

If you plan to submit a bid directly to the Department of Transportation

PREQUALIFICATION

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

REQUESTS FOR AUTHORIZATION TO BID

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

WHO CAN BID ?

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

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

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

ADDENDA: It is the contractor's responsibility to determine which, if any, addenda pertains to any project they may be bidding. Failure to incorporate all relevant addenda may cause the bid to be declared unacceptable.

Each addendum will be placed with the contract number. Addenda will also be placed on the Addendum/Revision Checksheet and each subscription service subscriber will be notified by e-mail of each addendum issued.

The Internet is the Department's primary way of doing business. The subscription server e-mails are an added courtesy the Department provides. It is suggested that bidder check IDOT's website <http://www.dot.il.gov/desenv/delett.html> before submitting final bid information.

IDOT is not responsible for any e-mail related failures.

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

Technical Questions about downloading these files may be directed to Roseanne Nance (217)-785-5875 or nancer@dot.il.gov

WHAT MUST BE INCLUDED WHEN BIDS ARE SUBMITTED?: Bidders need not return the entire proposal when bids are submitted. That portion of the proposal that must be returned includes the following:

1. All documents from the Proposal Cover Sheet through the Proposal Bid Bond
2. Other special documentation and/or information that may be required by the contract special provisions

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

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

WHO SHOULD BE CALLED IF ASSISTANCE IS NEEDED?

| Questions Regarding | Call |
|--|--------------|
| Prequalification and/or Authorization to Bid | 217/782-3413 |
| Preparation and submittal of bids | 217/782-7806 |
| Mailing of plans and proposals | 217/782-7806 |
| Electronic plans and proposals | 217/785-5875 |

ADDENDUMS TO THE PROPOSAL FORMS

Planholders should verify that they have received and incorporated the revisions prior to submitting their bid. Failure by the bidder to include an addendum could result in a bid being rejected as irregular.

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RETURN WITH BID

| |
|-----------------------|
| Proposal Submitted By |
| Name |
| Address |
| City |

Letting January 21, 2005

BIDDERS NEED NOT RETURN THE ENTIRE PROPOSAL
(See instructions inside front cover)

NOTICE TO PROSPECTIVE BIDDERS

This proposal can be used for bidding purposes by only those companies that request and receive written AUTHORIZATION TO BID from IDOT's Central Bureau of Construction.

(SEE INSTRUCTIONS ON THE INSIDE OF COVER)

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



Illinois Department
of Transportation

Springfield, Illinois 62764

Contract No. 62872
COOK County
Section 1516.1-I-1
Route FAI 94
Project IM-943(377)60
District 1 Construction Funds

PLEASE MARK THE APPROPRIATE BOX BELOW:

- A Bid Bond is included.
- A Cashier's Check or a Certified Check is included

Prepared by

F

Checked by

(Printed by authority of the State of Illinois)

INSTRUCTIONS

ABOUT IDOT PROPOSALS: All proposals issued by IDOT are potential bidding proposals. Each proposal contains all Certifications and Affidavits, a Proposal Signature Sheet and a Proposal Bid Bond required for Prime Contractors to submit a bid after written **Authorization to Bid** has been issued by IDOT's Central Bureau of Construction.

WHO CAN BID?: Bids will be accepted from only those companies that request and receive written **Authorization to Bid** from IDOT's Central Bureau of Construction. To request authorization, a potential bidder must complete and submit Part B of the Request for Authorization to Bid/or Not For Bid Status form (BDE 124 INT) and submit an original Affidavit of Availability (BC 57).

WHAT CONSTITUTES WRITTEN AUTHORIZATION TO BID?: When a prospective prime bidder submits a "Request for Proposal Forms and Plans" he/she must indicate at that time which items are being requested For Bidding purposes. Only those items requested For Bidding will be analyzed. After the request has been analyzed, the bidder will be issued a **Proposal Denial and/or Authorization Form**, approved by the Central Bureau of Construction, that indicates which items have been approved For Bidding. If **Authorization to Bid** cannot be approved, the **Proposal Denial and/or Authorization Form** will indicate the reason for denial. If a contractor has requested to bid but has not received a **Proposal Denial and/or Authorization Form**, they should contact the Central Bureau of Construction in advance of the letting date.

WHAT MUST BE INCLUDED WHEN BIDS ARE SUBMITTED?: Bidders need not return the entire proposal when bids are submitted. That portion of the proposal that must be returned includes the following:

1. All documents from the Proposal Cover Sheet through the Proposal Bid Bond
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RETURN WITH BID



PROPOSAL

TO THE DEPARTMENT OF TRANSPORTATION

1. Proposal of _____

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

**Contract No. 62872
COOK County
Section 1516.1-I-1
Project IM-943(377)60
Route FAI 94
District 1 Construction Funds**

1.31 miles of utility relocation and jacking storm sewers along I-94 (Dan Ryan Expressway) from 73rd Street to the I-57 interchange, also removal of a retaining wall, located in Chicago.

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

RETURN WITH BID

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

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

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

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

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

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

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

Attach Cashier's Check or Certified Check Here

In the event that one proposal guaranty check is intended to cover two or more proposals, the amount must be equal to the sum of the proposal guaranties which would be required for each individual proposal. If the guaranty check is placed in another proposal, state below where it may be found.

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

Item _____

Section No. _____

County _____

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

BD 354 (Rev. 11/2001)

RETURN WITH BID

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

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

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

Schedule of Combination Bids

| Combination No. | Sections Included in Combination | Combination Bid | |
|-----------------|----------------------------------|-----------------|-------|
| | | Dollars | Cents |
| | | | |
| | | | |
| | | | |
| | | | |

7. **SCHEDULE OF PRICES.** The undersigned bidder submits herewith, in accordance with the rules and instructions, a schedule of prices for the items of work for which bids are sought. The unit prices bid are in U.S. dollars and cents, and all extensions and summations have been made. The bidder understands that the quantities appearing in the bid schedule are approximate and are provided for the purpose of obtaining a gross sum for the comparison of bids. If there is an error in the extension of the unit prices, the unit prices shall govern. Payment to the contractor awarded the contract will be made only for actual quantities of work performed and accepted or materials furnished according to the contract. The scheduled quantities of work to be done and materials to be furnished may be increased, decreased or omitted as provided elsewhere in the contract.
8. **CERTIFICATE OF AUTHORITY.** The undersigned bidder, if a business organized under the laws of another State, assures the Department that it will furnish a copy of its certificate of authority to do business in the State of Illinois with the return of the executed contract and bond. Failure to furnish the certificate within the time provided for execution of an awarded contract may be cause for cancellation of the award and forfeiture of the proposal guaranty to the State.

ILLINOIS DEPARTMENT OF TRANSPORTATION
 SCHEDULE OF PRICES
 CONTRACT
 NUMBER - 62872

State Job # - C-91-051-05
 PPS NBR - 1-74823-0580
 County Name - COOK - -
 Code - 31 - -
 District - 1 - -
 Section Number - 1516.1-I-1

Project Number
 IM-094-3/377/060

Route
 FAI 90

| Item Number | Pay Item Description | Unit of Measure | Quantity | x | Unit Price | = | Total Price |
|-------------|-----------------------|-----------------|-----------|---|------------|---|-------------|
| XX001490 | GATE VALVES 8 | EACH | 10.000 | | | | |
| XX003032 | GATE VALVES, 12 | EACH | 1.000 | | | | |
| XX004812 | VIDEO TAPE OF SEWERS | FOOT | 7,014.000 | | | | |
| XX005489 | STEEL CASING 48 | FOOT | 383.000 | | | | |
| XX005891 | WATER SERV RECONNECT | EACH | 1.000 | | | | |
| XX011700 | WATER MAIN FITTINGS | POUND | 5,000.000 | | | | |
| XX104800 | COMB CC&G TBV.12 | FOOT | 2,418.000 | | | | |
| X0320870 | BRACED EXCAVATION | CU YD | 965.000 | | | | |
| X0322256 | TEMP INFO SIGNING | SQ FT | 295.000 | | | | |
| X0322683 | CONC FDN 24D | FOOT | 9.000 | | | | |
| X0322895 | ABAND EX VALVE BASIN | EACH | 13.000 | | | | |
| X0323426 | SED CONT DR ST INL CL | EACH | 94.000 | | | | |
| X0323574 | MAINTAIN LIGHTING SYS | CAL MO | 3.500 | | | | |
| X0324107 | CONN EX FIT/PIPE 8 | EACH | 12.000 | | | | |
| X0324108 | CONN EX FIT/PIPE 12 | EACH | 2.000 | | | | |

