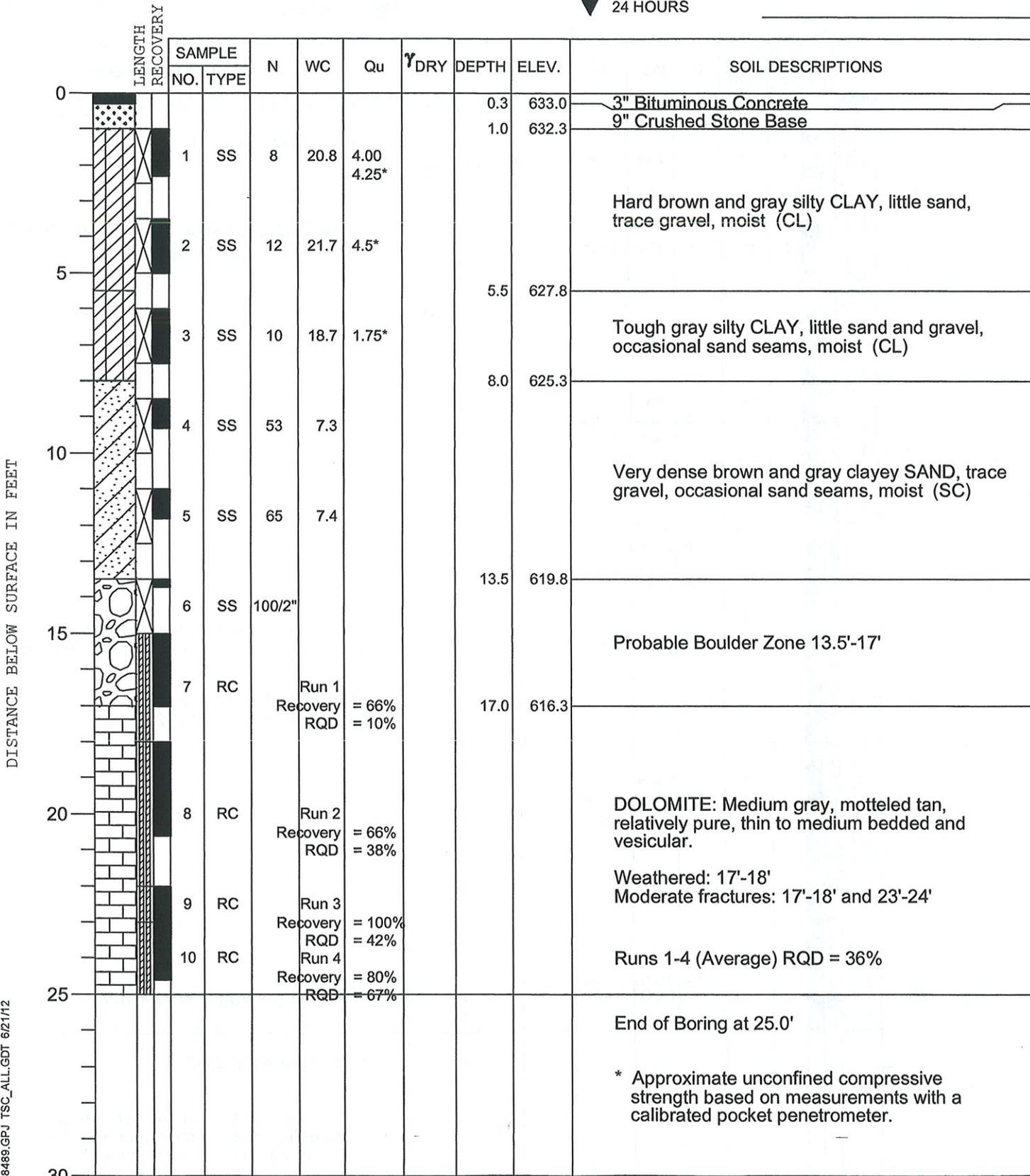
PERCENT BY WEIGHT

1 - 10
 10 - 20
 20 - 35



ELEVATIONS
 GROUND SURFACE **633.3**
 END OF BORING **608.3**

WATER LEVEL OBSERVATIONS
 ▽ WHILE DRILLING **Dry**
 ▽ AT END OF BORING **Dry**
 ▽ 24 HOURS



TSC2 78489.GPJ TSC_ALL.GDT 6/21/12

DRILL RIG NO. **314**

Division lines between deposits represent approximate boundaries between soil types; in-situ, the transition may be gradual.

* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.



ELEVATIONS

GROUND SURFACE **634.7**
 END OF BORING **608.7**

WATER LEVEL OBSERVATIONS

▼ WHILE DRILLING **Dry**
 ▼ AT END OF BORING **Dry**
 ▼ 24 HOURS

DISTANCE BELOW SURFACE IN FEET	LENGTH RECOVERY	SAMPLE		N	WC	Qu	γ _{DRY}	DEPTH	ELEV.	SOIL DESCRIPTIONS	
		NO.	TYPE								
0								0.4	634.3	4 1/2" Bituminous Concrete	
										18" Crushed Stone Base	
		1	SS	7	24.9	3.25*		1.9	632.8	Very tough to hard brown and gray silty CLAY, little sand, trace gravel, moist (CL)	
		2	SS	11	18.6	4.5+*					
5								6.0	628.7	DOLOMITE: Light to medium gray, mottled dark gray and tan, relatively pure and thin bedded. 15%-20% Pinpoint vugs Moderate fractures: 21'-22' Runs 1-4 (Average) RQD = 18%	
		4	RC								
											Run 1 Recovery = 100% RQD = 0%
		5	RC								Run 2 Recovery = 100% RQD = 17%
		6	RC								Run 3 Recovery = 100% RQD = 0%
15											
		7	RC							Run 4 Recovery = 100% RQD = 27%	
20											
		8	RC							Run 5 Recovery = 100% RQD = 42%	
25											
										End of Boring at 26.0'	
30										* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.	

DISTANCE BELOW SURFACE IN FEET

TSC2 78489.GPJ TSC_ALL.GDT 6/21/12

Division lines between deposits represent approximate boundaries between soil types; in-situ, the transition may be gradual.

PROJECT **Maple Avenue Relief Sewer, Bluff Avenue to LaGrange Road, LaGrange, IL**

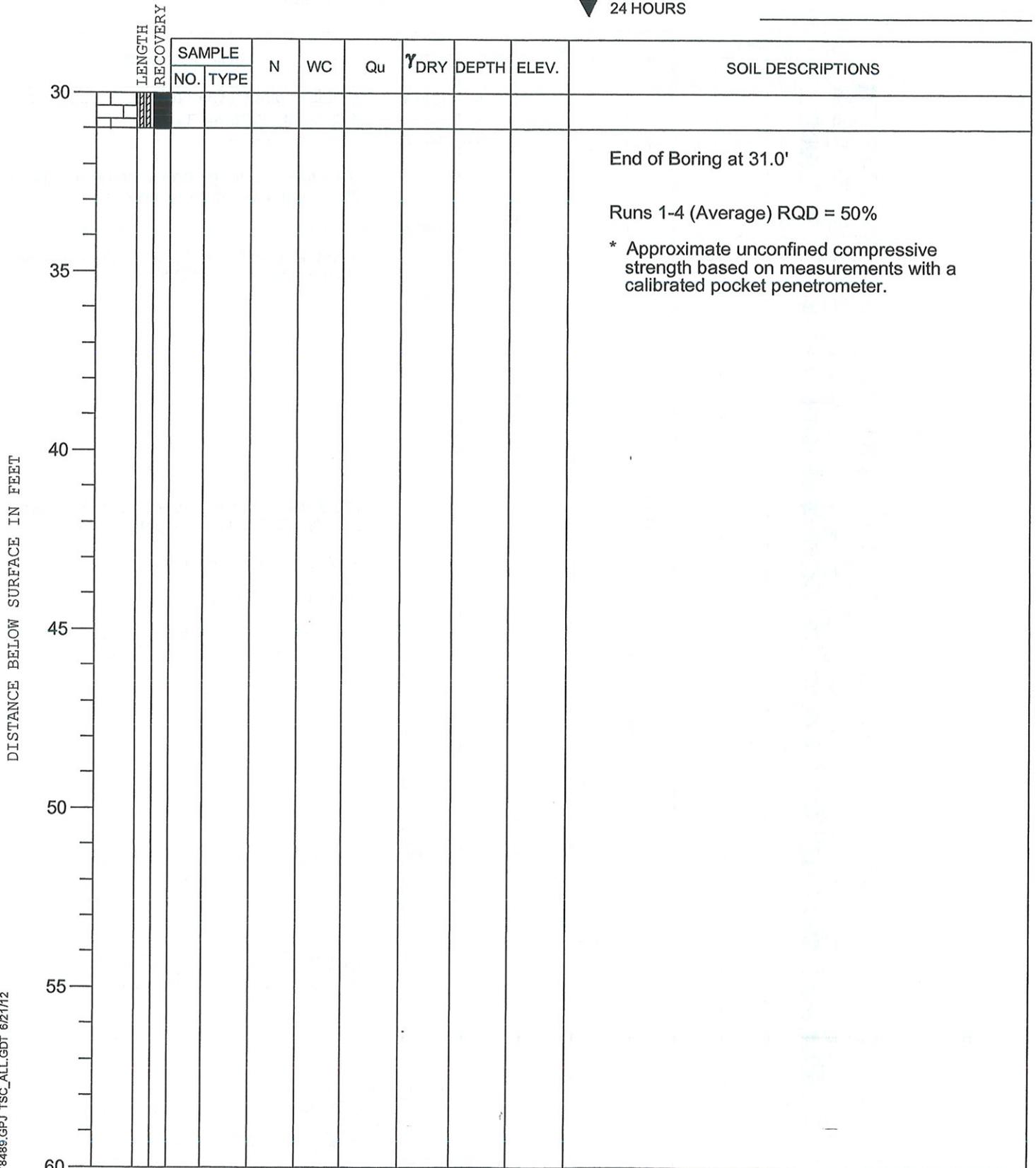


CLIENT **Baxter & Woodman, Inc., Mokena, IL**

BORING **206** DATE STARTED **6-1-12** DATE COMPLETED **6-1-12** JOB **L-78,489**

ELEVATIONS
 GROUND SURFACE **640.7**
 END OF BORING **609.7**

WATER LEVEL OBSERVATIONS
 ▽ WHILE DRILLING **Dry**
 ▽ AT END OF BORING **Dry**
 ▽ 24 HOURS



TSC2 78489.GPJ TSC_ALL.GDT 6/21/12

DRILL RIG NO. **314**

Division lines between deposits represent approximate boundaries between soil types; in-situ, the transition may be gradual.

PROJECT **Maple Avenue Relief Sewer, Bluff Avenue to LaGrange Road, LaGrange, IL**



CLIENT **Baxter & Woodman, Inc., Mokena, IL**

BORING **209** DATE STARTED **5-30-12** DATE COMPLETED **5-30-12** JOB **L-78,489**

ELEVATIONS

GROUND SURFACE **638.7**
 END OF BORING **615.2**

WATER LEVEL OBSERVATIONS

▽ WHILE DRILLING **Dry**
 ▽ AT END OF BORING **Dry**
 ▼ 24 HOURS

DISTANCE BELOW SURFACE IN FEET	LENGTH RECOVERY	SAMPLE		N	WC	Qu	γ _{DRY}	DEPTH	ELEV.	SOIL DESCRIPTIONS
		NO.	TYPE							
0								0.2	638.5	2 3/4" Bituminous Concrete
								1.0	637.7	9" Crushed Stone Base
		1	SS	7	24.6	2.75*				Very tough brown and gray silty CLAY, little sand, trace gravel, moist (CL)
5		2	RC					3.5	635.2	DOLOMITE: Light gray, mottled dark gray and tan, thin bedded and vesicular. Weathered: 3.5'-12' Moderately to highly fractured: 3.5'-8'
					Run 1 Recovery = 100% RQD = 0%					
10		3	RC					11.5	627.2	DOLOMITE: Medium to dark gray, mottled brown, relatively pure and thin to medium bedded. 15%-20% Pinpoint vugs
					Run 2 Recovery = 100% RQD = 7%					
15		4	RC					19.5	619.2	DOLOMITE: Light to medium gray, silty to slightly pure, medium bedded, styalitic, with occasional green clay partings. 10%-15% Pinpoint vugs
20					Run 3 Recovery = 100% RQD = 71%					
25										End of Boring at 23.5' Runs 1-4 (Average) RQD = 38%
30										* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.

DRILL RIG NO. **314**

Division lines between deposits represent approximate boundaries between soil types; in-situ, the transition may be gradual.

TSC2 78489.GPJ TSC_ALL.GDT 6/21/12

PROJECT **Maple Avenue Relief Sewer, Bluff Avenue to LaGrange Road, LaGrange, IL**



CLIENT **Baxter & Woodman, Inc., Mokena, IL**

BORING **211** DATE STARTED **5-30-12** DATE COMPLETED **5-30-12** JOB **L-78,489**

ELEVATIONS
 GROUND SURFACE **638.8**
 END OF BORING **614.3**

WATER LEVEL OBSERVATIONS
 WHILE DRILLING **Dry**
 AT END OF BORING **Dry**
 24 HOURS

DISTANCE BELOW SURFACE IN FEET	LENGTH RECOVERY	SAMPLE		N	WC	Qu	γ _{DRY}	DEPTH	ELEV.	SOIL DESCRIPTIONS
		NO.	TYPE							
0								0.3	638.5	3" Bituminous Concrete
								1.1	637.7	10" Crushed Stone Base
		1	SS	9	23.1	3.0*				Very tough black silty CLAY, little sand, trace gravel, trace organic, moist (CL)
		2	SS	5	23.2	2.5*				Very tough brown and gray silty CLAY, little sand, trace gravel, moist (CL)
		3	SS	100/2"				6.0	632.8	
10		4	RC							DOLOMITE: Light gray, mottled brown, silty, thin to medium bedded, with green clay partings. <10% Pinpoint vugs Weathered: 6.5'-8' Moderately to highly fractured: 6.5'-8'
								16.5	622.3	
15		5	RC							
20		6	RC							DOLOMITE: Light gray to tan, dense, silty, medium bedded, with occasional large vugs (1") and white chert nodules.
								23.5	615.3	DOLOMITE: Very light gray, relatively pure. Thin light gray clay layer (1"-2") at 23.5'
25										End of Boring at 24.5' Runs 1-4 (Average) RQD = 37% * Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.
30										

TSC2 78489.GPJ TSC_ALL.GDT 6/21/12

DRILL RIG NO. **314**

Division lines between deposits represent approximate boundaries between soil types; in-situ, the transition may be gradual.

TOP → 78,489 - B-201 15' to 25'

Top Run 1 →

Possible sand & gravel layer cracks

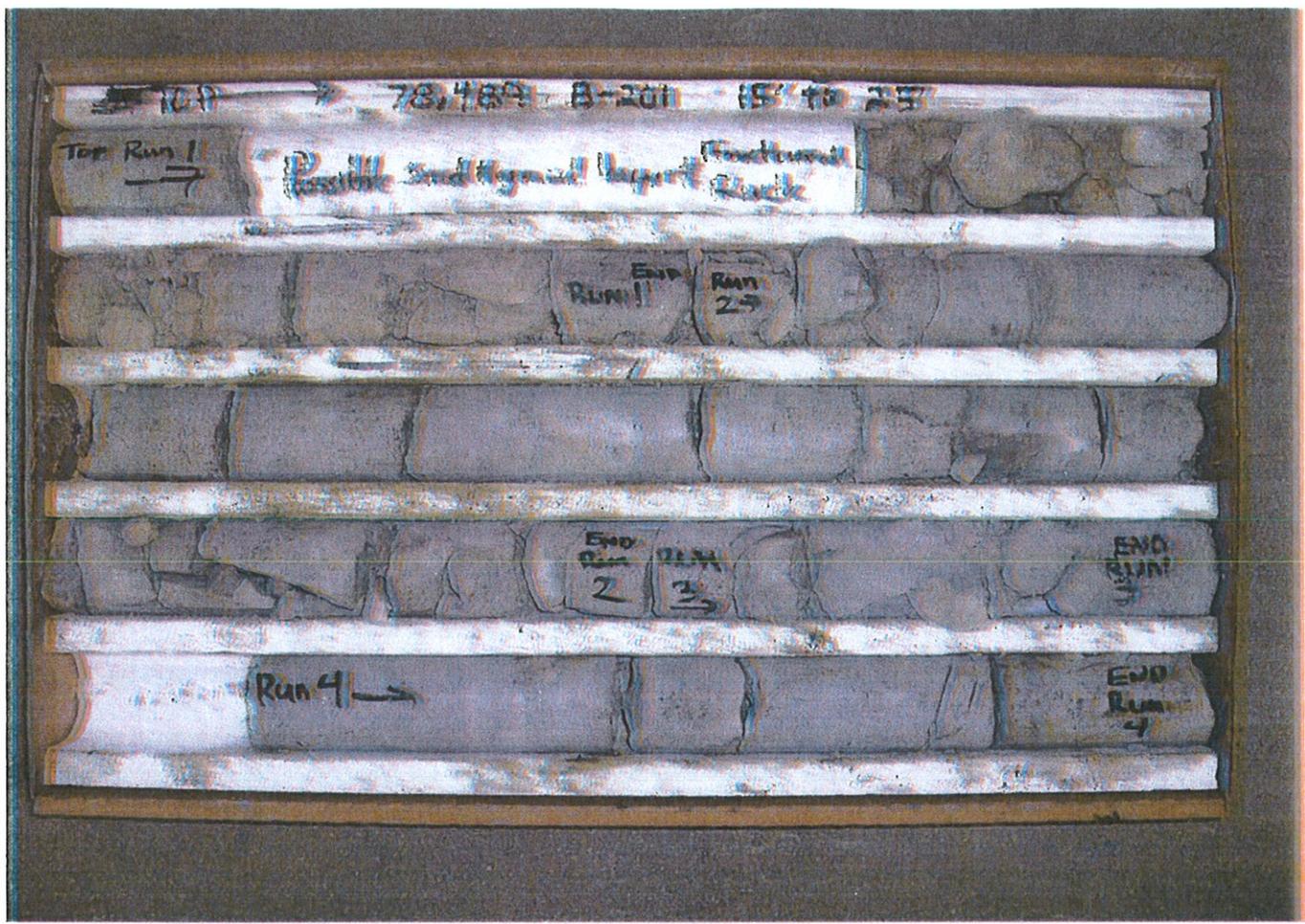
End Run 1 Run 2

End Run 2 Run 3

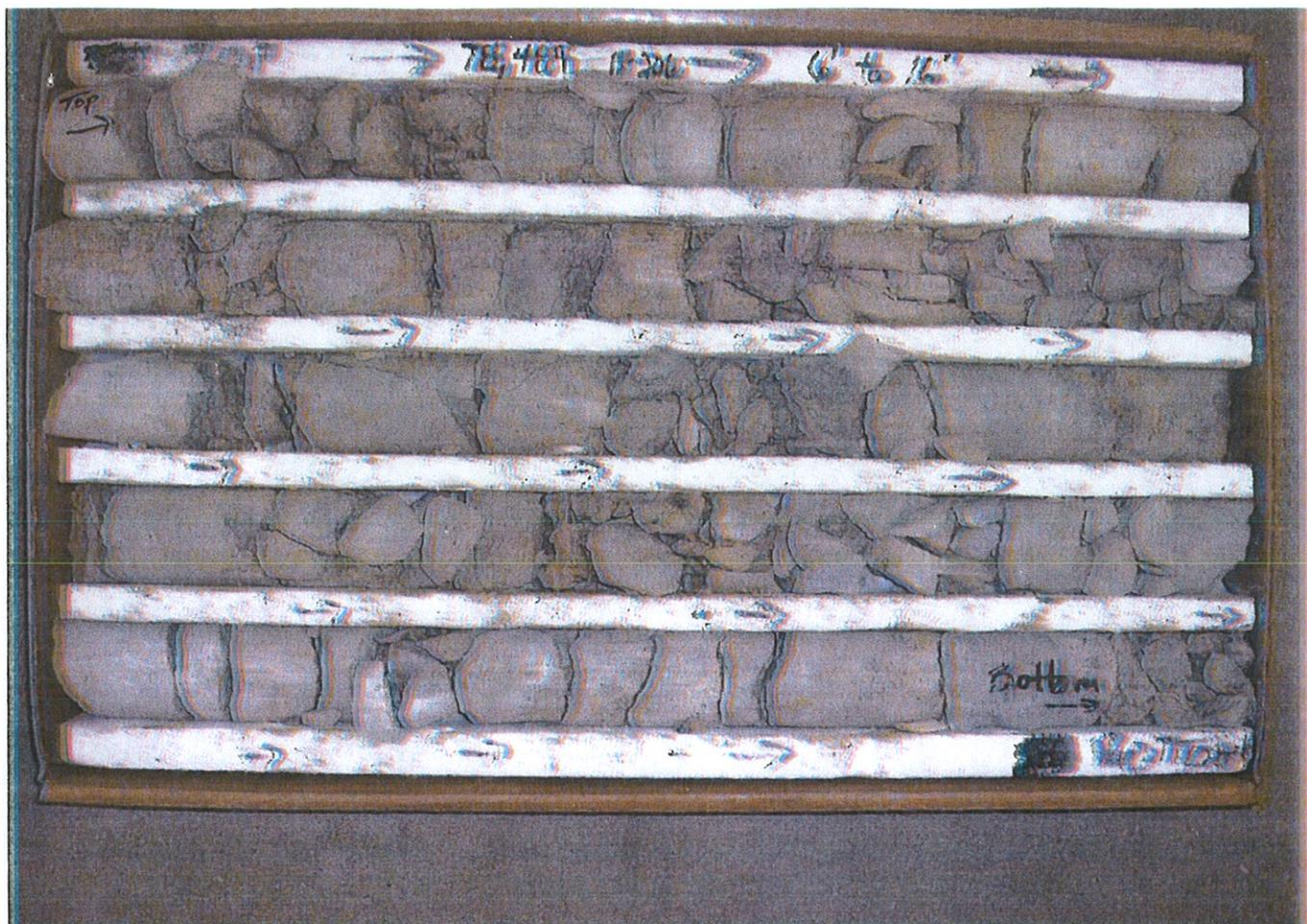
END RUN 3

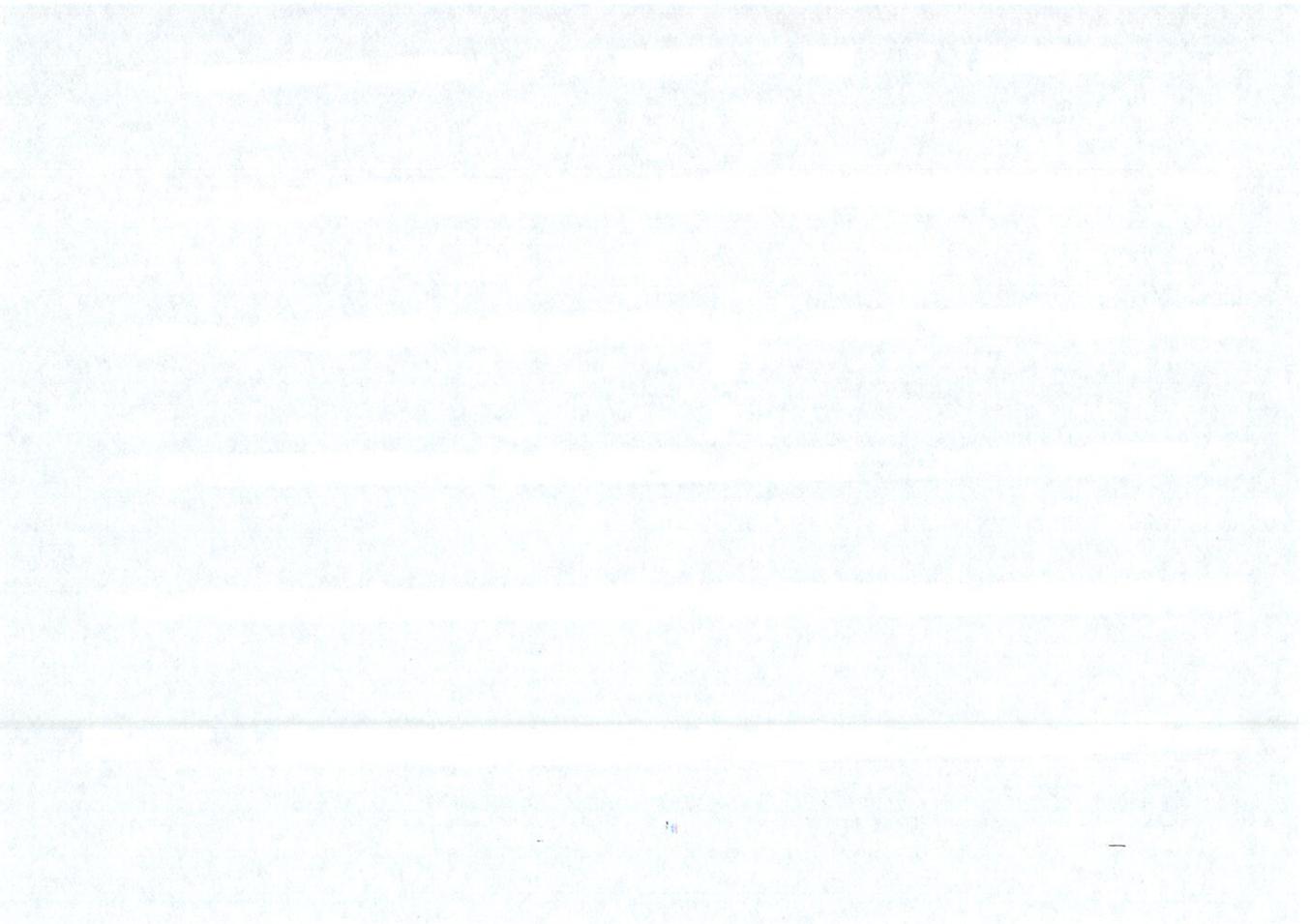
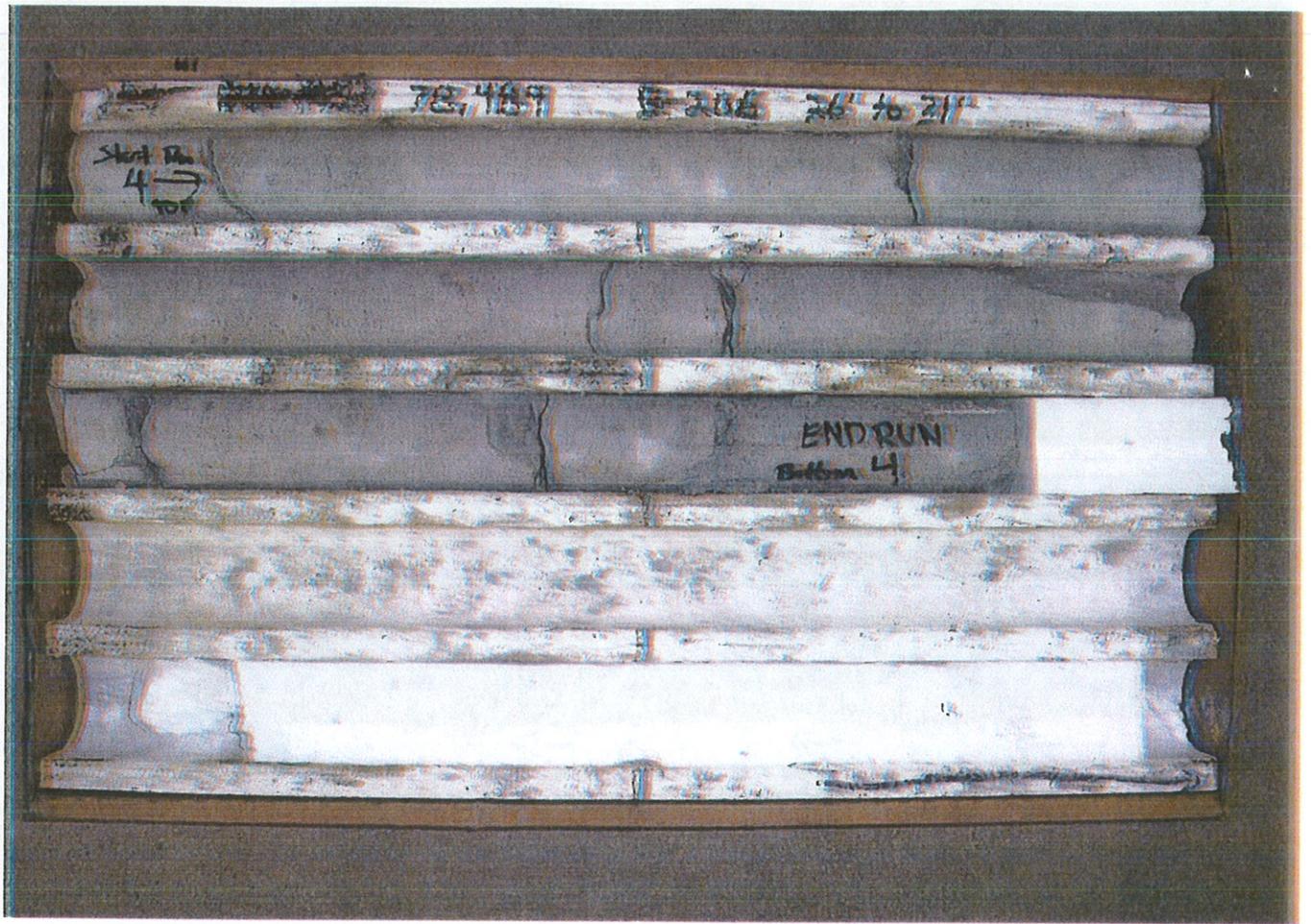
Run 4 →