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|-------------|-----------------------|-----------------|------------|---|------------|---|-------------|
| X0324109 | CONN EX FIT/PIPE 24 | EACH | 3.000 | | | | |
| X0324111 | PITOMETER TAP INSTALL | EACH | 8.000 | | | | |
| X0324163 | COMB SEW DIP 52 T2 12 | FOOT | 346.000 | | | | |
| X0324164 | COMB SEW DIP 52 T2 16 | FOOT | 287.000 | | | | |
| X0324182 | EC C TRP #6 2C #8 1C | FOOT | 212.000 | | | | |
| X0324334 | ABAND EX WAT MAIN 8 | EACH | 6.000 | | | | |
| X0324335 | ABAND EX WAT MAIN 12 | EACH | 1.000 | | | | |
| X0324342 | THRUST RESTRAINT TY A | EACH | 2.000 | | | | |
| X0324343 | THRUST RESTRAINT TY B | EACH | 2.000 | | | | |
| X0324345 | COMB SEW REM 24 | FOOT | 120.000 | | | | |
| X0324352 | ABAND EX WAT MAIN 24 | EACH | 2.000 | | | | |
| X0324697 | SOIL STABILIZERS | POUND | 37,000.000 | | | | |
| X0324698 | APPLY DUST SUP AGENTS | UNIT | 7.000 | | | | |
| X0324735 | COMB SEW DIP 52 T2 24 | FOOT | 120.000 | | | | |
| X0324736 | COMB SEW DIP 52 T2 30 | FOOT | 394.000 | | | | |

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|-------------|-----------------------|-----------------|-----------|---|------------|---|-------------|
| X0324737 | COMB SEW DIP 52 T2 36 | FOOT | 667.000 | | | | |
| X0324861 | COMB SEW DIP 52 T2 8 | FOOT | 625.000 | | | | |
| X0324862 | COMB SEW DIP 52 T2 48 | FOOT | 32.000 | | | | |
| X0324863 | COMB SEW ESVCP T2 8 | FOOT | 18.000 | | | | |
| X0324864 | DRAIN CONNECTIONS | FOOT | 80.000 | | | | |
| X0712400 | TEMP PAVEMENT | SQ YD | 227.000 | | | | |
| X4066426 | BC SC SUPER "D" N70 | TON | 1,687.000 | | | | |
| X4067100 | P LB MM SU IL4.75 N50 | TON | 14.000 | | | | |
| X4400198 | CONC BARRIER REM SPL | FOOT | 158.000 | | | | |
| X6021300 | CB SPEC 4D T1F OL | EACH | 15.000 | | | | |
| X6022120 | MAN DT 7 DIA T1F CL | EACH | 3.000 | | | | |
| X6022400 | MAN TA 3D W/FR & LID | EACH | 10.000 | | | | |
| X6022450 | MAN TB 3D W/FR & LID | EACH | 1.000 | | | | |
| X6370912 | CONC BAR 1F 32HT SPL | FOOT | 80.000 | | | | |
| X6640200 | TEMP CH LK FENCE | FOOT | 50.000 | | | | |

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|-------------|-----------------------|-----------------|-----------|---|------------|---|-------------|
| X6640210 | TEMP CH LK FENCE PORT | FOOT | 380.000 | | | | |
| X7011015 | TR C-PROT EXPRESSWAYS | L SUM | 1.000 | | | | |
| X7013820 | TR CONT SURVEIL EXPWY | CAL DA | 93.000 | | | | |
| X7015000 | CHANGEABLE MESSAGE SN | CAL MO | 20.000 | | | | |
| X7040600 | FUR TEMP CONC BARRIER | FOOT | 1,010.000 | | | | |
| Z0013798 | CONSTRUCTION LAYOUT | L SUM | 1.000 | | | | |
| Z0018500 | DRAINAGE STR CLEANED | EACH | 18.000 | | | | |
| Z0030240 | IMP ATTN TEMP NRD TL2 | EACH | 1.000 | | | | |
| Z0030250 | IMP ATTN TEMP NRD TL3 | EACH | 4.000 | | | | |
| Z0030350 | IMP ATTN REL NRD TL3 | EACH | 1.000 | | | | |
| Z0045460 | PRESS CONNECT 30X8 | EACH | 1.000 | | | | |
| Z0048665 | RR PROT LIABILITY INS | L SUM | 1.000 | | | | |
| Z0068400 | STEEL CASINGS 42 | FOOT | 152.000 | | | | |
| Z0076600 | TRAINEES | HOUR | 1,000.000 | | 0.800 | | 800.000 |
| 20100110 | TREE REMOV 6-15 | UNIT | 652.000 | | | | |

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| 20100210 | TREE REMOV OVER 15 | UNIT | 364.000 | | | | |
| 20101000 | TEMPORARY FENCE | FOOT | 849.000 | | | | |
| 20101700 | SUPPLE WATERING | UNIT | 18.800 | | | | |
| 20200100 | EARTH EXCAVATION | CU YD | 310.000 | | | | |
| 20201200 | REM & DISP UNS MATL | CU YD | 70.000 | | | | |
| 20700220 | POROUS GRAN EMBANK | CU YD | 673.000 | | | | |
| 20800150 | TRENCH BACKFILL | CU YD | 4,705.000 | | | | |
| 21101615 | TOPSOIL F & P 4 | SQ YD | 5,290.000 | | | | |
| 21101630 | TOPSOIL F & P 8 | SQ YD | 5,180.000 | | | | |
| 21301072 | EXPLOR TRENCH 72 | FOOT | 168.000 | | | | |
| 25000210 | SEEDING CL 2A | ACRE | 2.120 | | | | |
| 25000400 | NITROGEN FERT NUTR | POUND | 195.000 | | | | |
| 25000500 | PHOSPHORUS FERT NUTR | POUND | 195.000 | | | | |
| 25000600 | POTASSIUM FERT NUTR | POUND | 195.000 | | | | |
| 25100630 | EROSION CONTR BLANKET | SQ YD | 10,263.000 | | | | |

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|-------------|-----------------------|-----------------|------------|---|------------|---|-------------|
| 25200110 | SODDING SALT TOLERANT | SQ YD | 207.000 | | | | |
| 28000400 | PERIMETER EROS BAR | FOOT | 2,587.000 | | | | |
| 28000510 | INLET FILTERS | EACH | 47.000 | | | | |
| 31101400 | SUB GRAN MAT B 6 | SQ YD | 10,450.000 | | | | |
| 35300510 | PCC BSE CSE 10 1/2 | SQ YD | 9,727.000 | | | | |
| 35300740 | PCC BSE CSE 14 | SQ YD | 144.000 | | | | |
| 35301350 | HES PCC BSE CSE 10.5 | SQ YD | 279.000 | | | | |
| 40200800 | AGG SURF CSE B | TON | 131.000 | | | | |
| 40600200 | BIT MATLS PR CT | TON | 8.300 | | | | |
| 40600300 | AGG PR CT | TON | 41.000 | | | | |
| 40600895 | CONSTRUC TEST STRIP | EACH | 1.000 | | | | |
| 40600990 | TEMPORARY RAMP | SQ YD | 16.000 | | | | |
| 42000540 | PCC PVT 12 | SQ YD | 25.000 | | | | |
| 42001300 | PROTECTIVE COAT | SQ YD | 855.000 | | | | |
| 42300400 | PCC DRIVEWAY PAVT 8 | SQ YD | 5.000 | | | | |