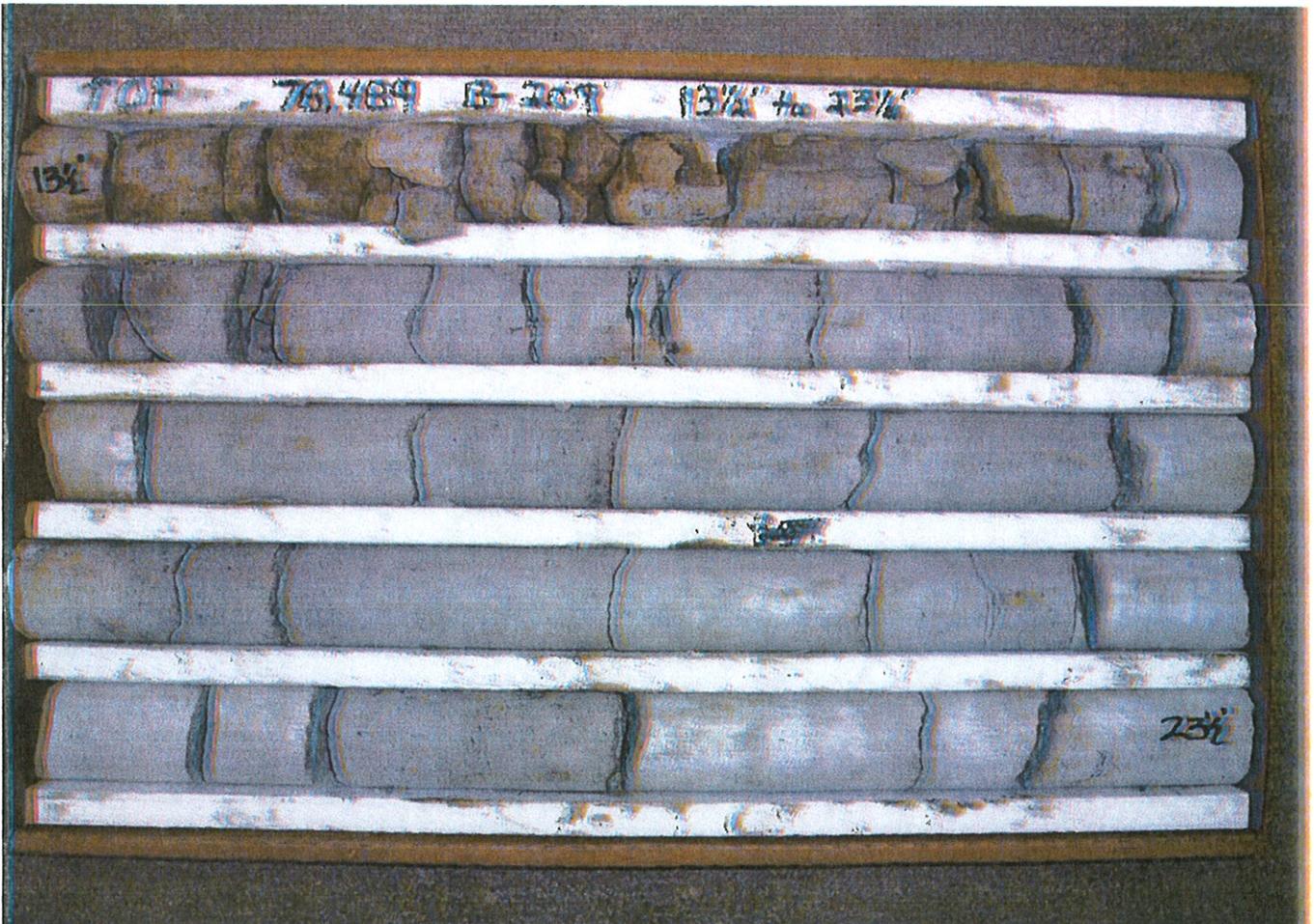
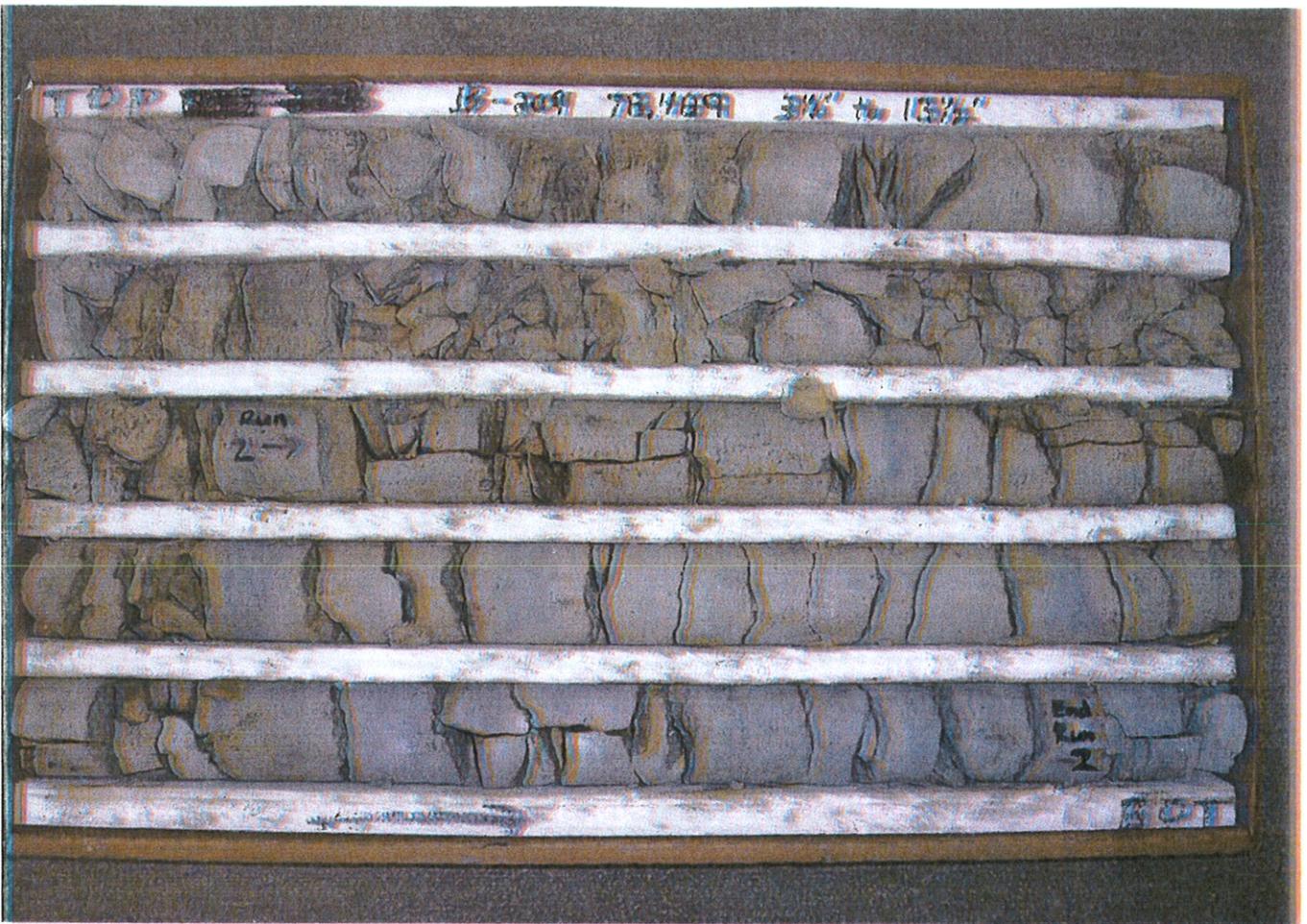
END RUN 4

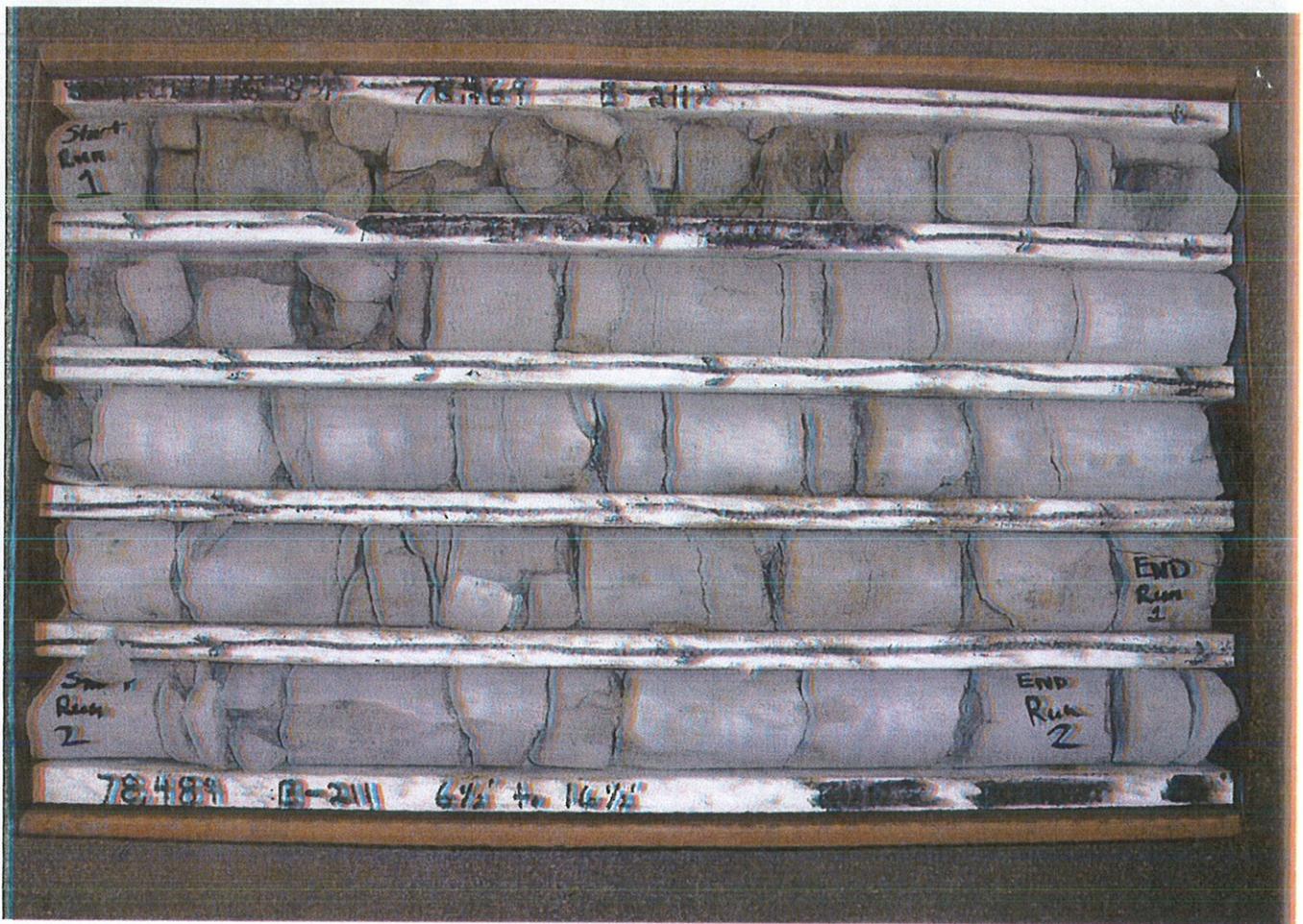


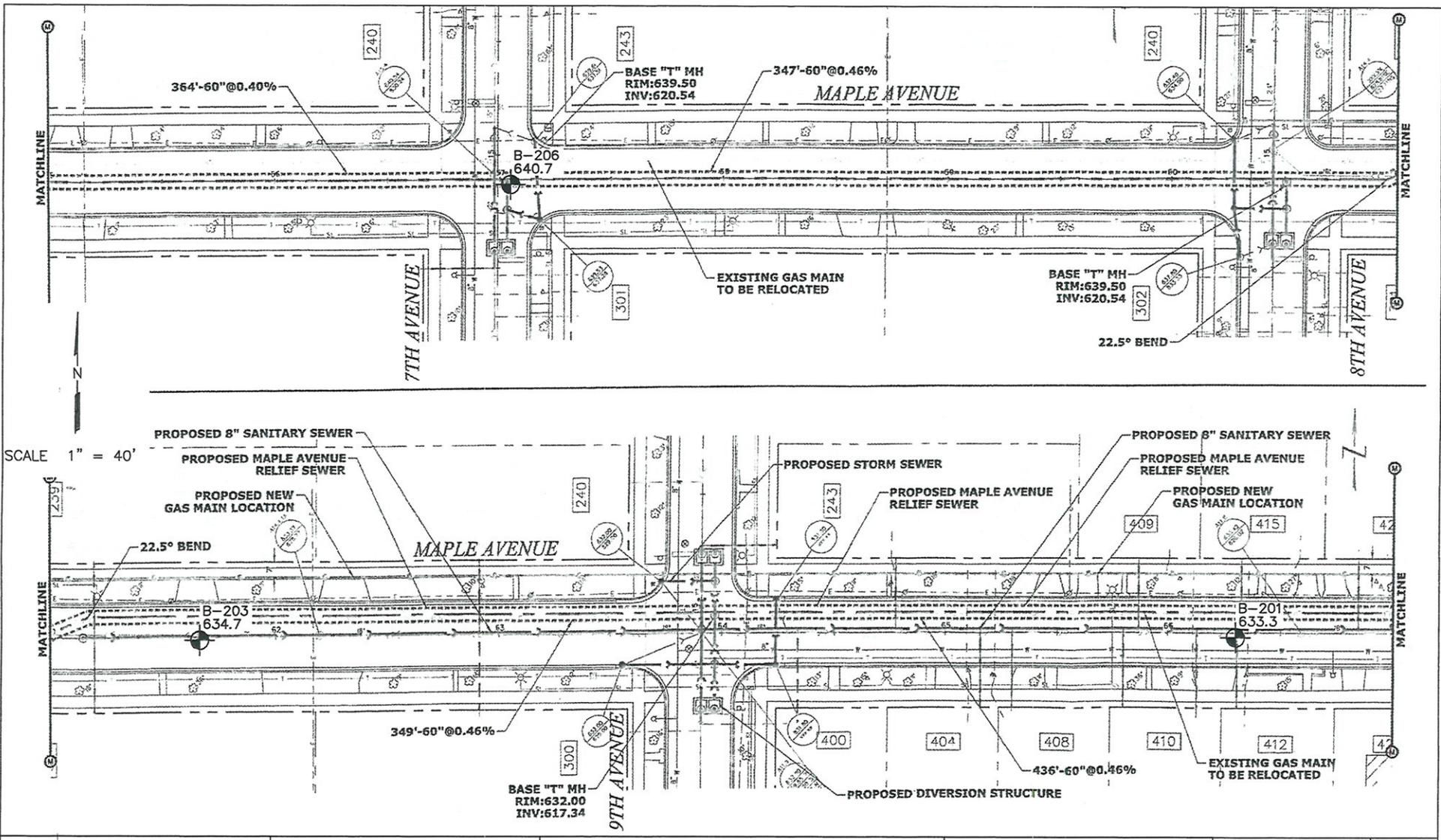












SCALE 1" = 40'

NOTE: BORING ELEVATIONS AT THE BORING LOCATIONS PROVIDED BY BAXTER AND WOODMAN, INC.

LEGEND
 SOIL BORING LOCATION

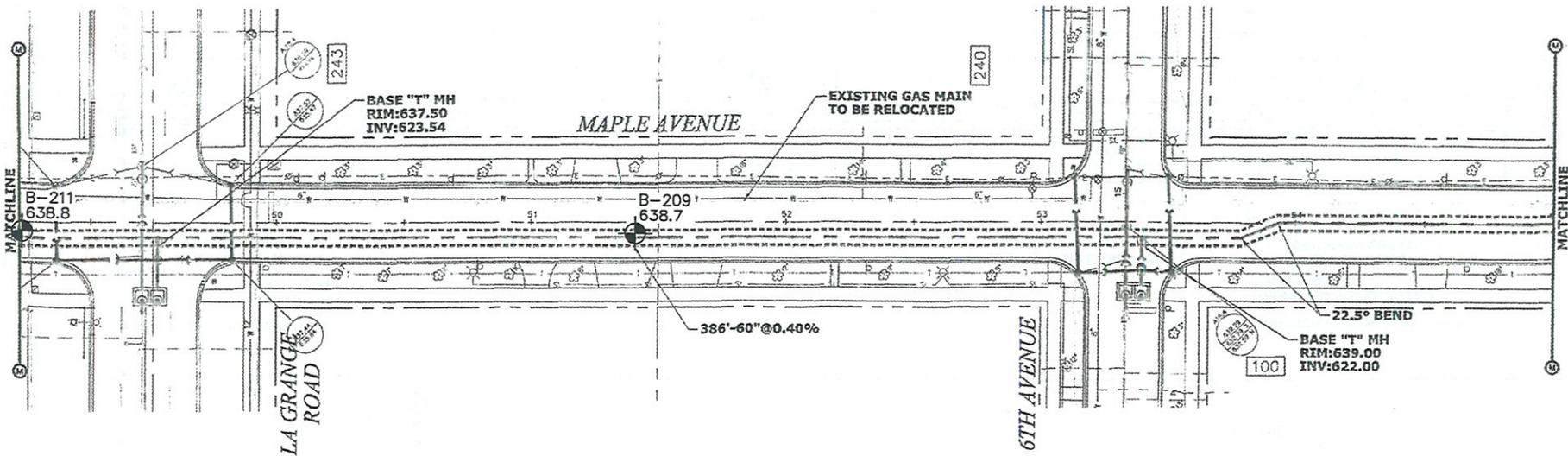
BORING LOCATION PLAN
 SUPPLEMENTAL ROCK CORES
 MAPLE AVENUE RELIEF SEWER
 BLUFF AVENUE TO LA GRANGE ROAD
 LA GRANGE, ILLINOIS

TSC TESTING SERVICE CORPORATION
 457 EAST GUNDERSEN DRIVE
 CAROL STREAM, ILLINOIS 60188

DRAWN BY: TRP	PAGE NO.
CHECKED BY: MVM	1 OF 2
JOB NO.: L-78,489	
DATE: 06-21-12	



SCALE 1" = 40'



NOTE: BORING ELEVATIONS AT THE BORING LOCATIONS PROVIDED BY BAXTER AND WOODMAN, INC.

LEGEND
 SOIL BORING LOCATION

BORING LOCATION PLAN
 SUPPLEMENTAL ROCK CORES
 MAPLE AVENUE RELIEF SEWER
 BLUFF AVENUE TO LA GRANGE ROAD
 LA GRANGE, ILLINOIS



TESTING SERVICE CORPORATION
 457 EAST GUNDERSEN DRIVE
 CAROL STREAM, ILLINOIS 60188

DRAWN BY: TRP
 CHECKED BY: MVM
 JOB NO. : L-78,489
 DATE: 06-21-12

PAGE NO.
 2 OF 2



Route Maple Avenue Relief Sewer
County Cook
Local Agency Village of La Grange
Section 12-00088-00-FP

RETURN WITH BID

1. Proposal of Namp Concrete Contractors, Inc.
1900 Wright Blvd., Schaumburg IL 60193

for the improvement of the above section by the construction of HMA pavement reconstruction, water main, sanitary and storm sewer installation, rock excavation, curb and gutter and other miscellaneous work necessary to complete the improvements.

a total distance of 1,558 feet, of which a distance of 1,558 feet, (0.30 miles) are to be improved.

- 2. The plans for the proposed work are those prepared by Baxter & Woodman, Inc. 8678 Ridgefield Road, Crystal Lake, Illinois, 60012 and approved by the Department of Transportation on
3. The specifications referred to herein are those prepared by the Department of Transportation and designated as "Standard Specifications for Road and Bridge Construction" and the "Supplemental Specifications and Recurring Special Provisions" thereto, adopted and in effect on the date of invitation for bids.
4. The undersigned agrees to accept, as part of the contract, the applicable Special Provisions indicated on the "Check Sheet for Recurring Special Provisions" contained in this proposal.
5. The undersigned agrees to complete the work within 90 working days or by
unless additional time is granted in accordance with the specifications.
6. A proposal guaranty in the proper amount, as specified in BLRS Special Provision for Bidding Requirements and Conditions for contract Proposals, will be required. Bid Bonds [X] will [] will not be allowed as proposal guaranties. Accompanying this proposal is either a bid bond if allowed, on Department form BLR 12230 or a proposal guaranty check, complying with the specifications, made payable to: Village Treasurer of La Grange
the amount of the check is 5% of the bid amount for Option 2. ()
7. In the event that one proposal guaranty check is intended to cover two or more proposals, the amount must be equal to the sum of the proposal guaranties, which would be required for each individual proposal. If the proposal guaranty check is placed in another proposal, it will be found in the proposal for: Section Number
8. If this proposal is accepted and the undersigned fails to execute a contract and contract bond as required, it is hereby agreed that the Bid Bond or check shall be forfeited to the Awarding Authority.
9. Each pay item should have a unit price and a total price. If no total price is shown or if there is a discrepancy between the product of the unit price multiplied by the quantity, the unit price shall govern. If a unit price is omitted, the total price will be divided by the quantity in order to establish a unit price.
10. A bid will be declared unacceptable if neither a unit price nor a total price is shown.
11. The undersigned firm certifies that it has not been convicted of bribery or attempting to bribe an officer or employee of the State of Illinois, nor has the firm made an admission of guilt of such conduct which is a matter of record, nor has an official, agent, or employee of the firm committed bribery or attempted bribery on behalf of the firm and pursuant to the direction or authorization of a responsible official of the firm. The undersigned firm further certifies that it is not barred from contracting with any unit of State or local government as a result of a violation of State laws prohibiting bid-rigging or bid-rotating.
12. The undersigned submits herewith the schedule of prices on BLR 12222 covering the work to be performed under this contract.



Illinois Department of Transportation

Schedule of Prices Option 2

Route	Maple Ave Relief Sewer
County	Cook
Local Agency	Village of LaGrange
Section	12-00088-00-FP

RETURN WITH BID

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

Item No.	Items	Unit	Quantity	Unit Price	Total
1	TREE TRUNK PROTECTION	EACH	67	\$125.00	\$8,375.00
2	TREE ROOT PRUNING	EACH	67	\$125.00	\$8,375.00
3	TREE PRUNING (1 TO 10 INCH DIAMETER)	EACH	25	\$125.00	\$3,125.00
4	TREE PRUNING (OVER 10 INCH DIAMETER)	EACH	42	\$125.00	\$5,250.00
5	EARTH EXCAVATION	CU YD	2,032	\$36.00	\$73,152.00
6	REMOVAL AND DISPOSAL OF UNSTUIABLE MATERIAL	CU YD	884	\$36.00	\$31,824.00
7	TRENCH BACKFILL	CU YD	384	\$35.00	\$13,440.00
8	GEOTECHNICAL FABRIC FOR GROUND STABILIZATION	SQ YD	1,974	\$1.00	\$1,974.00
9	MULCH, METHOD 2	ACRE	0.56	\$5,000.00	\$2,800.00
10	SUPPLEMENTAL WATERING	UNIT	33	\$1.00	\$33.00
11	TEMPORARY EROSION CONTROL SEEDING	POUND	56	\$25.00	\$1,400.00
12	PERIMETER EROSION BARRIER	FOOT	168	\$3.00	\$504.00
13	INLET FILTERS	EACH	28	\$125.00	\$3,500.00
14	AGGREGATE SUBGRADE IMPROVEMENT, 12"	SQ YD	6,438	\$11.00	\$70,818.00
15	AGGREGATE SUBGRADE IMPROVEMENT	CU YD	537	\$35.00	\$18,795.00
16	AGGREGATE BASE COURSE, TYPE B 3"	SQ YD	363	\$4.00	\$1,452.00
17	AGGREGATE BASE COURSE, TYPE B 4"	SQ YD	878	\$5.00	\$4,390.00
18	BITUMINOUS MATERIALS (PRIME COAT)	TON	9	\$500.00	\$4,500.00
19	AGGREGATE (PRIME COAT)	TON	23	\$1.00	\$23.00
20	HOT-MIX ASPHALT BINDER COURSE, I-19.0, N50	TON	980	\$75.00	\$73,500.00
21	HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N50	TON	654	\$78.00	\$51,012.00
22	PROTECTIVE COAT	SQ YD	1,782	\$1.00	\$1,782.00
23	PORTLAND CEMENT CONCRETE DRIVEWAY PAVEMENT, 7 INCH	SQ YD	363	\$40.00	\$14,520.00
24	PORTLAND CEMENT CONCRETE SIDEWALK 5 INCH	SQ FT	7,601	\$4.00	\$30,404.00
25	CONCRETE STEPS	SQ FT	301	\$50.00	\$15,050.00
26	REMOVE AND REERECT RETAINING WALL	SQ FT	107	\$50.00	\$5,350.00
27	DETECTABLE WARNINGS	SQ FT	256	\$30.00	\$7,680.00
28	PAVEMENT REMOVAL	SQ YD	5,781	\$13.00	\$75,153.00
29	DRIVEWAY PAVEMENT REMOVAL	SQ YD	358	\$12.00	\$4,296.00
30	COMBINATION CURB AND GUTTER REMOVAL	FOOT EACH	3,272	\$3.00	\$9,816.00
31	SIDEWALK REMOVAL	SQ FT	7,902	\$1.00	\$7,902.00
32	PIPE HANDRAIL	FOOT	10	\$350.00	\$3,500.00
33	STORM SEWERS, RUBBER GASKET, CLASS B, TYPE 1 12"	FOOT	201	\$50.00	\$10,050.00
34	STORM SEWERS, RUBBER GASKET, CLASS B, TYPE 2 12"	FOOT	35	\$65.00	\$2,275.00
35	STORM SEWERS, RUBBER GASKET, CLASS B, TYPE 2 15"	FOOT	44	\$85.00	\$3,740.00
Page Total (To be carried forward to Page 2):					\$569,760.00



Illinois Department of Transportation

Schedule of Prices Option 2

Route Maple Ave Relief Sewer
 County Cook
 Local Agency Village of LaGrange
 Section 12-00088-00-FP

RETURN WITH BID

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

Item No.	Items	Unit	Quantity	Unit Price	Total
36	STORM SEWERS, RUBBER GASKET, CLASS B, TYPE 3 24"	FOOT	45	\$225.00	\$10,125.00
37	STORM SEWERS, RUBBER GASKET, CLASS B, TYPE 4 24"	FOOT	18	\$250.00	\$4,500.00
38	STORM SEWER (WATER MAIN REQUIREMENTS) 12 INCH	FOOT	79	\$110.00	\$8,690.00
39	STORM SEWER REMOVAL 8"	FOOT	250	\$10.00	\$2,500.00
40	CATCH BASINS, TYPE A, 4'-DIAMETER, TYPE 11 FRAME AND GRATE	EACH	3	\$2,500.00	\$7,500.00
41	CATCH BASINS, TYPE C, TYPE 11 FRAME AND GRATE	EACH	7	\$1,500.00	\$10,500.00
42	MANHOLES, TYPE A, 4'-DIAMETER, TYPE 1 FRAME, CLOSED LID	EACH	1	\$3,500.00	\$3,500.00
43	MANHOLES, TYPE A, 5'-DIAMETER, TYPE 1 FRAME, CLOSED LID	EACH	5	\$4,500.00	\$22,500.00
44	INLETS, TYPE A, TYPE 11 FRAME AND GRATE	EACH	5	\$1,150.00	\$5,750.00
45	INLETS, TYPE B, TYPE 11 FRAME AND GRATE	EACH	1	\$1,350.00	\$1,350.00
46	REMOVING MANHOLES	EACH	1	\$500.00	\$500.00
47	REMOVING CATCH BASINS	EACH	10	\$500.00	\$5,000.00
48	REMOVING INLETS	EACH	2	\$100.00	\$200.00
49	FIRE HYDRANTS TO BE ADJUSTED	EACH	1	\$650.00	\$650.00
50	COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.12	FOOT	3,272	\$16.00	\$52,352.00
51	MOBILIZATION	L SUM	1	\$200,000.00	\$200,000.00
52	NON-SPECIAL WASTE DISPOSAL	CU YD	500	\$10.00	\$5,000.00
53	SOIL DISPOSAL ANALYSIS (SPECIAL)	L SUM	1	\$3,500.00	\$3,500.00
54	TRAFFIC CONTROL AND PROTECTION, STANDARD 701701	L SUM	1	\$170,000.00	\$170,000.00
55	TRAFFIC CONTROL AND PROTECTION, STANDARD 701501	L SUM	1	\$1.00	\$1.00
56	TRAFFIC CONTROL AND PROTECTION, STANDARD 701801	L SUM	1	\$1.00	\$1.00
57	THERMOPLASTIC PAVEMENT MARKING - LINE 24"	FOOT	112	\$40.00	\$4,480.00
58	DUST CONTROL WATERING	UNIT	276	\$1.00	\$276.00
59	PARKWAY RESTORATION	SQ YD	2,708	\$8.00	\$21,664.00
60	EXPLORATION TRENCH, SPECIAL	FOOT	400	\$10.00	\$4,000.00
61	TEMPORARY ACCESS (PRIVATE ENTRANCE)	EACH	20	\$125.00	\$2,500.00
62	TEMPORARY ACCESS (ROAD)	EACH	10	\$350.00	\$3,500.00
63	CONNECTION TO EXISTING SANITARY SEWER MANHOLE	EACH	1	\$1,250.00	\$1,250.00
64	SANITARY SEWER, 8", 0- 8' DEEP	FOOT	390	\$70.00	\$27,300.00
				Carried forward from page 1:	\$569,760.00
				Page Total (To be carried forward to Page 3):	\$1,148,849.00



**Illinois Department
of Transportation**

**Schedule of Prices
Option 2**

Route Maple Ave Relief Sewer
 County Cook
 Local Agency Village of LaGrange
 Section 12-00088-00-FP