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|-------------|----------------------|-----------------|------------|---|------------|---|-------------|
| 42400200 | PC CONC SIDEWALK 5 | SQ FT | 458.000 | | | | |
| 44000006 | BIT SURF REM 1 1/2 | SQ YD | 9,824.000 | | | | |
| 44000100 | PAVEMENT REM | SQ YD | 10,284.000 | | | | |
| 44000200 | DRIVE PAVEMENT REM | SQ YD | 5.000 | | | | |
| 44000500 | COMB CURB GUTTER REM | FOOT | 2,583.500 | | | | |
| 44000600 | SIDEWALK REM | SQ FT | 458.000 | | | | |
| 44001980 | CONC BARRIER REMOV | FOOT | 224.000 | | | | |
| 44004250 | PAVED SHLD REMOVAL | SQ YD | 632.000 | | | | |
| 44004510 | PCC SHOULDER REMOVAL | SQ YD | 161.000 | | | | |
| 48202400 | BIT SHLD SUPER 6 | SQ YD | 666.000 | | | | |
| 48300400 | PCC SHOULDERS 9 | SQ YD | 161.000 | | | | |
| 50100100 | REM EXIST STRUCT | EACH | 1.000 | | | | |
| 50300225 | CONC STRUCT | CU YD | 8.400 | | | | |
| 50800105 | REINFORCEMENT BARS | POUND | 1,670.000 | | | | |
| 550A1350 | STORM SEW CL A 5 48 | FOOT | 6.000 | | | | |

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|-------------|------------------------|-----------------|-----------|---|------------|---|-------------|
| 550A1640 | STORM SEW CL A 6 42 | FOOT | 4.000 | | | | |
| 552A1000 | SS JKD CL A 27 | FOOT | 152.000 | | | | |
| 552A1300 | SS JKD CL A 36 | FOOT | 383.000 | | | | |
| 56100700 | WATER MAIN 8 | FOOT | 147.000 | | | | |
| 56101120 | WATER MAIN 24 | FOOT | 6,120.000 | | | | |
| 56105790 | BUTTERFLY VALVES 24 | EACH | 4.000 | | | | |
| 56400500 | FIRE HYDNNTS TO BE REM | EACH | 5.000 | | | | |
| 56400600 | FIRE HYDRANTS | EACH | 6.000 | | | | |
| 60107700 | PIPE UNDERDRAINS 6 | FOOT | 160.000 | | | | |
| 60202505 | CB TA 4D T1FOL (CHGO) | EACH | 13.000 | | | | |
| 60206905 | CB TC T1F OL | EACH | 4.000 | | | | |
| 60223800 | MAN TA 6 DIA T1F CL | EACH | 1.000 | | | | |
| 60226600 | MAN DT 5 DIA T1F CL | EACH | 1.000 | | | | |
| 60226730 | MAN DT 6 DIA T1F CL | EACH | 1.000 | | | | |
| 60234200 | INLETS TA T1F OL | EACH | 1.000 | | | | |

ILLINOIS DEPARTMENT OF TRANSPORTATION
 SCHEDULE OF PRICES
 CONTRACT
 NUMBER - 62872

State Job # - C-91-051-05
 PPS NBR - 1-74823-0580
 County Name - COOK- -
 Code - 31 - -
 District - 1 - -
 Section Number - 1516.1-I-1

Project Number
 IM-094-3/377/060

Route
 FAI 90

| Item Number | Pay Item Description | Unit of Measure | Quantity | x | Unit Price | = | Total Price |
|-------------|----------------------|-----------------|-----------|---|------------|---|-------------|
| 60247800 | JUNCTION CHAMBER | EACH | 2.000 | | | | |
| 60250400 | CB ADJ NEW T1F OL | EACH | 1.000 | | | | |
| 60300105 | FR & GRATES ADJUST | EACH | 10.000 | | | | |
| 60500040 | REMOV MANHOLES | EACH | 9.000 | | | | |
| 60500050 | REMOV CATCH BAS | EACH | 32.000 | | | | |
| 60500060 | REMOV INLETS | EACH | 3.000 | | | | |
| 60603800 | COMB CC&G TB6.12 | FOOT | 125.500 | | | | |
| 60605000 | COMB CC&G TB6.24 | FOOT | 40.000 | | | | |
| 63200310 | GUARDRAIL REMOV | FOOT | 50.000 | | | | |
| 63301210 | REM RE-E SPBGR TY A | FOOT | 112.500 | | | | |
| 66400105 | CH LK FENCE 4 | FOOT | 1,137.000 | | | | |
| 66410300 | CH LK FENCE REMOV | FOOT | 1,157.000 | | | | |
| 66410400 | CH LK FENCE REM & RE | FOOT | 40.000 | | | | |
| 67100100 | MOBILIZATION | L SUM | 1.000 | | | | |
| 70101800 | TRAF CONT & PROT SPL | L SUM | 1.000 | | | | |

ILLINOIS DEPARTMENT OF TRANSPORTATION
 SCHEDULE OF PRICES
 CONTRACT
 NUMBER - 62872

State Job # - C-91-051-05
 PPS NBR - 1-74823-0580
 County Name - COOK- -
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Project Number
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Route
 FAI 90

| Item Number | Pay Item Description | Unit of Measure | Quantity | x | Unit Price | = | Total Price |
|-------------|-----------------------|-----------------|------------|---|------------|---|-------------|
| 70300100 | SHORT-TERM PAVT MKING | FOOT | 1,956.000 | | | | |
| 70300210 | TEMP PVT MK LTR & SYM | SQ FT | 366.000 | | | | |
| 70300220 | TEMP PVT MK LINE 4 | FOOT | 16,435.000 | | | | |
| 70300240 | TEMP PVT MK LINE 6 | FOOT | 772.000 | | | | |
| 70300250 | TEMP PVT MK LINE 8 | FOOT | 1,540.000 | | | | |
| 70300280 | TEMP PVT MK LINE 24 | FOOT | 37.000 | | | | |
| 70300510 | PAVT MARK TAPE T3 L&S | SQ FT | 259.000 | | | | |
| 70300520 | PAVT MARK TAPE T3 4 | FOOT | 5,289.000 | | | | |
| 70300530 | PAVT MARK TAPE T3 5 | FOOT | 755.000 | | | | |
| 70300550 | PAVT MARK TAPE T3 8 | FOOT | 4,113.000 | | | | |
| 70300560 | PAVT MARK TAPE T3 12 | FOOT | 99.000 | | | | |
| 70301000 | WORK ZONE PAVT MK REM | SQ FT | 13,160.000 | | | | |
| 70400100 | TEMP CONC BARRIER | FOOT | 1,315.000 | | | | |
| 70400200 | REL TEMP CONC BARRIER | FOOT | 90.000 | | | | |
| 78008200 | POLYUREA PM T1 LTR-SY | SQ FT | 544.000 | | | | |

ILLINOIS DEPARTMENT OF TRANSPORTATION
 SCHEDULE OF PRICES
 CONTRACT
 NUMBER - 62872

State Job # - C-91-051-05
 PPS NBR - 1-74823-0580
 County Name - COOK - -
 Code - 31 - -
 District - 1 - -
 Section Number - 1516.1-I-1

Project Number
 IM-094-3/377/060

Route
 FAI 90

| Item Number | Pay Item Description | Unit of Measure | Quantity | x | Unit Price | = | Total Price |
|-------------|-----------------------|-----------------|-----------|---|------------|---|-------------|
| 78008210 | POLYUREA PM T1 LN 4 | FOOT | 7,461.000 | | | | |
| 78008220 | POLYUREA PM T1 LN 5 | FOOT | 754.000 | | | | |
| 78008230 | POLYUREA PM T1 LN 6 | FOOT | 2,613.000 | | | | |
| 78008240 | POLYUREA PM T1 LN 8 | FOOT | 2,394.000 | | | | |
| 78008250 | POLYUREA PM T1 LN 12 | FOOT | 792.000 | | | | |
| 78008270 | POLYUREA PM T1 LN 24 | FOOT | 318.000 | | | | |
| 78100300 | REPLACEMENT REFLECTOR | EACH | 102.000 | | | | |
| 78200100 | MONODIR PRIS BAR REFL | EACH | 53.000 | | | | |
| 78300100 | PAVT MARKING REMOVAL | SQ FT | 3,198.000 | | | | |
| 81000700 | CON T 2 1/2 GALVS | FOOT | 212.000 | | | | |
| 81500200 | TR & BKFIL F ELECT WK | FOOT | 212.000 | | | | |
| 81800300 | A CBL 3-1C2 MESS WIRE | FOOT | 212.000 | | | | |
| 84200500 | REM EX LT UNIT SALV | EACH | 1.000 | | | | |
| 84200700 | LIGHTING FDN REMOV | EACH | 1.000 | | | | |
| 84400105 | RELOC EX LT UNIT | EACH | 1.000 | | | | |

CONTRACT NUMBER

62872

THIS IS THE TOTAL BID

\$ _____

NOTES:

1. Each PAY ITEM should have a UNIT PRICE and a TOTAL PRICE.
2. The UNIT PRICE shall govern if no TOTAL PRICE is shown or if there is a discrepancy between the product of the UNIT PRICE multiplied by the QUANTITY.
3. If a UNIT PRICE is omitted, the TOTAL PRICE will be divided by the QUANTITY in order to establish a UNIT PRICE.
4. A bid may be declared UNACCEPTABLE if neither a unit price nor a total price is shown.