RETURN WITH BID

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

Item No.	Items	Unit	Quantity	Unit Price	Total
65	SANITARY SEWER, 8", 8-12' DEEP	FOOT	320	\$90.00	\$28,800.00
66	SANITARY MANHOLE, 0-8' DEEP	EACH	2	\$2,500.00	\$5,000.00
67	SANITARY MANHOLE, 8-12' DEEP	EACH	4	\$5,000.00	\$20,000.00
68	SANITARY SEWER SERVICE CONNECTION	EACH	17	\$750.00	\$12,750.00
69	SANITARY SEWER SERVICE PIPE	FOOT	570	\$60.00	\$34,200.00
70	WATER MAIN, H.D.D. INSTALLED, 8"	FOOT	520	\$135.00	\$70,200.00
71	DUCTILE IRON WATER MAIN FITTINGS	POUNDS	1,200	\$5.00	\$6,000.00
72	CASING PIPE, OPEN CUT	FOOT	20	\$85.00	\$1,700.00
73	WATER MAIN RELOCATION	EACH	1	\$4,500.00	\$4,500.00
74	GATE VALVE WITH VALVE BOX, 8"	EACH	1	\$3,000.00	\$3,000.00
75	FIRE HYDRANT	EACH	2	\$4,250.00	\$8,500.00
76	INSERTION VALVE W/ VALVE BOX, 8"	EACH	1	\$5,000.00	\$5,000.00
77	WATER SERVICE CONNECTION	EACH	13	\$1,000.00	\$13,000.00
78	WATER SERVICE PIPE	FOOT	350	\$30.00	\$10,500.00
79	DOMESTIC WATER SERVICE BOXES TO BE ADJUSTED	EACH	5	\$150.00	\$750.00
80	WATER MAIN ABANDONMENT	L SUM	1	\$12,500.00	\$12,500.00
81	60" RELIEF SEWER	FOOT	1,530	\$375.00	\$573,750.00
82	BASE TEE MANHOLE FITTING, 60" PIPE	EACH	5	\$12,000.00	\$60,000.00
83	BASE TEE MANHOLE RISER, 48" DIAMETER	FOOT	63	\$1,000.00	\$63,000.00
84	PIPE CONNECTION TO BASE TEE MANHOLE, 24"	EACH	5	\$3,500.00	\$17,500.00
85	ROCK EXCAVATION	CU YD	4,550	\$25.00	\$113,750.00
86	ROCK EXCAVATION, SPECIAL	CU YD	580	\$30.00	\$17,400.00
87	OVERFLOW DIVERSION STRUCTURE	EACH	5	\$15,000.00	\$75,000.00
88	OVERFLOW DIVERSION MANHOLE	EACH	5	\$18,500.00	\$92,500.00
89	OVERFLOW DIVERSION PIPE, 8"	FOOT	200	\$100.00	\$20,000.00
90	OVERFLOW DIVERSION PIPE, 12"	FOOT	30	\$120.00	\$3,600.00
91	OVERFLOW DIVERSION PIPE, 16"	FOOT	30	\$150.00	\$4,500.00
92	OVERFLOW DIVERSION PIPE, 18"	FOOT	20	\$175.00	\$3,500.00
93	SANITARY SEWER TELEVISION INSPECTION	FOOT	610	\$4.00	\$2,440.00
94	ADJUST EXISTING HANDHOLE	EACH	3	\$650.00	\$1,950.00
95	EXPOSE AND RELOCATE EXISTING UNIT DUCT	FOOT	1,000	\$5.00	\$5,000.00
96	RESTRICTOR PLATE	L SUM	1	\$35,000.00	\$35,000.00
Carried forward from page 2:					\$1,148,849.00
Bidder's Proposal for making Entire Improvements:					\$2,474,139.00

13. The undersigned further agrees that if awarded the contract for the sections contained in the following combinations, he will perform the work in accordance with the requirements of each individual proposal for the multiple bid specified in the schedule below.

Schedule for multiple Bids

Combination letter	Sections included in Combination	Total



Route	<u>Maple Avenue Relief Sewer</u>
County	<u>Cook</u>
Local Agency	<u>Village of La Grange</u>
Section	<u>12-00088-00-FP</u>

RETURN WITH BID

(If an individual)

Signature of Bidder 

Business Address _____

(If a partnership)

Firm Name 

Signed By _____

Business Address _____

Insert Names and Addresses of All Partners

{ _____

{ _____

{ _____

{ _____

(If a corporation)

Corporate Name Stamp Concrete Contractors, Inc

Signed By Adele Lampignano President

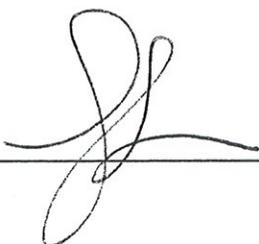
Business Address 1900 Wright Blvd.
Schaumburg IL 60193

Insert Names of Officers

{ President Adele Lampignano

{ Secretary Joseph Lampignano

{ Treasurer Joseph Lampignano

Attest:  Secretary



Local Agency Proposal Bid Bond

RETURN WITH BID

Route _____
County _____
Local Agency La Grange
Section 12-00088-00-FP

PAPER BID BOND
WE A. Lamp Concrete Contractors, Inc. as PRINCIPAL,
and The Hanover Insurance Company as SURETY,

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

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

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

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

IN TESTIMONY WHEREOF, the said PRINCIPAL and the said SURETY have caused this instrument to be signed by their respective officers this 27 day of March 2013

Principal

A. Lamp Concrete Contractors, Inc.
(Company Name)

(Company Name)

By: _____

By: _____

Joseph Lampignano, Vice President
(Signature and Title)

(Signature and Title)

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

Surety

The Hanover Insurance Company
(Name of Surety)

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

Thomas O. Chambers

STATE OF WISCONSIN
COUNTY OF Racine

I, L. Gedemer, a Notary Public in and for said county, do hereby certify that Joseph Lampignano and Thomas O. Chambers

(Insert names of individuals signing on behalf of PRINCIPAL & SURETY)

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

Given under my hand and notarial seal this 27 day of March 2013

My commission expires 2/5/2017

(Signature of Notary Public)
L. GEDEMER
NOTARY PUBLIC
STATE OF WISCONSIN
2013

ELECTRONIC BID BOND

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

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

Electronic Bid Bond ID Code

(Company/Bidder Name)

(Signature and Title)

Date

THE HANOVER INSURANCE COMPANY
MASSACHUSETTS BAY INSURANCE COMPANY
CITIZENS INSURANCE COMPANY OF AMERICA

POWERS OF ATTORNEY
CERTIFIED COPY

KNOW ALL MEN BY THESE PRESENTS: That THE HANOVER INSURANCE COMPANY and MASSACHUSETTS BAY INSURANCE COMPANY, both being corporations organized and existing under the laws of the State of New Hampshire, and CITIZENS INSURANCE COMPANY OF AMERICA, a corporation organized and existing under the laws of the State of Michigan, do hereby constitute and appoint

Thomas O. Chambers, Kimberly S. Rasch and/or Todd Schaap

of Racine, WI and each is a true and lawful Attorney(s)-in-fact to sign, execute, seal, acknowledge and deliver for, and on its behalf, and as its act and deed any place within the United States, or, if the following line be filled in, only within the area therein designated any and all bonds, recognizances, undertakings, contracts of indemnity or other writings obligatory in the nature thereof, as follows:

Any such obligations in the United States, not to exceed Forty Million and No/100 (\$40,000,000) in any single instance

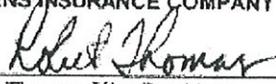
and said companies hereby ratify and confirm all and whatsoever said Attorney(s)-in-fact may lawfully do in the premises by virtue of these presents. These appointments are made under and by authority of the following Resolution passed by the Board of Directors of said Companies which resolutions are still in effect:

"RESOLVED, That the President or any Vice President, in conjunction with any Vice President, be and they are hereby authorized and empowered to appoint Attorneys-in-fact of the Company, in its name and as its acts, to execute and acknowledge for and on its behalf as Surety any and all bonds, recognizances, contracts of indemnity, waivers of citation and all other writings obligatory in the nature thereof, with power to attach thereto the seal of the Company. Any such writings so executed by such Attorneys-in-fact shall be as binding upon the Company as if they had been duly executed and acknowledged by the regularly elected officers of the Company in their own proper persons." (Adopted October 7, 1981 - The Hanover Insurance Company; Adopted April 14, 1982 - Massachusetts Bay Insurance Company; Adopted September 7, 2001 - Citizens Insurance Company of America)

IN WITNESS WHEREOF, THE HANOVER INSURANCE COMPANY, MASSACHUSETTS BAY INSURANCE COMPANY and CITIZENS INSURANCE COMPANY OF AMERICA have caused these presents to be sealed with their respective corporate seals, duly attested by two Vice Presidents, this 1st day of March 2012.



THE HANOVER INSURANCE COMPANY
MASSACHUSETTS BAY INSURANCE COMPANY
CITIZENS INSURANCE COMPANY OF AMERICA


Robert Thomas, Vice President


Joe Brenstrom, Vice President

THE COMMONWEALTH OF MASSACHUSETTS)
COUNTY OF WORCESTER) ss.

On this 1st day of March 2012 before me came the above named Vice Presidents of The Hanover Insurance Company, Massachusetts Bay Insurance Company and Citizens Insurance Company of America, to me personally known to be the individuals and officers described herein, and acknowledged that the seals affixed to the preceding instrument are the corporate seals of The Hanover Insurance Company, Massachusetts Bay Insurance Company and Citizens Insurance Company of America, respectively, and that the said corporate seals and their signatures as officers were duly affixed and subscribed to said instrument by the authority and direction of said Corporations.



BARBARA A. GARLICK
Notary Public
Commonwealth of Massachusetts
My Commission Expires Sept. 21, 2018


Barbara A. Garlick, Notary Public
My Commission Expires September 21, 2018

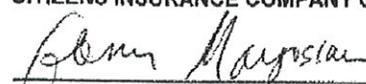
I, the undersigned Vice President of The Hanover Insurance Company, Massachusetts Bay Insurance Company and Citizens Insurance Company of America, hereby certify that the above and foregoing is a full, true and correct copy of the Original Power of Attorney issued by said Companies, and do hereby further certify that the said Powers of Attorney are still in force and effect.

This Certificate may be signed by facsimile under and by authority of the following resolution of the Board of Directors of The Hanover Insurance Company, Massachusetts Bay Insurance Company and Citizens Insurance Company of America.

"RESOLVED, That any and all Powers of Attorney and Certified Copies of such Powers of Attorney and certification in respect thereto, granted and executed by the President or any Vice President in conjunction with any Vice President of the Company, shall be binding on the Company to the same extent as if all signatures therein were manually affixed, even though one or more of any such signatures thereon may be facsimile." (Adopted October 7, 1981 - The Hanover Insurance Company; Adopted April 14, 1982 - Massachusetts Bay Insurance Company; Adopted September 7, 2001 - Citizens Insurance Company of America)

GIVEN under my hand and the seals of said Companies, at Worcester, Massachusetts, this 27th day of March 2013.

THE HANOVER INSURANCE COMPANY
MASSACHUSETTS BAY INSURANCE COMPANY
CITIZENS INSURANCE COMPANY OF AMERICA


Glenn Margosian, Vice President

Return with Bid

Route	<u>Maple Avenue Relief Sewer</u>
County	<u>Cook</u>
Local Agency	<u>Village of LaGrange</u>
Section	<u>12-00088-00-FP</u>

All contractors are required to complete the following certification:

- For this contract proposal or for all groups in this deliver and install proposal.
- For the following deliver and install groups in this material proposal:

Illinois Department of Transportation policy, adopted in accordance with the provisions of the Illinois Highway Code, requires this contract to be awarded to the lowest responsive and responsible bidder. The award decision is subject to approval by the Department. In addition to all other responsibility factors, this contract or deliver and install proposal requires all bidders and all bidders' subcontractors to disclose participation in apprenticeship or training programs that are (1) approved by and registered with the United States Department of Labor's Bureau of Apprenticeship and Training, and (2) applicable to the work of the above indicated proposals or groups. Therefore, all bidders are required to complete the following certification:

- I. Except as provided in paragraph IV below, the undersigned bidder certifies that it is a participant, either as an individual or as part of a group program, in an approved apprenticeship or training program applicable to each type of work or craft that the bidder will perform with its own employees.
- II. The undersigned bidder further certifies for work to be performed by subcontract that each of its subcontractors submitted for approval either (A) is, at the time of such bid, participating in an approved, applicable apprenticeship or training program; or (B) will, prior to commencement of performance of work pursuant to this contract, establish participation in an approved apprenticeship or training program applicable to the work of the subcontract.
- III. The undersigned bidder, by inclusion in the list in the space below, certifies the official name of each program sponsor holding the Certificate of Registration for all of the types of work or crafts in which the bidder is a participant and that will be performed with the bidder's employees. Types of work or craft that will be subcontracted shall be included and listed as subcontract work. The list shall also indicate any type of work or craft job category for which there is no applicable apprenticeship or training program available.

LABORERS - 2 - 76 - 96

OPERATORS - 150

CEMENT MASONS - 502 - 803 - 11

TEAMSTERS - 731 - 786



Illinois Department of Transportation

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

Affidavit of Availability For the Letting of

03/08/13

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

Part I. Work Under Contract

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

	1	2	3	4	5	
Contract Number	11-00184-03-SW	ENG-12-403	63461	12-23-432	02-00113-00-PV	
Contract With	Lake County DOT	Palatine	IDOT Item - 84	Cook County HD	MAYWOOD	
Estimated Completion Date	45 Wrk Days	5/31/2013	50 Working Days	8/20/2013	6/30/2010	
Total Contract Price	\$ 522,649.50	\$ 49,953.00	\$ 777,905.40	\$ 2,128,571.80	\$ 8,106,695.00	Accumulated Totals
Uncompleted Dollar Value if Firm is the Prime Contractor	\$ 522,649.50	\$ 49,953.00	\$ 5,000.00	\$ 2,128,571.80	\$ 202,500.00	\$ 2,908,674.30
Uncompleted Dollar Value if Firm is the Subcontractor						\$ -
Total Value of All Work						\$ 2,908,674.30

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

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

						Accumulated Totals
Gravel	\$ 67,331.00	\$ 465.00	\$ -	\$ 59,805.00	\$ 7,500.00	\$ 135,101.00
Portland Cement Concrete Paving		\$ -	\$ -	\$ -	\$ -	\$ -
HMA Plant Mix				\$ -	\$ -	\$ -
HMA Paving	\$ 14,971.00	\$ 1,800.00		\$ 35,750.00	\$ 5,000.00	\$ 57,521.00
Clean & Seal Cracks/ Joints				\$ 14,970.00	\$ -	\$ 14,970.00
Aggregate Bases & Surfaces	\$ 27,082.00	\$ -		\$ 4,416.00	\$ 5,000.00	\$ 36,498.00
Highway,R.R.& Water Structures				\$ -	\$ -	\$ -
Drainage	\$ 26,027.00	\$ -		\$ 20,350.00	\$ 2,500.00	\$ 48,877.00
Electrical						\$ -
Cover and Seal Coats						\$ -
Concrete Construction	\$ 148,192.34	\$ 36,328.00	\$ -	\$ 1,137,836.60	\$ 15,000.00	\$ 1,337,356.94
Landscaping	\$ 33,989.66	\$ 1,140.00	\$ -	\$ 4,138.00	\$ 10,000.00	\$ 49,267.66
Fencing				\$ -	\$ -	\$ -
Guardrail						\$ -
Painting					\$ -	\$ -
Signing			\$ -	\$ -	\$ 5,000.00	\$ 5,000.00
Cold Milling, Planing & Rotomilling	\$ 6,037.50	\$ -	\$ -	\$ 4,164.00	\$ -	\$ 10,201.50
Demolition						\$ -
Pavement Markings (Paint)		\$ 720.00				\$ 720.00
Other Construction (List)	\$ 87,500.00	\$ 9,500.00	\$ -	\$ 391,328.00	\$ 15,000.00	\$ 503,328.00
	\$ -				\$ -	\$ -
Totals	\$ 411,130.50	\$ 49,953.00	\$ -	\$ 1,672,757.60	\$ 65,000.00	\$ 2,198,841.10