RETURN WITH BID

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

I. GENERAL

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

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

C. In addition to all other remedies provided by law, failure to comply with any assurance, failure to make any disclosure or the making of a false certification shall be grounds for termination of the contract and the suspension or debarment of the bidder.

II. ASSURANCES

A. The assurances hereinafter made by the bidder are each a material representation of fact upon which reliance is placed should the Department enter into the contract with the bidder. The Department may terminate the contract if it is later determined that the bidder rendered a false or erroneous assurance, and the surety providing the performance bond shall be responsible for the completion of the contract.

B. Felons

1. The Illinois Procurement Code provides:

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

2. The bidder assures the Department that the award and execution of the contract would not cause a violation of Section 50-10.

C. Conflicts of Interest

1. The Illinois Procurement Code provides in pertinent part:

Section 50-13. Conflicts of Interest.

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

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

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

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

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

The current salary of the Governor is \$150,700.00. Sixty percent of the salary is \$90,420.00.

RETURN WITH BID

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

D. Negotiations

1. The Illinois Procurement Code provides in pertinent part:

Section 50-15. Negotiations.

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

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

E. Inducements

1. The Illinois Procurement Code provides:

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

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

F. Revolving Door Prohibition

1. The Illinois Procurement Code provides:

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

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

G. Reporting Anticompetitive Practices

1. The Illinois Procurement Code provides:

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

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

H. Confidentiality

1. The Illinois Procurement Code provides:

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

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

RETURN WITH BID

I. Insider Information

1. The Illinois Procurement Act provides:

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

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

III. CERTIFICATIONS

A. The certifications hereinafter made by the bidder are each a material representation of fact upon which reliance is placed should the Department enter into the contract with the bidder. The Department may terminate the contract if it is later determined that the bidder rendered a false or erroneous certification, and the surety providing the performance bond shall be responsible for completion of the contract.

B. Bribery

1. The Illinois Procurement Code provides:

Section 50-5. Bribery.

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

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

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

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

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

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

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

(d) Certification. Every bid submitted to and contract executed by the State shall contain a certification by the contractor that the contractor is not barred from being awarded a contract or subcontract under this Section. A contractor who makes a false statement, material to the certification, commits a Class 3 felony.

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

C. Educational Loan

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

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

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

D. Bid-Rigging/Bid Rotating

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

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

RETURN WITH BID

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

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

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

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

E. International Anti-Boycott

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

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

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

F. Drug Free Workplace

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

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

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

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

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

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

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

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

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

G. Debt Delinquency

1. The Illinois Procurement Code provides:

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

The contractor or bidder certifies that it, or any affiliate, is not barred from being awarded a contract under 30 ILCS 500. Section 50-11 prohibits a person from entering into a contract with a State agency if it knows or should know that it, or any affiliate, is delinquent in the payment of any debt to the State as defined by the Debt Collection Board. Section 50-12 prohibits a person from entering into a contract with a State agency if it, or any affiliate, has failed to collect and remit Illinois Use Tax on all sales of tangible personal property into the State of Illinois in accordance with the provisions of the Illinois Use Tax Act. The contractor further acknowledges that the contracting State agency may declare the contract void if this certification is false or if the contractor, or any affiliate, is determined to be delinquent in the payment of any debt to the State during the term of the contract.

H. Sarbanes-Oxley Act of 2002

1. The Illinois Procurement Code provides:

Section 50-60(c).

The contractor certifies in accordance with 30 ILCS 500/50-10.5 that no officer, director, partner or other managerial agent of the contracting business has been convicted of a felony under the Sarbanes-Oxley Act of 2002 or a Class 3 or Class 2 felony under the Illinois Securities Law of 1953 for a period of five years prior to the date of the bid or contract. The contractor acknowledges that the contracting agency shall declare the contract void if this certification is false.

I. ADDENDA

The contractor or bidder certifies that all relevant addenda have been incorporated in to this contract. Failure to do so may cause the bid to be declared unacceptable.

J. Section 42 of the Environmental Protection Act

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

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

In accordance with the provisions of Section 30-22 (6) of the Illinois Procurement Code, the bidder certifies that it is a participant, either as an individual or as part of a group program, in the approved apprenticeship and training programs applicable to each type of work or craft that the bidder will perform with its own forces. The bidder further certifies for work that will be performed by subcontract that each of its subcontractors submitted for approval either (a) is, at the time of such bid, participating in an approved, applicable apprenticeship and training program; or (b) will, prior to commencement of performance of work pursuant to this contract, begin participation in an approved apprenticeship and training program applicable to the work of the subcontract. The Department, at any time before or after award, may require the production of a copy of each applicable Certificate of Registration issued by the United States Department of Labor evidencing such participation by the contractor and each of its subcontractors. Unless otherwise directed in writing by the Department, applicable apprenticeship and training programs are those that have been approved and registered with the United States Department of Labor. The bidder shall list in the space below, the official name of the program sponsor holding the Certificate of Registration for all of the types of work or crafts in which the bidder is a participant and that will be performed with the bidder's forces. Types of work or craft work that will be subcontracted may be indicated as to be subcontracted.

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

IV. DISCLOSURES

A. The disclosures hereinafter made by the bidder are each a material representation of fact upon which reliance is placed should the Department enter into the contract with the bidder. The Department may terminate the contract if it is later determined that the bidder rendered a false or erroneous disclosure, and the surety providing the performance bond shall be responsible for completion of the contract.

B. Financial Interests and Conflicts of Interest

1. Section 50-35 of the Illinois Procurement Code provides that all bids of more than \$10,000 shall be accompanied by disclosure of the financial interests of the bidder. This disclosed information for the successful bidder, will be maintained as public information subject to release by request pursuant to the Freedom of Information Act.

The financial interests to be disclosed shall include ownership or distributive income share that is in excess of 5%, or an amount greater than 60% of the annual salary of the Governor, of the bidding entity or its parent entity, whichever is less, unless the contractor or bidder is a publicly traded entity subject to Federal 10K reporting, in which case it may submit its 10K disclosure in place of the prescribed disclosure. If a bidder is a privately held entity that is exempt from Federal 10K reporting, but has more than 400 shareholders, it may submit the information that Federal 10K companies are required to report, and list the names of any person or entity holding any ownership share that is in excess of 5%. The disclosure shall include the names, addresses, and dollar or proportionate share of ownership of each person making the disclosure, their instrument of ownership or beneficial relationship, and notice of any potential conflict of interest resulting from the current ownership or beneficial interest of each person making the disclosure having any of the relationships identified in Section 50-35 and on the disclosure form.

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

2. Disclosure Forms. Disclosure Form A is attached for use concerning the individuals meeting the above ownership or distributive share requirements. Subject individuals should be covered each by one form. In addition, a second form (Disclosure Form B) provides for the disclosure of current or pending procurement relationships with other (non-IDOT) state agencies. **The forms must be included with each bid or incorporated by reference.**

C. Disclosure Form Instructions

Form A: For bidders that have previously submitted the information requested in Form A

The Department has retained the Form A disclosures submitted by all bidders responding to these requirements for the April 24, 1998 or any subsequent letting conducted by the Department. The bidder has the option of submitting the information again or the bidder may sign the following certification statement indicating that the information previously submitted by the bidder is, as of the date of signature, current and accurate. The Certification must be signed and dated by a person who is authorized to execute contracts for the bidding company. Before signing this certification, the bidder should carefully review its prior submissions to ensure the Certification is correct. If the Bidder signs the Certification, the Bidder should proceed to Form B instructions.

CERTIFICATION STATEMENT

I have determined that the Form A disclosure information previously submitted is current and accurate, and all forms are hereby incorporated by reference in this bid. Any necessary additional forms or amendments to previously submitted forms are attached to this bid.

(Bidding Company)

Name of Authorized Representative (type or print)

Title of Authorized Representative (type or print)

Signature of Authorized Representative

Date

Form A: For bidders who have NOT previously submitted the information requested in Form A

If the bidder is a publicly traded entity subject to Federal 10K reporting, the 10K Report may be submitted to meet the requirements of Form A. If a bidder is a privately held entity that is exempt from Federal 10K reporting, but has more than 400 shareholders, it may submit the information that Federal 10K companies are required to report, and list the names of any person or entity holding any ownership share that is in excess of 5%. If a bidder is not subject to Federal 10K reporting, the bidder must determine if any individuals are required by law to complete a financial disclosure form. To do this, the bidder should answer each of the following questions. A "YES" answer indicates Form A must be completed. If the answer to each of the following questions is "NO", then the NOT APPLICABLE STATEMENT on the second page of Form A must be signed and dated by a person that is authorized to execute contracts for the bidding company. Note: These questions are for assistance only and are not required to be completed.

1. Does anyone in your organization have a direct or beneficial ownership share of greater than 5% of the bidding entity or parent entity? YES ___ NO ___
2. Does anyone in your organization have a direct or beneficial ownership share of less than 5%, but which has a value greater than \$90,420.00? YES ___ NO ___
3. Does anyone in your organization receive more than \$90,420.00 of the bidding entity's or parent entity's distributive income? (Note: Distributive income is, for these purposes, any type of distribution of profits. An annual salary is not distributive income.) YES ___ NO ___
4. Does anyone in your organization receive greater than 5% of the bidding entity's or parent entity's total distributive income, but which is less than \$90,420.00? YES ___ NO ___
(Note: Only one set of forms needs to be completed per person per bid even if a specific individual would require a yes answer to more than one question.)

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

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

Form B: Identifying Other Contracts & Procurement Related Information Disclosure Form B must be completed for each bid submitted by the bidding entity. It must be signed by an individual who is authorized to execute contracts for the bidding entity. *Note: Signing the NOT APPLICABLE STATEMENT on Form A does not allow the bidder to ignore Form B. Form B must be completed, signed and dated or the bidder may be considered nonresponsive and the bid will not be accepted.*

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

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

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

D. Bidders Submitting More Than One Bid

Bidders submitting multiple bids may submit one set of forms consisting of all required Form A disclosures and one Form B for use with all bids. Please indicate in the space provided below the bid item that contains the original disclosure forms and the bid items which incorporate the forms by reference.

- The bid submitted for letting item _____ contains the Form A disclosures or Certification Statement and the Form B disclosures. The following letting items incorporate the said forms by reference:

RETURN WITH BID/OFFER

ILLINOIS DEPARTMENT OF TRANSPORTATION

Form A Financial Information & Potential Conflicts of Interest Disclosure

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

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

DISCLOSURE OF FINANCIAL INFORMATION

1. Disclosure of Financial Information. The individual named below has an interest in the BIDDER (or its parent) in terms of ownership or distributive income share in excess of 5%, or an interest which has a value of more than \$90,420.00 (60% of the Governor's salary as of 7/1/01). (Make copies of this form as necessary and attach a separate Disclosure Form A for each individual meeting these requirements)

FOR INDIVIDUAL (type or print information)

NAME:

ADDRESS

Type of ownership/distributable income share:

stock sole proprietorship Partnership other: (explain on separate sheet):
% or \$ value of ownership/distributable income share:

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

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

Yes ___ No ___

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

- 1. Are you currently an officer or employee of either the Capitol Development Board or the Illinois Toll Highway Authority? Yes ___ No ___
2. Are you currently appointed to or employed by any agency of the State of Illinois? If you are currently appointed to or employed by any agency of the State of Illinois, and your annual salary exceeds \$90,420.00, (60% of the Governor's salary as of 7/1/01) provide the name the State agency for which you are employed and your annual salary.

RETURN WITH BID/OFFER

3. If you are currently appointed to or employed by any agency of the State of Illinois, and your annual salary exceeds \$90,420.00, (60% of the Governor's salary as of 7/1/01) are you entitled to receive (i) more than 7 1/2% of the total distributable income of your firm, partnership, association or corporation, or (ii) an amount in excess of the salary of the Governor? Yes ___ No ___
4. If you are currently appointed to or employed by any agency of the State of Illinois, and your annual salary exceeds \$90,420.00, (60% of the Governor's salary as of 7/1/01) are you and your spouse or minor children entitled to receive (i) more than 15% in aggregate of the total distributable income of your firm, partnership, association or corporation, or (ii) an amount in excess of 2 times the salary of the Governor? Yes ___ No ___

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

Yes ___ No ___

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

1. Is your spouse or any minor children currently an officer or employee of the Capitol Development Board or the Illinois Toll Highway Authority? Yes ___ No ___
2. Is your spouse or any minor children currently appointed to or employed by any agency of the State of Illinois? If your spouse or minor children is/are currently appointed to or employed by any agency of the State of Illinois, and his/her annual salary exceeds \$90,420.00, (60% of the Governor's salary as of 7/1/01) provide the name of the spouse and/or minor children, the name of the State agency for which he/she is employed and his/her annual salary. _____
-
3. If your spouse or any minor children is/are currently appointed to or employed by any agency of the State of Illinois, and his/her annual salary exceeds \$90,420.00, (60% of the salary of the Governor as of 7/1/01) are you entitled to receive (i) more than 7 1/2% of the total distributable income of your firm, partnership, association or corporation, or (ii) an amount in excess of the salary of the Governor? Yes ___ No ___
4. If your spouse or any minor children are currently appointed to or employed by any agency of the State of Illinois, and his/her annual salary exceeds \$90,420.00, (60% of the Governor's salary as of 7/1/01) are you and your spouse or any minor children entitled to receive (i) more than 15% in the aggregate of the total distributable income from your firm, partnership, association or corporation, or (ii) an amount in excess of 2 times the salary of the Governor? Yes ___ No ___

(c) Elective status; the holding of elective office of the State of Illinois, the government of the United States, any unit of local government authorized by the Constitution of the State of Illinois or the statutes of the State of Illinois currently or in the previous 3 years. Yes ___ No ___

(d) Relationship to anyone holding elective office currently or in the previous 2 years; spouse, father, mother, son, or daughter. Yes ___ No ___

(e) Appointive office; the holding of any appointive government office of the State of Illinois, the United State of America, or any unit of local government authorized by the Constitution of the State of Illinois or the statutes of the State of Illinois, which office entitles the holder to compensation in excess of the expenses incurred in the discharge of that office currently or in the previous 3 years. Yes ___ No ___

(f) Relationship to anyone holding appointive office currently or in the previous 2 years; spouse, father, mother, son, or daughter. Yes ___ No ___

(g) Employment, currently or in the previous 3 years, as or by any registered lobbyist of the State government. Yes ___ No ___

RETURN WITH BID/OFFER

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

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

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

APPLICABLE STATEMENT

This Disclosure Form A is submitted on behalf of the INDIVIDUAL named on previous page.