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

Part III. Work Subcontracted to Others

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

	1	2	3	4	5
Subcontractor					S.C.A.T.
Type of Work	Electrical			Electrical	TELEVISIONING
Subcontract Price	\$ 91,833.00			\$ 25,350.00	\$ 18,200.00
Amount Uncompleted	\$ 91,833.00	\$ -	\$ -	\$ 25,350.00	\$ -
Subcontractor					DUNTEMAN
Type of Work	Fencing			Diamond Grinding	ASPHALT
Subcontract Price	\$ 13,440.00			\$ 348,394.20	\$ 630,510.00
Amount Uncompleted	\$ 13,440.00	\$ -	\$ -	\$ 348,394.20	\$ -
Subcontractor					
Type of Work	Striping			Sewer Clean	BRICK WORK
Subcontract Price	\$ 6,246.00		\$ -	\$ 15,200.00	\$ 235,600.00
Amount Uncompleted	\$ 6,246.00	\$ -	\$ -	\$ 15,200.00	\$ 12,500.00
Subcontractor					
Type of Work			Landscaping	Striping	ELECTRICAL
Subcontract Price			\$ 37,044.85	\$ 63,870.00	\$ 1,702,130.00
Amount Uncompleted			\$ 5,000.00	\$ 63,870.00	\$ 60,000.00
Subcontractor					
Type of Work				Survey	LANDSCAPE
Subcontract Price				\$ 3,000.00	\$ 160,800.00
Amount Uncompleted	\$ -		\$ -	\$ 3,000.00	\$ 65,000.00
Subcontractor					
Type of Work			Striping		STRIPING
Subcontract Price			\$ 11,745.20		\$ 25,895.00
Amount Uncompleted	\$ -		\$ -		\$ -
Subcontractor					
Type of Work			Tree Care		TRAFF CONTL
Subcontract Price			\$ 2,756.25		\$ 36,050.00
Amount Uncompleted	\$ -		\$ -		\$ -
Subcontractor			\$ -		
Type of Work					TREE REMOVAL
Subcontract Price	\$ -		\$ -	\$ -	\$ 4,950.00
Amount Uncompleted	\$ -		\$ -	\$ -	\$ -
Total Uncompleted	\$ 111,519.00	\$ -	\$ 5,000.00	\$ 455,814.20	\$ 137,500.00
Totals	\$ 111,519.00	\$ -	\$ 51,546.30	\$ 455,814.20	\$ 2,814,135.00



Illinois Department of Transportation

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

Affidavit of Availability For the Letting of

03/08/13

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

Part I. Work Under Contract

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

	6	7	8	9	10	
Contract Number	12-28-417	13-00000-01-GM		881-020		
Contract With	Cook County HD	Libertyville	Deer Park	Highland Park	Downers Grove	
Estimated Completion Date	10/18/2013	11/29/2013	6/6/2013	10/15/2012	11/22/2013	
Total Contract Price	\$ 2,982,326.25	\$ 3,705,286.30	\$ 447,744.00	\$ 3,047,276.50	\$ 3,020,000.19	Accumulated Totals
Uncompleted Dollar Value if Firm is the Prime Contractor	\$ 2,982,326.25	\$ 3,705,286.30	\$ 447,744.00	\$ 28,970.00	\$ 3,020,000.19	\$ 10,184,326.74
Uncompleted Dollar Value if Firm is the Subcontractor		\$ -				\$ -
Total Value of All Work						\$ 10,184,326.74

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

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

						Accumulated Totals
Highway	\$ 74,990.00	\$ 62,740.00	\$ 50,352.00	\$ -	\$ 511,940.00	\$ 700,022.00
Portland Cement Concrete Paving	\$ -				\$ -	\$ -
HMA Plant Mix	\$ -					\$ -
HMA Paving	\$ 8,080.00	\$ 262,227.00	\$ 161,891.00	\$ -	\$ 102,788.35	\$ 534,986.35
Clean & Seal Cracks/ Joints	\$ 56,050.00					\$ 56,050.00
Aggregate Bases & Surfaces	\$ 10,097.00	\$ 13,650.00	\$ 450.00	\$ -	\$ 143,812.00	\$ 168,009.00
Highway, R.R. & Water Structures	\$ -					\$ -
Drainage	\$ 63,150.00	\$ 31,200.00	\$ 104,051.00	\$ -	\$ 289,160.00	\$ 487,561.00
Electrical	\$ -					\$ -
Cover and Seal Coats	\$ -			\$ -		\$ -
Concrete Construction	\$ 1,747,661.25	\$ 1,516,473.00	\$ 46,830.00	\$ -	\$ 356,152.50	\$ 3,667,116.75
Landscaping	\$ 10,100.00	\$ 33,055.40	\$ 30,500.00	\$ 10,000.00	\$ 111,727.00	\$ 195,382.40
Fencing	\$ -					\$ -
Guardrail	\$ -					\$ -
Painting	\$ -					\$ -
Signage	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Cold Milling, Planning & Rotomilling	\$ -	\$ 210,358.90	\$ 15,340.00	\$ -	\$ 1,338.00	\$ 227,036.90
Demolition	\$ -	\$ -				\$ -
Pavement Markings (Paint)	\$ -			\$ -		\$ -
Other Construction (List)	\$ 372,175.00	\$ 410,000.00	\$ 30,000.00	\$ 15,000.00	\$ 441,000.00	\$ 1,268,175.00
		\$ -	\$ -			\$ -
Totals	\$ 2,342,303.25	\$ 2,539,704.30	\$ 439,414.00	\$ 25,000.00	\$ 1,957,917.85	\$ 7,304,339.40

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

Part III. Work Subcontracted to Others

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

	6	7	8	9	10
Subcontractor					
Type of Work	Electrical	Electrical	Tree Care	Electric	Electric
Subcontract Price	\$ 86,850.00	\$ 4,000.00	\$ 8,330.00	\$ 650.00	\$ 79,110.00
Amount Uncompleted	\$ 86,850.00	\$ 4,000.00	\$ 8,330.00	\$ -	\$ 79,110.00
Subcontractor					
Type of Work	Diamond Grinding	HMA Paving		Fencing	HMA Paving
Subcontract Price	\$ 442,748.00	\$ 1,119,582.00		\$ 3,970.00	\$ 963,474.34
Amount Uncompleted	\$ 442,748.00	\$ 1,119,582.00	\$ -	\$ 3,970.00	\$ 963,474.34
Subcontractor					
Type of Work	Sewer Cleaning	Striping		HMA Paving	Striping
Subcontract Price	\$ 4,850.00	\$ 42,000.00		\$ 363,661.00	\$ 4,888.00
Amount Uncompleted	\$ 4,850.00	\$ 42,000.00	\$ -	\$ -	\$ 4,888.00
Subcontractor					
Type of Work	Striping			Signage	Tree Care
Subcontract Price	\$ 99,575.00			\$ 14,581.50	\$ 14,610.00
Amount Uncompleted	\$ 99,575.00	\$ -	\$ -	\$ -	\$ 14,610.00
Subcontractor					
Type of Work	Survey			Striping	
Subcontract Price	\$ 6,000.00			\$ 10,290.00	
Amount Uncompleted	\$ 6,000.00			\$ -	\$ -
Subcontractor					
Type of Work					
Subcontract Price				\$ -	
Amount Uncompleted				\$ -	\$ -
Subcontractor					
Type of Work					
Subcontract Price					
Amount Uncompleted					
Subcontractor					
Type of Work					
Subcontract Price				\$ -	\$ -
Amount Uncompleted			\$ -	\$ -	\$ -
Total Uncompleted	\$ 640,023.00	\$ 1,165,582.00	\$ 8,330.00	\$ 3,970.00	\$ 1,062,082.34
Totals	\$ 640,023.00	\$ 1,165,582.00	\$ 8,330.00	\$ 393,152.50	\$ 1,062,082.34

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

Part I. Work Under Contract

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

	11	12	13	14	15	
Contract Number	05-A5021-07-RP					
Contract With	Cook County HD				Harper College	
Estimated Completion Date	10/26/2013				11/21/2012	
Total Contract Price	\$ 8,720,096.40				\$ 4,248,969.00	Accumulated Totals
Uncompleted Dollar Value if Firm is the Prime Contractor	\$ 8,720,096.40	\$ -	\$ -	\$ -	\$ 215,000.00	\$ 8,935,096.40
Uncompleted Dollar Value if Firm is the Subcontractor						\$ -
Total Value of All Work						\$ 8,935,096.40

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

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

						Accumulated Totals
Earthwork	\$ 1,005,655.00			\$ -	\$ -	\$ 1,005,655.00
Portland Cement Concrete Paving	\$ 1,423,641.00					\$ 1,423,641.00
HMA Plant Mix						\$ -
Asphalt Paving	\$ -				\$ -	\$ -
Seal & Seal Cracks/ Joints						\$ -
Aggregate Bases & Surfaces	\$ 382,693.50				\$ -	\$ 382,693.50
Highway,R.R.& Water Structures						\$ -
Drainage	\$ 778,703.00				\$ -	\$ 778,703.00
Electrical						\$ -
Cover and Seal Coats						\$ -
Concrete Construction	\$ 1,293,868.40				\$ -	\$ 1,293,868.40
Landscaping	\$ 163,763.00				\$ -	\$ 163,763.00
Fencing						\$ -
Guardrail						\$ -
Painting						\$ -
Signage	\$ -					\$ -
Cold Milling, Planning & Rotomilling	\$ 29,016.00				\$ -	\$ 29,016.00
Demolition						\$ -
Pavement Markings (Paint)	\$ -					\$ -
Other Construction (List)	\$ 1,130,020.00				\$ 10,000.00	\$ 1,140,020.00
						\$ -
Totals	\$ 6,207,359.90	\$ -	\$ -	\$ -	\$ 10,000.00	\$ 6,217,359.90

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

Part III. Work Subcontracted to Others

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

	11	12	13	14	15
Subcontractor					
Type of Work	Diamond Grind				Electrical
Subcontract Price	\$ 80,825.00				\$ 603,000.00
Amount Uncompleted	\$ 80,825.00	\$ -		\$ -	\$ 50,000.00
Subcontractor					
Type of Work	Electrical				Fencing
Subcontract Price	\$ 1,591,929.50				\$ 33,928.00
Amount Uncompleted	\$ 1,591,929.50			\$ -	\$ -
Subcontractor					
Type of Work	Fence				HMA Pvmt
Subcontract Price	\$ 61,355.00				\$ 605,977.00
Amount Uncompleted	\$ 61,355.00		\$ -		\$ -
Subcontractor					
Type of Work	HMA Paving				Irrigation
Subcontract Price	\$ 155,722.00				\$ 97,000.00
Amount Uncompleted	\$ 155,722.00		\$ -		\$ 5,000.00
Subcontractor					
Type of Work	Landscaping				Landscaping
Subcontract Price	\$ 149,525.00				\$ 439,625.00
Amount Uncompleted	\$ 149,525.00		\$ -		\$ 150,000.00
Subcontractor					
Type of Work	Retaining Wall				Tree Care
Subcontract Price	\$ 356,324.00				\$ 4,900.00
Amount Uncompleted	\$ 356,324.00				\$ -
Subcontractor					
Type of Work	Signage				
Subcontract Price	\$ 27,370.00				
Amount Uncompleted	\$ 27,370.00				
Subcontractor					
Type of Work	Sewer Clean				
Subcontract Price	\$ 7,746.00				
Amount Uncompleted	\$ 7,746.00				
Subcontractor					
Type of Work	Tree Care				
Subcontract Price	\$ 2,780.00				
Amount Uncompleted	\$ 2,780.00				
Subcontractor					
Type of Work					
Subcontract Price					
Amount Uncompleted					
Subcontractor					
Type of Work	Striping				
Subcontract Price	\$ 79,160.00		\$ -		
Amount Uncompleted	\$ 79,160.00		\$ -		
Total Uncompleted	\$ 2,512,736.50	\$ -	\$ -	\$ -	\$ 205,000.00
Totals	\$ 2,512,736.50	\$ -	\$ -	\$ -	\$ 1,784,430.00



Illinois Department of Transportation

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

**Affidavit of Availability
For the Letting of**

03/08/13

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

Part I. Work Under Contract

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

	16	17	18	19	20	
Contract Number						
Contract With						
Estimated Completion Date						
Total Contract Price						Accumulated Totals
Uncompleted Dollar Value if Firm is the Prime Contractor	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Uncompleted Dollar Value if Firm is the Subcontractor						\$ -
Total Value of All Work						\$ -

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

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

Accumulated
Totals

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

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

Part III. Work Subcontracted to Others

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

	16	17	18	19	20
Subcontractor					
Type of Work			Fence		
Subcontract Price			\$ 4,000.00		
Amount Uncompleted	\$ -	\$ -	\$ -		\$ -
Subcontractor					
Type of Work			Televising		
Subcontract Price			\$ 7,500.00		
Amount Uncompleted		\$ -	\$ -		\$ -
Subcontractor					
Type of Work					
Subcontract Price			\$ -		
Amount Uncompleted	\$ -	\$ -	\$ -		\$ -
Subcontractor					
Type of Work					
Subcontract Price			\$ -		\$ -
Amount Uncompleted	\$ -	\$ -	\$ -		\$ -
Subcontractor					
Type of Work					
Subcontract Price					
Amount Uncompleted		\$ -		\$ -	\$ -
Subcontractor					
Type of Work					
Subcontract Price				\$ -	
Amount Uncompleted				\$ -	
Subcontractor					
Type of Work					
Subcontract Price				\$ -	\$ -
Amount Uncompleted				\$ -	\$ -
Subcontractor					
Type of Work					
Subcontract Price				\$ -	\$ -
Amount Uncompleted				\$ -	\$ -
Subcontractor					
Type of Work					
Subcontract Price				\$ -	\$ -
Amount Uncompleted				\$ -	\$ -
Total Uncompleted	\$ -	\$ -	\$ -	\$ -	\$ -
Totals	\$ -	\$ -	\$ 11,500.00	\$ -	\$ -



Illinois Department of Transportation

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

**Affidavit of Availability
For the Letting of**

03/08/13

either typing or using black ink. "Authorization to Bid" will not be issued
completed in detail. Use additional forms as needed to list all work.

Part I. Work Under Contract

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

	21	22	23	24	25	
Contract Number	63612					
Contract With	IDOT				Bensenville	
Estimated Completion Date	40 Wrk Days				6/31/2012	
Total Contract Price	\$ 932,860.70				\$ 3,564,571.14	Accumulated Totals
Uncompleted Dollar Value if Firm is the Prime Contractor	\$ 932,860.70	\$ -	\$ -	\$ -	\$ 26,000.00	\$ 958,860.70
Uncompleted Dollar Value if Firm is the Subcontractor						\$ -
Total Value of All Work						\$ 958,860.70

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

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

						Accumulated Totals
Work	\$ 100,000.00	\$ -	\$ -	\$ -	\$ 5,000.00	\$ 105,000.00
Standard Cement Concrete Paving					\$ -	\$ -
HMA Plant Mix						\$ -
HMA Paving	\$ 98,636.00	\$ -	\$ -	\$ -	\$ -	\$ 98,636.00
Clean & Seal Cracks/ Joints	\$ -		\$ -	\$ -		\$ -
Aggregate Bases & Surfaces	\$ 26,870.00	\$ -	\$ -	\$ -	\$ -	\$ 26,870.00
Highway, R.R. & Water Structures						\$ -
Drainage	\$347,881.00	\$ -	\$ -	\$ -	\$ -	\$ 347,881.00
Electrical						\$ -
Cover and Seal Coats						\$ -
Concrete Construction	\$ 135,738.50	\$ -	\$ -		\$ -	\$ 135,738.50
Landscaping	\$ 27,111.00	\$ -	\$ -		\$ 18,500.00	\$ 45,611.00
Fencing				\$ -		\$ -
Guardrail						\$ -
Painting						\$ -
Signing	\$ -		\$ -	\$ -		\$ -
Cold Milling, Planning & Rotomilling	\$ -	\$ -	\$ -	\$ -		\$ -
Demolition						\$ -
Pavement Markings (Paint)						\$ -
Other Construction (List)	\$ 115,502.00	\$ -	\$ -	\$ -	\$ 2,500.00	\$ 118,002.00
	\$ -					\$ -
Totals	\$ 851,738.50	\$ -	\$ -	\$ -	\$ 26,000.00	\$ 877,738.50

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

Part III. Work Subcontracted to Others

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

	21	22	23	24	25
Subcontractor					
Type of Work	Electrical			Sewer Video	
Subcontract Price	\$ 14,400.00			\$ 21,250.00	
Amount Uncompleted	\$ 14,400.00	\$ -	\$ -	\$ -	
Subcontractor					
Type of Work	Environmental				
Subcontract Price	\$ 7,750.00				
Amount Uncompleted	\$ 7,750.00	\$ -	\$ -	\$ -	
Subcontractor					
Type of Work	Fencing				
Subcontract Price	\$ 12,000.00				
Amount Uncompleted	\$ 12,000.00	\$ -	\$ -		
Subcontractor					
Type of Work	Landscaping				
Subcontract Price	\$ 22,920.00				
Amount Uncompleted	\$ 22,920.00	\$ -	\$ -		
Subcontractor					
Type of Work	Sewer Televising				
Subcontract Price	\$ 2,073.00				
Amount Uncompleted	\$ 2,073.00	\$ -			
Subcontractor					
Type of Work	Signage				
Subcontract Price	\$ 4,475.00	\$ -			
Amount Uncompleted	\$ 4,475.00	\$ -			
Subcontractor					
Type of Work	Striping				
Subcontract Price	\$ 4,567.20	\$ -			
Amount Uncompleted	\$ 4,567.20	\$ -			
Subcontractor					
Type of Work	Tree Care				
Subcontract Price	\$ 12,937.00	\$ -			
Amount Uncompleted	\$ 12,937.00	\$ -			
Total Uncompleted	\$ 81,122.20	\$ -	\$ -	\$ -	\$ -
Totals	\$ 81,122.20	\$ -	\$ -	\$ 21,250.00	\$ -



Illinois Department of Transportation

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

**Affidavit of Availability
For the Letting of**

03/08/13

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

Part I. Work Under Contract

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

	26	27	28	29	30	
Contract Number					60N06	
Contract With					IDOT - 189	
Estimated Completion Date					120 Cal Days	
Total Contract Price					\$ 1,247,731.00	Accumulated Totals
Uncompleted Dollar Value if Firm is the Prime Contractor	\$ -	\$ -	\$ -	\$ -	\$ 1,247,731.00	\$ 1,247,731.00
Uncompleted Dollar Value if Firm is the Subcontractor						\$ -
Total Value of All Work						\$ 1,247,731.00

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

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

						Accumulated Totals
Earthwork	\$ -			\$ -	\$ 816,951.25	\$ 816,951.25
land Cement Concrete Paving					\$ -	\$ -
HMA Plant Mix						\$ -
HMA Paving	\$ -				\$ -	\$ -
Clean & Seal Cracks/ Joints					\$ -	\$ -
Aggregate Bases & Surfaces	\$ -			\$ -	\$ 3,995.00	\$ 3,995.00
Highway, R.R. & Water Structures					\$ -	\$ -
Drainage	\$ -	\$ -		\$ -	\$ 37,760.00	\$ 37,760.00
Electrical						\$ -
Cover and Seal Coats						\$ -
Concrete Construction	\$ -			\$ -	\$ -	\$ -
Landscaping	\$ -			\$ -	\$ 61,289.75	\$ 61,289.75
Fencing						\$ -
Guardrail						\$ -
Painting						\$ -
Signing					\$ 2,060.00	\$ 2,060.00
Cold Milling, Planning & Rotomilling	\$ -	\$ -			\$ -	\$ -
Demolition						\$ -
Pavement Markings (Paint)					\$ -	\$ -
Other Construction (List)	\$ -	\$ -		\$ -	\$ 299,000.00	\$ 299,000.00
	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Totals	\$ -	\$ -	\$ -	\$ -	\$ 1,221,056.00	\$ 1,221,056.00

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

Part III. Work Subcontracted to Others

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

	26	27	28	29	30
Subcontractor					
Type of Work					Environmental
Subcontract Price					\$ 6,250.00
Amount Uncompleted	\$ -	\$ -	\$ -	\$ -	\$ 6,250.00
Subcontractor					
Type of Work					Fencing
Subcontract Price					\$ 14,175.00
Amount Uncompleted	\$ -	\$ -	\$ -		\$ 14,175.00
Subcontractor					
Type of Work					Tree Care
Subcontract Price					\$ 6,250.00
Amount Uncompleted			\$ -		\$ 6,250.00
Subcontractor					
Type of Work					
Subcontract Price					
Amount Uncompleted					\$ -
Subcontractor					
Type of Work					
Subcontract Price					\$ -
Amount Uncompleted					\$ -
Subcontractor					
Type of Work					
Subcontract Price					\$ -
Amount Uncompleted					\$ -
Subcontractor					
Type of Work					
Subcontract Price					\$ -
Amount Uncompleted					\$ -
Subcontractor					
Type of Work					
Subcontract Price					\$ -
Amount Uncompleted					\$ -
Total Uncompleted	\$ -	\$ -	\$ -	\$ -	\$ 26,675.00
Totals	\$ -	\$ -	\$ -	\$ -	\$ 26,675.00



Illinois Department of Transportation

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

**Affidavit of Availability
For the Letting of**

03/08/13

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

Part I. Work Under Contract

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

	31	32	33	34	35	
Contract Number		2009-066 I				
Contract With		IDOT - 137				
Estimated Completion Date		60 WRK DAYS				
Total Contract Price		\$ 1,622,668.00				Accumulated Totals
Uncompleted Dollar Value if Firm is the Prime Contractor	\$ -	\$ 5,000.00	\$ -	\$ -	\$ -	\$ 5,000.00
Uncompleted Dollar Value if Firm is the Subcontractor						\$ -
Total Value of All Work						\$ 5,000.00

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

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

						Accumulated Totals
Earthwork		\$ -				\$ -
Island Cement Concrete Paving						\$ -
HMA Plant Mix						\$ -
HMA Paving		\$ -				\$ -
Clean & Seal Cracks/ Joints						\$ -
Aggregate Bases & Surfaces		\$ -				\$ -
Highway, R.R. & Water Structures						\$ -
Drainage		\$ 5,000.00				\$ 5,000.00
Electrical						\$ -
Cover and Seal Coats						\$ -
Concrete Construction		\$ -				\$ -
Landscaping		\$ -				\$ -
Fencing						\$ -
Guardrail						\$ -
Painting						\$ -
Signing		\$ -				\$ -
Cold Milling, Planning & Rotomilling		\$ -				\$ -
Demolition		\$ -				\$ -
Pavement Markings (Paint)						\$ -
Other Construction (List)		\$ -				\$ -
	\$ -					\$ -
Totals	\$ -	\$ 5,000.00	\$ -	\$ -	\$ -	\$ 5,000.00

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



Illinois Department of Transportation

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

**Affidavit of Availability
For the Letting of**

03/08/13

either typing or using black ink. "Authorization to Bid" will not be issued completed in detail. Use additional forms as needed to list all work.

Part I. Work Under Contract

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

	36	37	38	39	40	
Contract Number						
Contract With						
Estimated Completion Date						
Total Contract Price						Accumulated Totals
Uncompleted Dollar Value if Firm is the Prime Contractor	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Uncompleted Dollar Value if Firm is the Subcontractor					\$ -	\$ -
Total Value of All Work						\$ -

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

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

Accumulated
Totals

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

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

Part III. Work Subcontracted to Others

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

	36	37	38	39	40
Subcontractor					
Type of Work					
Subcontract Price					
Amount Uncompleted					
Subcontractor					
Type of Work					
Subcontract Price				\$ -	
Amount Uncompleted				\$ -	
Subcontractor					
Type of Work					
Subcontract Price					\$ -
Amount Uncompleted					\$ -
Subcontractor					
Type of Work					
Subcontract Price					\$ -
Amount Uncompleted		\$ -			\$ -
Subcontractor					
Type of Work					
Subcontract Price	\$ -				
Amount Uncompleted	\$ -	\$ -			
Subcontractor					
Type of Work					
Subcontract Price	\$ -				
Amount Uncompleted	\$ -				
Subcontractor					
Type of Work					
Subcontract Price	\$ -				
Amount Uncompleted	\$ -				
Subcontractor					
Type of Work					
Subcontract Price	\$ -				
Amount Uncompleted	\$ -				
Subcontractor					
Type of Work					
Subcontract Price	\$ -				
Amount Uncompleted	\$ -				
Subcontractor					
Type of Work					
Subcontract Price	\$ -				
Amount Uncompleted	\$ -				
Total Uncompleted	\$ -	\$ -	\$ -	\$ -	\$ -
Totals	\$ -	\$ -	\$ -	\$ -	\$ -



Illinois Department of Transportation

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

Affidavit of Availability For the Letting of

03/08/13

either typing or using black ink. "Authorization to Bid" will not be issued completed in detail. Use additional forms as needed to list all work.

Part I. Work Under Contract

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

	41	42	43	44	45	
Contract Number						
Contract With						
Estimated Completion Date						
Total Contract Price						Accumulated Totals
Uncompleted Dollar Value if Firm is the Prime Contractor	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Uncompleted Dollar Value if Firm is the Subcontractor						\$ -
Total Value of All Work						\$ -

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

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

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

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



Illinois Department of Transportation

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

**Affidavit of Availability
For the Letting of**

03/08/13

either typing or using black ink. "Authorization to Bid" will not be issued
completed in detail. Use additional forms as needed to list all work.

Part I. Work Under Contract

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

	46	47	48	49	50	
Contract Number	63731					
Contract With	IDOT - Item 21					
Estimated Completion Date	30 Wrk Days					
Total Contract Price	\$ 330,177.00				\$ -	Accumulated Totals
Uncompleted Dollar Value if Firm is the Prime Contractor	\$ 330,177.00	\$ -	\$ -	\$ -		\$ 330,177.00
Uncompleted Dollar Value if Firm is the Subcontractor		\$ -	\$ -	\$ -	\$ -	\$ -
Total Value of All Work						\$ 330,177.00

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

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

						Accumulated Totals
Earthwork	\$ 34,400.00	\$ -	\$ -	\$ -	\$ -	\$ 34,400.00
Land Cement Concrete Paving	\$ -	\$ -				\$ -
HMA Plant Mix					\$ -	\$ -
HMA Paving	\$ 20,134.00	\$ -	\$ -		\$ -	\$ 20,134.00
Clean & Seal Cracks/ Joints						\$ -
Aggregate Bases & Surfaces	\$ 16,987.00	\$ -	\$ -	\$ -	\$ -	\$ 16,987.00
Highway,R.R.& Water Structures						\$ -
Drainage	\$ 31,235.00	\$ -	\$ -	\$ -	\$ -	\$ 31,235.00
Electrical						\$ -
Cover and Seal Coats						\$ -
Concrete Construction	\$ 73,319.00	\$ -	\$ -	\$ -	\$ -	\$ 73,319.00
Landscaping	\$ 45,171.00	\$ -	\$ -	\$ -	\$ -	\$ 45,171.00
Fencing						\$ -
Guardrail						\$ -
Painting						\$ -
Signing	\$ -	\$ -	\$ -	\$ -		\$ -
Cold Milling, Planning & Rotomilling	\$ -	\$ -	\$ -		\$ 5,000.00	\$ 5,000.00
Demolition						\$ -
Pavement Markings (Paint)						\$ -
Other Construction (List)	\$ 66,171.00	\$ -	\$ -	\$ -	\$ 3,500.00	\$ 69,671.00
						\$ -
Totals	\$ 287,417.00	\$ -	\$ -	\$ -	\$ 8,500.00	\$ 295,917.00

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

Part III. Work Subcontracted to Others

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

	46	47	48	49	50
Subcontractor					
Type of Work	Electric				
Subcontract Price	\$ 20,163.00				
Amount Uncompleted	\$ 20,163.00	\$ -		\$ -	
Subcontractor					
Type of Work	Landscape				
Subcontract Price	\$ 3,660.00				
Amount Uncompleted	\$ 3,660.00	\$ -	\$ -	\$ -	
Subcontractor					
Type of Work	Signs				
Subcontract Price	\$ 11,750.00				
Amount Uncompleted	\$ 11,750.00	\$ -	\$ -	\$ -	
Subcontractor					
Type of Work	Striping				
Subcontract Price	\$ 4,572.00				
Amount Uncompleted	\$ 4,572.00	\$ -	\$ -		
Subcontractor					
Type of Work	Tree Care				
Subcontract Price	\$ 2,615.00				
Amount Uncompleted	\$ 2,615.00	\$ -			
Subcontractor					
Type of Work					
Subcontract Price	\$ -				
Amount Uncompleted	\$ -	\$ -		\$ -	
Subcontractor					
Type of Work					
Subcontract Price	\$ -				
Amount Uncompleted	\$ -	\$ -	\$ -	\$ -	
Subcontractor					
Type of Work					
Subcontract Price	\$ -				
Amount Uncompleted	\$ -	\$ -			
Total Uncompleted	\$ 42,760.00	\$ -	\$ -	\$ -	\$ -
Totals	\$ 42,760.00	\$ -	\$ -	\$ -	\$ -



Illinois Department of Transportation

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

Affidavit of Availability For the Letting of

03/08/13

either typing or using black ink. "Authorization to Bid" will not be issued completed in detail. Use additional forms as needed to list all work.