Completed by: _____
Name of Authorized Representative (type or print)

Completed by: _____
Title of Authorized Representative (type or print)

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

NOT APPLICABLE STATEMENT

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

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

Name of Authorized Representative (type or print)

Title of Authorized Representative (type or print)

Signature of Authorized Representative Date _____

RETURN WITH BID/OFFER

**ILLINOIS DEPARTMENT
OF TRANSPORTATION**

**Form B
Other Contracts &
Procurement Related Information
Disclosure**

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

Disclosure of the information contained in this Form is required by the Section 50-35 of the Illinois Procurement Act (30 ILCS 500). This information shall become part of the publicly available contract file. This Form B must be completed for bids in excess of \$10,000, and for all open-ended contracts.

DISCLOSURE OF OTHER CONTRACTS AND PROCUREMENT RELATED INFORMATION

1. Identifying Other Contracts & Procurement Related Information. The BIDDER shall identify whether it has any pending contracts (including leases), bids, proposals, or other ongoing procurement relationship with any other State of Illinois agency: Yes ___ No ___

If "No" is checked, the bidder only needs to complete the signature box on the bottom of this page.

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

THE FOLLOWING STATEMENT MUST BE SIGNED

| | |
|--|-------|
| _____ | |
| Name of Authorized Representative (type or print) | |
| _____ | |
| Title of Authorized Representative (type or print) | |
| _____ | _____ |
| Signature of Authorized Representative | Date |

RETURN WITH BID

SPECIAL NOTICE TO CONTRACTORS

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

CONSTRUCTION EMPLOYEE UTILIZATION PROJECTION

- (a) All bidders on construction contracts shall complete and submit, along with and as part of their bids, a Bidder's Employee Utilization Form (Form BC-1256) setting forth a projection and breakdown of the total workforce intended to be hired and/or allocated to such contract work by the bidder including a projection of minority and female employee utilization in all job classifications on the contract project.
- (b) The Department of Transportation shall review the Employee Utilization Form, and workforce projections contained therein, of the contract awardee to determine if such projections reflect an underutilization of minority persons and/or women in any job classification in accordance with the Equal Employment Opportunity Clause and Section 7.2 of the Illinois Department of Human Rights' Rules and Regulations for Public Contracts adopted as amended on September 17, 1980. If it is determined that the contract awardee's projections reflect an underutilization of minority persons and/or women in any job classification, it shall be advised in writing of the manner in which it is underutilizing and such awardee shall be considered to be in breach of the contract unless, prior to commencement of work on the contract project, it submits revised satisfactory projections or an acceptable written affirmative action plan to correct such underutilization including a specific timetable geared to the completion stages of the contract.
- (c) The Department of Transportation shall provide to the Department of Human Rights a copy of the contract awardee's Employee Utilization Form, a copy of any required written affirmative action plan, and any written correspondence related thereto. The Department of Human Rights may review and revise any action taken by the Department of Transportation with respect to these requirements.

RETURN WITH BID

**Contract No. 62872
COOK County
Section 1516.1-I-1
Project IM-943(377)60
Route FAI 94
District 1 Construction Funds**

PART II. WORKFORCE PROJECTION - continued

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

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

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

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

PART III. AFFIRMATIVE ACTION PLAN

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

Company _____ Telephone Number _____

Address _____

NOTICE REGARDING SIGNATURE

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

Signature: _____ Title: _____ Date: _____

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

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

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

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

RETURN WITH BID

ADDITIONAL FEDERAL REQUIREMENTS

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

- A. By the execution of this proposal, the signing bidder certifies that the bidding entity has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action, in restraint of free competitive bidding in connection with the submitted bid. This statement made by the undersigned bidder is true and correct under penalty of perjury under the laws of the United States.
- B. CERTIFICATION, EQUAL EMPLOYMENT OPPORTUNITY:
1. Have you participated in any previous contracts or subcontracts subject to the equal opportunity clause. YES _____ NO _____
 2. If answer to #1 is yes, have you filed with the Joint Reporting Committee, the Director of OFCC, any Federal agency, or the former President's Committee on Equal Employment Opportunity, all reports due under the applicable filing requirements of those organizations? YES _____ NO _____

RETURN WITH BID

**Contract No. 62872
COOK County
Section 1516.1-I-1
Project IM-943(377)60
Route FAI 94
District 1 Construction Funds**

PROPOSAL SIGNATURE SHEET

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

(IF AN INDIVIDUAL)

Firm Name _____
Signature of Owner _____
Business Address _____

(IF A CO-PARTNERSHIP)

Firm Name _____
By _____
Business Address _____
Name and Address of All Members of the Firm: _____

(IF A CORPORATION)

Corporate Name _____
By _____
Signature of Authorized Representative _____
Typed or printed name and title of Authorized Representative _____

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

Attest _____
Signature _____
Business Address _____

(IF A JOINT VENTURE)

Corporate Name _____
By _____
Signature of Authorized Representative _____
Typed or printed name and title of Authorized Representative _____

Attest _____
Signature _____
Business Address _____

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

RETURN WITH BID



Illinois Department of Transportation

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

Item No.
Letting Date

KNOW ALL MEN BY THESE PRESENTS, That We

as PRINCIPAL, and

as SURETY, are held jointly, severally and firmly bound unto the STATE OF ILLINOIS in the penal sum of 5 percent of the total bid price, or for the amount specified in Article 102.09 of the "Standard Specifications for Road and Bridge Construction" in effect on the date of invitation for bids, whichever is the lesser sum, well and truly to be paid unto said STATE OF ILLINOIS, for the payment of which we bind ourselves, our heirs, executors, administrators, successors and assigns.

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

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

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

In TESTIMONY WHEREOF, the said PRINCIPAL and the said SURETY have caused this instrument to be signed by their respective officers this day of A.D.,

PRINCIPAL

SURETY

(Company Name)

(Company Name)

By: (Signature & Title)

By: (Signature of Attorney-in-Fact)

Notary Certification for Principal and Surety

STATE OF ILLINOIS, COUNTY OF

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

(Insert names of individuals signing on behalf of PRINCIPAL & SURETY)

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

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

My commission expires Notary Public

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

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

PROPOSAL ENVELOPE



PROPOSALS

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

| Item No. | Item No. | Item No. |
|----------|----------|----------|
| | | |
| | | |
| | | |
| | | |

Submitted By:

| |
|-----------|
| Name: |
| Address: |
| |
| |
| Phone No. |

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

Engineer of Design and Environment - Room 323
Illinois Department of Transportation
2300 South Dirksen Parkway
Springfield, Illinois 62764

NOTICE

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

CONTRACTOR OFFICE COPY OF CONTRACT SPECIFICATIONS

NOTICE

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

**Contract No. 62872
COOK County
Section 1516.1-I-1
Project IM-943(377)60
Route FAI 94
District 1 Construction Funds**



Illinois Department of Transportation



1. **TIME AND PLACE OF OPENING BIDS.** Sealed proposals for the improvement described herein will be received by the Department of Transportation at the Harry R. Hanley Building, 2300 South Dirksen Parkway, in Springfield, Illinois until 10:00 o'clock a.m., January 21, 2005. All bids will be gathered, sorted, publicly opened and read in the auditorium at the Department of Transportation's Harry R. Hanley Building shortly after the 10:00 a.m. cut off time.
2. **DESCRIPTION OF WORK.** The proposed improvement is identified and advertised for bids in the Invitation for Bids as:

**Contract No. 62872
COOK County
Section 1516.1-I-1
Project IM-943(377)60
Route FAI 94
District 1 Construction Funds**

1.31 miles of utility relocation and jacking storm sewers along I-94 (Dan Ryan Expressway) from 73rd Street to the I-57 interchange, also removal of a retaining wall, located in Chicago.

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

(b) State law, and, if the work is to be paid wholly or in part with Federal-aid funds, Federal law requires the bidder to make various certifications as a part of the proposal and contract. By execution and submission of the proposal, the bidder makes the certification contained therein. A false or fraudulent certification shall, in addition to all other remedies provided by law, be a breach of contract and may result in termination of the contract.
4. **AWARD CRITERIA AND REJECTION OF BIDS.** This contract will be awarded to the lowest responsive and responsible bidder considering conformity with the terms and conditions established by the Department in the rules, Invitation for Bids and contract documents. The issuance of plans and proposal forms for bidding based upon a prequalification rating shall not be the sole determinant of responsibility. The Department reserves the right to determine responsibility at the time of award, to reject any or all proposals, to readvertise the proposed improvement, and to waive technicalities.

By Order of the
Illinois Department of Transportation

Timothy W. Martin, Secretary

BD 351 (Rev. 01/2003)

INDEX
FOR
SUPPLEMENTAL SPECIFICATIONS
AND RECURRING SPECIAL PROVISIONS

Adopted January 1, 2004

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

ERRATA Standard Specifications for Road and Bridge Construction
(Adopted 1-1-02) (Revised 1-1-04)

SUPPLEMENTAL SPECIFICATIONS

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RECURRING SPECIAL PROVISIONS

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

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STATE OF ILLINOIS

SPECIAL PROVISIONS

The following Special Provisions supplement the "Standard Specifications for Road and Bridge Construction," adopted January 1, 2002 (hereinafter referred to as the Standard Specifications); the latest edition of the "Illinois 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 reconstruction of FAI Route 94, Project IM-094-3(377)060, Section 1516.1-I-1 in Cook County. In case of conflict with any part or parts of said specifications, the said Special Provisions shall take precedence and shall govern.

F.A.I. Route 94 (Dan Ryan Expressway)
Section: 1516.1-I-1
County: Cook
Contract: 62872

LOCATION OF PROJECT

The project is located along the Westbound Connector ramp between Northbound I-94 and Southbound I-57, along State Street from 95th to 85th Streets and at the intersection of State & 73rd Streets. The length along the Westbound Connector is approximately 0.15 miles and the contiguous length on State Street is 1.15 miles. The work at State & 73rd Street intersection is limited to the intersection proper.

DESCRIPTION OF PROJECT

The work on the connector ramp consists of jacking storm sewer and constructing two junction chamber connections at the existing main drain sewer. This work includes storm sewer jacking, construction of sewer structures, installation of storm sewer, removal and replacement of ramp pavement, shoulders, and barrier wall, slope excavation and grading, erosion control, pavement striping, landscaping, traffic control protection and other incidental and collateral work at the locations specified.

The work along State Street consists of existing retaining wall removal, slope excavation and grading, excavation and trenching, installation of water main, valves, hydrants and other appurtenances, installation of sewers, manholes and catch basins, removal and replacement of frontage road pavement, curb and gutter and sidewalk, pavement striping, landscaping, traffic control protection and other incidental and collateral work.

MAINTENANCE OF ROADWAYS

Beginning on the date that the Contractor begins work on this project, he shall assume responsibility for the normal maintenance of the Westbound Connector ramp between Northbound I-94 and Southbound I-57. He shall also be responsible for the normal maintenance of State Street between 95th Street and 85th Street, including any side street intersections within

the work zone, and the intersection at State Street and 73rd Street. This normal maintenance shall include all repair work deemed necessary by the Engineer, but shall not include snow removal operations. Traffic control and protection for this work shall be provided by the Contractor as required by the Engineer.

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

START OF WORK

The Contractor shall start work as soon as possible on the frontage roads, however, no ramp may be closed until April 1, 2005. Work on the expressway shall begin in accordance with the requirements of the Special Provision for Keeping The Expressway Open To Traffic.

STATUS OF UTILITIES TO BE ADJUSTED

Effective: January 30, 1987 Revised: July 1, 1994

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

| <u>Name of Utility</u> | <u>Type</u> | <u>Location</u> | <u>Estimated Dates for Start and Completion of Relocation or Adjustments</u> |
|------------------------|--|---|--|
| PEOPLES GAS | 24" casing pipe w/ 12" gas line in conflict with catch basin | Sta. 2214+25 (N. of 94 th St) | No Conflict Anticipated. |
| PEOPLES GAS | 24" casing pipe w/ 12" gas line in conflict with 12" combined sewer and water main | Sta. 2220+75 (N. of 93 rd St) | Support in place by Peoples Gas during construction. |
| PEOPLES GAS | 24" casing pipe w/ 12" gas line in conflict with sewer lateral | Sta. 2222+00 (N. of 93 rd St) | No Conflict Anticipated. |
| PEOPLES GAS | 24" casing pipe w/ 12" gas line in conflict with sewer lateral | Sta. 2223+90 (S. of 92 nd St) | No Conflict Anticipated. |
| PEOPLES GAS | 6" gas line in conflict with proposed catch basin | Sta. 2224+00 (S. of 92 nd St) | No Conflict Anticipated. |
| PEOPLES GAS | 24" casing pipe w/ 12" gas line in conflict with sewer lateral | Sta. 2228+30 (N. of 92 nd St) | No Conflict Anticipated. |
| PEOPLES GAS | 24" casing pipe w/ 12" gas line in conflict with sewer lateral | Sta. 2230+25 (S. of 91 st St) | No Conflict Anticipated. |
| PEOPLES GAS | 24" casing pipe w/ 12" gas line in conflict with water main | Sta. 2232+30 (S. of 91 st St) | No Conflict Anticipated. |
| PEOPLES GAS | 6" gas line in conflict with water main | Sta. 2232+80 (91 st & State) | No Conflict Anticipated. |

| | | | |
|----------------|---|---|--------------------------|
| PEOPLES GAS | 24" casing pipe w/ 12" gas line in conflict with water main | Sta. 2235+00 (N. of 91 st St) | No Conflict Anticipated. |
| PEOPLES GAS | 24" casing pipe w/ 12" gas line in conflict with sewer lateral | Sta. 2239+60 (N. of R.R. Bridge) | No Conflict Anticipated. |
| PEOPLES GAS | 24" casing pipe w/ 12" gas line in conflict with 36" combined sewer | Sta. 2240+30 (N. of R.R. Bridge) | No Conflict Anticipated. |

F.A.I. Route 94 (Dan Ryan Expressway)
Section (1516.1 - I-1)
Cook County

| | | | |
|----------------|---|--|---|
| PEOPLES GAS | 24" casing pipe w/ 12" gas line in conflict with sewer lateral | Sta. 2241+25 (S. of 89 th Place) | No Conflict Anticipated. |
| PEOPLES GAS | 24" casing pipe w/ 12" gas line in conflict with water main | Sta. 2241+70 (S. of 89 th Place) | Support in place by Peoples Gas during construction. |
| PEOPLES GAS | 24" casing pipe w/ 12" gas line in conflict with sewer lateral | Sta. 2241+90 (S. of 89 th Place) | No Conflict Anticipated. |
| PEOPLES GAS | 4" gas line in conflict with water main and combined sewer | Sta. 2242+80 to Sta. 2257+60 (E 89 th Place to E 87 th St) | Peoples Gas will reroute 4" PLMP main into the sidewalk area from 89 th St. to 87 th St. Peoples Gas will move the 4" PLMP main in State St. 4' to the east from 89 th Pl. to 89 th St. and it will have 5' of cover to be below proposed catch basins. |
| PEOPLES GAS | 24" casing pipe w/ 12" gas line in conflict with sewer lateral | Sta. 2243+60 (N. of 89 th Place) | No Conflict Anticipated. |
| PEOPLES GAS | 24" casing pipe w/ 12" gas line in conflict with sewer lateral | Sta. 2245+10 (S. of 89 th St) | No Conflict Anticipated. |
| PEOPLES GAS | 24" casing pipe w/ 12" gas line in conflict with 48" combined sewer | Sta. 2246+15 (89 th & State St) | Support in place by Peoples Gas during construction. |
| PEOPLES GAS | Gas line in conflict with water main and combined sewer | Sta. 2246+25 (89 th & State St) | Support in place by Peoples Gas during construction. |
| PEOPLES GAS | 24" casing pipe w/ 12" gas line in conflict with sewer lateral | Sta. 2246+80 (N. of 89 th St) | No Conflict Anticipated. |
| PEOPLES GAS | 24" casing pipe w/ 12" gas line in conflict with sewer lateral | Sta. 2248+65 (N. of 89 th St) | No Conflict Anticipated. |
| PEOPLES GAS | 24" casing pipe w/ 12" gas line in conflict with sewer lateral | Sta. 2249+60 (S. of 88 th St) | No Conflict Anticipated. |
| PEOPLES GAS | 24" casing pipe w/ 12" gas line in conflict with sewer lateral | Sta. 2250+75 (S. of 88 th St) | No Conflict Anticipated. |
| PEOPLES GAS | 24" casing pipe w/ 12" gas line in conflict with 30" combined sewer | Sta. 2251+00 (S. of 88 th St) | Support in place by Peoples Gas during construction. |
| PEOPLES GAS | 6" gas line in conflict with water main | Along 87 th St & from Sta. 2257+60 to Sta. 2259+40 (S. of 87 th St) | Peoples Gas will retire line by March 1, 2005. No Conflict Anticipated. |
| PEOPLES GAS | 24" casing pipe w/ 12" gas line in conflict with water main | Sta. 2259+20 & Sta. 2259+70 (87 th & State St) | No Conflict Anticipated. |

F.A.I. Route 94 (Dan Ryan Expressway)
 Section (1516.1 - I-1)
 Cook County

| | | | |
|----------------|---|---|---|
| PEOPLES GAS | 6" gas line in conflict with water main | Sta. 2266+00 to Sta. 2266+50 (86 th & State St) | No Conflict Anticipated. |
| PEOPLES GAS | 24" casing pipe w/ 12" gas line in conflict with water main | Sta. 2270+40 (S. of 85 th St) | No Conflict Anticipated. |
| SBC | Duct in conflict with water main | Sta. 2259+90 (87 th & State) | Support in place; Adjustment completed by March 1, 2005 |
| SBC | 15-MTD in conflict with water main | Sta. 2261+00 (N. of 87 th St) to Sta. 2270+50 (S. of 85 th St) | Potential reroute to Wabash Avenue. |

| | | | |
|-------|---|---|---|
| COMED | (2H,3W) DUCT IN CONFLICT WITH WATER MAIN | Sta. 2210+75 (S. of 94 th St) | Tie-up if required. |
| COMED | (2H,3W) DUCT IN CONFLICT WITH WATER MAIN & 12" COMBINED SEWER | Sta. 2220+75 (N. of 93 rd St) | Tie-up if required. |
| COMED | (2H,3W) DUCT IN CONFLICT WITH SEWER LATERAL | Sta. 2222+00 (N. of 93 rd St) | Tie-up if required. |
| COMED | (2H,3W) DUCT IN CONFLICT WITH SEWER LATERAL | Sta. 2223+90 (S. of 92 nd St) | Tie-up if required. |
| COMED | (2H,3W) DUCT IN CONFLICT WITH SEWER LATERAL | Sta. 2228+30 (N. of 92 nd St) | Tie-up if required. |
| COMED | (2H,3W) DUCT IN CONFLICT WITH SEWER LATERAL | Sta. 2230+25 (S. of 91 st St) | Tie-up if required. |
| COMED | (2H,3W) DUCT IN CONFLICT WITH SEWER LATERAL | Sta. 2232+10 (S. of 91 st St) | Tie-up if required. |
| COMED | (2H,3W) DUCT IN CONFLICT WITH WATER MAIN | Sta. 2232+60 (91 st & State St) | Tie-up if required. |
| COMED | (1H,2W) DUCT IN CONFLICT WITH WATER MAIN | Sta. 2233+10 (91 st & State St) | Tie-up if required. |
| COMED | (2H,3W) DUCT IN CONFLICT WITH WATER MAIN | Sta. 2234+80 (N. of 91 st St) | Tie-up if required. |
| COMED | (2H,3W) DUCT IN CONFLICT WITH SEWER LATERAL | Sta. 2239+50 (N. of R.R. Bridge) | Tie-up if required. |
| COMED | (2H,3W) DUCT IN CONFLICT WITH 36" COMBINED SEWER | Sta. 2240+50 (N. of R.R. Bridge) | Tie-up will be required during construction. |
| COMED | (2H,3W) DUCT IN CONFLICT WITH SEWER LATERAL | Sta. 2241+25 (S. of 89 th Place) | Tie-up if required. |
| COMED | (2H,3W) DUCT IN CONFLICT WITH WATER MAIN AND SEWER LATERAL | Sta. 2241+90 (S. of 89 th Place) | Tie-up if required. |
| COMED | (1H,2W) DUCT IN CONFLICT WITH SEWER MANHOLE | Sta. 2242+60 (89 th Place & State St) | Potential relocation. Tie-up will be required during construction if not relocated. |
| COMED | (2H,3W) DUCT IN CONFLICT WITH SEWER LATERAL | Sta. 2243+60 (N. of 89 th Place) | Tie-up if required. |

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| COMED | (2H,3W) DUCT IN CONFLICT WITH SEWER LATERAL | Sta. 2245+10 (S. of 89 th St) | Tie-up if required. |
| COMED | (2H,3W) DUCT IN CONFLICT WITH 48" COMBINED SEWER | Sta. 2246+15 (89 th & State St) | Tie-up will be required during construction. |
| COMED | (2H,3W) DUCT IN CONFLICT WITH SEWER LATER | Sta. 2246+80 (N. of 89 th St) | Tie-up if required. |
| COMED | (2H,3W) DUCT IN CONFLICT WITH SEWER LATERAL | Sta. 2248+65 (N. of 89 th St) | Tie-up if required. |
| COMED | (2H,3W) DUCT IN CONFLICT WITH SEWER LATERAL | Sta. 2249+55 (S. of 88 th St) | Tie-up if required. |
| COMED | (2H,3W) DUCT IN CONFLICT WITH SEWER LATERAL | Sta. 2250+80 (S. of 88 th St) | Tie-up if required. |
| COMED | (2H,3W) DUCT IN CONFLICT WITH 30" COMBINED SEWER | Sta. 2251+00 (S. of 88 th St) | Tie-up will be required during construction. |

| | | | |
|-------|---|--|--|
| COMED | (2H,3W) DUCT IN CONFLICT WITH WATER MAIN | Sta. 2258+90 (87 th & State St) | Tie-up will be required during construction. |
| COMED | (1H,10W) DUCT IN CONFLICT WITH WATER MAIN | Sta. 2259+60 (87 th & State St) | Tie-up will be required during construction. |
| COMED | (2H,3W) DUCT IN CONFLICT WITH WATER MAIN | Sta. 2259+80 (87 th & State St) | Tie-up will be required during construction. |
| COMED | (2H,3W) DUCT IN CONFLICT WITH WATER MAIN | Sta. 2261+20 (N. of 87 th St) | Tie-up if required. |
| COMED | (2H,3W) DUCT IN CONFLICT WITH WATER MAIN | Sta. 2270+30 (S. of 85 th St) | Tie-up if required. |
| COMED | (2H,3W) DUCT IN CONFLICT WITH 8" WATER MAIN | Sta. 2352+60 (73 rd & State St) | Tie-up if required. |

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

COORDINATION WITH ADJACENT AND/OR OVERLAPPING CONTRACTS

This contract abuts and /or overlaps with other concurrent Contracts as listed below. Each Contract includes work items requiring close coordination between the Contractors regarding the sequence and timing for the execution of such work items.

NB RETAINING WALLS, RAMPS & SIGNING (Contract 62694)

| <u>Location</u> | <u>Letting Date</u> | <u>Tentative Completion Date</u> |
|---|---------------------|----------------------------------|
| 71 st ST to I-57 Interchange | June - 2005 | November - 2006 |

SB RETAINING WALLS, RAMPS & SIGNING (Contract 62695)

| <u>Location</u> | <u>Letting Date</u> | <u>Tentative Completion Date</u> |
|---|---------------------|----------------------------------|
| 71 st ST to I-57 Interchange | June - 2005 | November - 2006 |

LIGHTING & SURVEILLANCE (Contract 62583)

| <u>Location</u> | <u>Letting Date</u> | <u>Tentative Completion Date</u> |
|---|---------------------|----------------------------------|
| 31 st ST to I-57 Interchange | January - 2005 | April - 2007 |

CTA RED LINE TRACK WORK

| <u>Location</u> | <u>Start Date</u> | <u>Tentative