Part I. Work Under Contract

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

	51	52	53	54	55	
Contract Number						
Contract With						
Estimated Completion Date						
Total Contract Price						Accumulated Totals
Uncompleted Dollar Value if Firm is the Prime Contractor	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Uncompleted Dollar Value if Firm is the Subcontractor		\$ -		\$ -	\$ -	\$ -
Total Value of All Work						\$ -

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

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

Accumulated
Totals

	51	52	53	54	55	Accumulated Totals
Earthwork	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Portland Cement Concrete Paving	\$ -	\$ -				\$ -
A Plant Mix						\$ -
HMA Paving	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Clean & Seal Cracks/ Joints						\$ -
Aggregate Bases & Surfaces	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Highway, R.R. & Water Structures						\$ -
Drainage	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Electrical						\$ -
Cover and Seal Coats						\$ -
Concrete Construction	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Landscaping	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Fencing						\$ -
Guardrail						\$ -
Painting						\$ -
Signing	\$ -		\$ -			\$ -
Cold Milling, Planning & Rotomilling	\$ -	\$ -			\$ -	\$ -
Demolition						\$ -
Pavement Markings (Paint)	\$ -					\$ -
Other Construction (List)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
						\$ -
Totals	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

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

Part III. Work Subcontracted to Others

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

	51	52	53	54	55
Subcontractor					
Type of Work					
Subcontract Price	\$ -				
Amount Uncompleted	\$ -		\$ -		
Subcontractor					
Type of Work					
Subcontract Price					
Amount Uncompleted	\$ -		\$ -		
Subcontractor					
Type of Work					
Subcontract Price					
Amount Uncompleted	\$ -		\$ -		
Subcontractor					
Type of Work					
Subcontract Price					
Amount Uncompleted	\$ -		\$ -		
Subcontractor					
Type of Work					
Subcontract Price					
Amount Uncompleted	\$ -		\$ -		
Subcontractor					
Type of Work					
Subcontract Price	\$ -				
Amount Uncompleted	\$ -				
Subcontractor					
Type of Work					
Subcontract Price	\$ -				
Amount Uncompleted	\$ -				
Subcontractor					
Type of Work					
Subcontract Price	\$ -				
Amount Uncompleted	\$ -				
Subcontractor					
Type of Work					
Subcontract Price	\$ -				
Amount Uncompleted	\$ -				
Total Uncompleted	\$ -	\$ -	\$ -	\$ -	\$ -
Totals	\$ -	\$ -	\$ -	\$ -	\$ -



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

Part I. Work Under Contract

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

Contract Number						
Contract With						
Estimated Completion Date						
Total Contract Price						SUMMARY
Uncompleted Dollar Value if Firm is the Prime Contractor						Accumulated Totals
Uncompleted Dollar Value if Firm is the Subcontractor						\$ 24,569,866.14
						\$ -
Total Value of All Work						\$ 24,569,866.14

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

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

Earthwork						Accumulated Totals
Portland Cement Concrete Paving						\$ 2,797,129.25
A Plant Mix						\$ 1,423,641.00
HMA Paving						\$ -
Clean & Seal Cracks/ Joints						\$ 711,277.35
Aggregate Bases & Surfaces						\$ 71,020.00
Highway,R.R.& Water Structures						\$ 635,052.50
Drainage						\$ -
Electrical						\$ 1,737,017.00
Cover and Seal Coats						\$ -
Concrete Construction						\$ -
Landscaping						\$ 6,507,399.59
Fencing						\$ 560,484.81
Guardrail						\$ -
Painting						\$ -
Signing						\$ 7,060.00
Cold Milling, Planning & Rotomilling						\$ 271,254.40
Demolition						\$ -
Pavement Markings (Paint)						\$ 720.00
Other Construction (List)						\$ 3,398,196.00
						\$ -
						\$ -
Totals	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 18,120,251.90

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

Part III. Work Subcontracted to Others

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

Subcontractor					
Type of Work					
Subcontract Price	\$ -	\$ -	\$ -	\$ -	\$ -
Amount Uncompleted	\$ -	\$ -	\$ -	\$ -	\$ -
Subcontractor					
Type of Work					
Subcontract Price	\$ -	\$ -	\$ -	\$ -	\$ -
Amount Uncompleted	\$ -	\$ -	\$ -	\$ -	\$ -
Subcontractor					
Type of Work					
Subcontract Price	\$ -	\$ -	\$ -	\$ -	\$ -
Amount Uncompleted	\$ -	\$ -	\$ -	\$ -	\$ -
Subcontractor					
Type of Work					
Subcontract Price	\$ -	\$ -	\$ -	\$ -	\$ -
Amount Uncompleted	\$ -	\$ -	\$ -	\$ -	\$ -
Subcontractor					
Type of Work					
Subcontract Price	\$ -	\$ -	\$ -	\$ -	\$ -
Amount Uncompleted	\$ -	\$ -	\$ -	\$ -	\$ -
Total Uncompleted					\$ -
SUMMARY TOTALS	\$ -	\$ -	\$ -	\$ -	\$ 6,458,114.24

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

Subscribed and sworn to before me
this 27 day of March, 2013

Type or Print

Joseph Lampignano
Officer or Director

Secretary
Title

Signed

Company

Address

Page 24 of 24

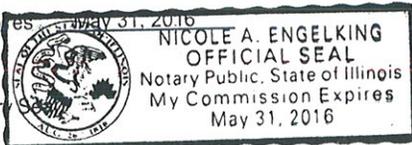
A Lamp Concrete Contractors, Inc.

1900 Wright Blvd.

Schaumburg, Illinois 60193

BC 57 (Rev. 08/17/10)

My commission expires May 31, 2016



(Notary Seal)



**Illinois Department
of Transportation**

Certificate of Eligibility

A. Lamp Concrete Contractors, Inc.
1900 Wright Boulevard Schaumburg, IL 60193

Contractor No 3315

WHO HAS FILED WITH THE DEPARTMENT AN APPLICATION FOR PREQUALIFICATION STATEMENT OF EXPERIENCE, EQUIPMENT AND FINANCIAL CONDITION IS HEREBY QUALIFIED TO BID AT ANY OF DEPARTMENT OF TRANSPORTATION LETTINGS IN THE CLASSES OF WORK AND WITHIN THE AMOUNT AND OTHER LIMITATIONS OF EACH CLASSIFICATION, AS LISTED BELOW, FOR SUCH PERIOD AS THE UNCOMPLETED WORK FROM ALL SOURCES DOES NOT EXCEED \$62,911,000.00

001	EARTHWORK	\$7,550,000	
002	PCC PAVING	\$10,500,000	
005	HMA PAVING	\$6,475,000	B
012	DRAINAGE	\$11,875,000	
017	CONCRETE CONSTRUCTION	\$15,475,000	
018	LANDSCAPING	\$2,925,000	
032	COLD MILL, PLAN. & ROTOMILL	\$5,150,000	
08A	AGGREGATE BASES & SURF. (A)	\$3,025,000	

THIS CERTIFICATE OF ELIGIBILITY IS VALID FROM 4/26/2012 TO 4/30/2013 INCLUSIVE, AND SUPERSEDES ANY CERTIFICATE PREVIOUSLY ISSUED, BUT IS SUBJECT TO REVISION OR REVOCATION, IF AND WHEN CHANGES IN THE FINANCIAL CONDITION OF THE CONTRACTING FIRM OR OTHER FACTS JUSTIFY SUCH REVISIONS OR REVOCATION. ISSUED AT SPRINGFIELD, ILLINOIS ON 4/27/2012.

B Restricted to 1200 tons in any 1 contract (Class I and/or BAM) or as specified by local agency


Acting Engineer of Construction



1. THIS AGREEMENT, made and concluded the 15TH day of April, 2013, between the Village of La Grange acting by and through its President and Board of Trustees known as the party of the first part, and A Lamp Concrete Contractors, Inc. his/their executors, administrators, successors or assigns, known as the party of the second part.

2. Witnesseth: That for and in consideration of the payments and agreements mentioned in the Proposal hereto attached, to be made and performed by the party of the first part, and according to the terms expressed in the Bond referring to these presents, the party of the second part agrees with said party of the first part at his/their own proper cost and expense to do all the work, furnish all materials and all labor necessary to complete the work in accordance with the plans and specifications hereinafter described, and in full compliance with all of the terms of this agreement and the requirements of the Engineer under it.

3. And it is also understood and agreed that the Notice to Contractors, Special Provisions, Proposal and Contract Bond hereto attached, and the Plans for Section 12-00088-00-FP in the Village of La Grange, approved by the Department of Transportation of the State of Illinois January 2, 2013, are essential documents of this contract and are a part hereof.

4. IN WITNESS WHEREOF, The said parties have executed these presents on the date above mentioned.

Attest: Thomas Morsch Village Clerk (Seal)



Attest: Secretary

The Village of La Grange By Party of the First Part

(If a Corporation) Corporate Name A Lamp Concrete Contractors, Inc. By Accele Sampigiano President Party of the Second Part

(If a Co-Partnership) Partners doing Business under the firm name of Party of the Second Part (If an individual) Party of the Second Part

IN TESTIMONY WHEREOF, the said PRINCIPAL and the said SURETY have caused this instrument to be signed by their respective officers this 12 day of April A.D. 2013

PRINCIPAL

A. Lamp Concrete Contractors, Inc.
(Company Name)

By: *[Signature]*
(Signature & Title)

Attest: _____
(Signature & Title)

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

STATE OF ILLINOIS,
COUNTY OF Cook

I, Nicole A. Engelking, a Notary Public in and for said county, do hereby certify that
Adele Lampignano and Joseph Lampignano

(Insert names of individuals signing on behalf or PRINCIPAL)

who are each personally known to me to be the same persons whose names are subscribed to the foregoing instrument on behalf of PRINCIPAL, 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 15th day of April A.D. 2013

My commission expires 5/31/16

[Signature]
NICOLE A. ENGELKING
Notary Public, State of Illinois
My Commission Expires May 31, 2016 (SEAL)

SURETY

The Hanover Insurance Company
(Name of Surety)

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

Thomas O. Chambers (SEAL)

STATE OF WISCONSIN
COUNTY OF Kenosha

I, Kimberly S. Rasch, a Notary Public in and for said county, do hereby certify that
Thomas O. Chambers

(Insert names of individuals signing on behalf or SURETY)

who are each personally known to me to be the same persons whose names are subscribed to the foregoing instrument on behalf of 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 12 day of April A.D. 2013

My commission expires 3/16/2014

[Signature]
Notary Public
KIMBERLY S. RASCH
STATE OF WISCONSIN (SEAL)

Approved this 15th day of APRIL, A.D. 2013

Attest: *[Signature]*

VILLAGE OF LAGANUCÉ
(Awarding Authority)

(Chairman/Mayor/President)

Handwritten text in blue ink, possibly a signature or name, located in the upper right quadrant of the page.

Rectangular stamp or label with illegible text and a circular emblem on the right side, located in the middle left area.

Faint handwritten text in blue ink, possibly a signature or name, located in the lower middle area.

Faint handwritten text in blue ink, possibly a signature or name, located in the lower middle area.

Faint handwritten text in blue ink, possibly a signature or name, located in the lower middle area.

Faint handwritten text in blue ink, possibly a signature or name, located in the lower middle area.

THE HANOVER INSURANCE COMPANY
MASSACHUSETTS BAY INSURANCE COMPANY
CITIZENS INSURANCE COMPANY OF AMERICA

POWERS OF ATTORNEY
CERTIFIED COPY

KNOW ALL MEN BY THESE PRESENTS: That THE HANOVER INSURANCE COMPANY and MASSACHUSETTS BAY INSURANCE COMPANY, both being corporations organized and existing under the laws of the State of New Hampshire, and CITIZENS INSURANCE COMPANY OF AMERICA, a corporation organized and existing under the laws of the State of Michigan, do hereby constitute and appoint

Thomas O. Chambers, Kimberly S. Rasch and/or Todd Schaap

of Racine, WI and each is a true and lawful Attorney(s)-in-fact to sign, execute, seal, acknowledge and deliver for, and on its behalf, and as its act and deed any place within the United States, or, if the following line be filled in, only within the area therein designated any and all bonds, recognizances, undertakings, contracts of indemnity or other writings obligatory in the nature thereof, as follows:

Any such obligations in the United States, not to exceed Forty Million and No/100 (\$40,000,000) in any single instance

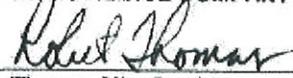
and said companies hereby ratify and confirm all and whatsoever said Attorney(s)-in-fact may lawfully do in the premises by virtue of these presents. These appointments are made under and by authority of the following Resolution passed by the Board of Directors of said Companies which resolutions are still in effect:

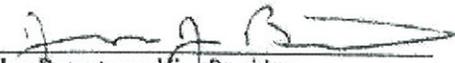
"RESOLVED, That the President or any Vice President, in conjunction with any Vice President, be and they are hereby authorized and empowered to appoint Attorneys-in-fact of the Company, in its name and as its acts, to execute and acknowledge for and on its behalf as Surety any and all bonds, recognizances, contracts of indemnity, waivers of citation and all other writings obligatory in the nature thereof, with power to attach thereto the seal of the Company. Any such writings so executed by such Attorneys-in-fact shall be as binding upon the Company as if they had been duly executed and acknowledged by the regularly elected officers of the Company in their own proper persons." (Adopted October 7, 1981 - The Hanover Insurance Company; Adopted April 14, 1982 - Massachusetts Bay Insurance Company; Adopted September 7, 2001 - Citizens Insurance Company of America)

IN WITNESS WHEREOF, THE HANOVER INSURANCE COMPANY, MASSACHUSETTS BAY INSURANCE COMPANY and CITIZENS INSURANCE COMPANY OF AMERICA have caused these presents to be sealed with their respective corporate seals, duly attested by two Vice Presidents, this 1st day of March 2012.



THE HANOVER INSURANCE COMPANY
MASSACHUSETTS BAY INSURANCE COMPANY
CITIZENS INSURANCE COMPANY OF AMERICA


Robert Thomas, Vice President


Joe Brenstrom, Vice President

THE COMMONWEALTH OF MASSACHUSETTS)
COUNTY OF WORCESTER) ss.

On this 1st day of March 2012 before me came the above named Vice Presidents of The Hanover Insurance Company, Massachusetts Bay Insurance Company and Citizens Insurance Company of America, to me personally known to be the individuals and officers described herein, and acknowledged that the seals affixed to the preceding instrument are the corporate seals of The Hanover Insurance Company, Massachusetts Bay Insurance Company and Citizens Insurance Company of America, respectively, and that the said corporate seals and their signatures as officers were duly affixed and subscribed to said instrument by the authority and direction of said Corporations.



BARBARA A. GARLICK
Notary Public
Commonwealth of Massachusetts
My Commission Expires Sept. 21, 2018


Barbara A. Garlick, Notary Public
My Commission Expires September 21, 2018

I, the undersigned Vice President of The Hanover Insurance Company, Massachusetts Bay Insurance Company and Citizens Insurance Company of America, hereby certify that the above and foregoing is a full, true and correct copy of the Original Power of Attorney issued by said Companies, and do hereby further certify that the said Powers of Attorney are still in force and effect.

This Certificate may be signed by facsimile under and by authority of the following resolution of the Board of Directors of The Hanover Insurance Company, Massachusetts Bay Insurance Company and Citizens Insurance Company of America.

"RESOLVED, That any and all Powers of Attorney and Certified Copies of such Powers of Attorney and certification in respect thereto, granted and executed by the President or any Vice President in conjunction with any Vice President of the Company, shall be binding on the Company to the same extent as if all signatures therein were manually affixed, even though one or more of any such signatures thereon may be facsimile." (Adopted October 7, 1981 - The Hanover Insurance Company; Adopted April 14, 1982 - Massachusetts Bay Insurance Company; Adopted September 7, 2001 - Citizens Insurance Company of America)

GIVEN under my hand and the seals of said Companies, at Worcester, Massachusetts, this 12th day of April 2013.

THE HANOVER INSURANCE COMPANY
MASSACHUSETTS BAY INSURANCE COMPANY
CITIZENS INSURANCE COMPANY OF AMERICA


Glenn Margosian, Vice President

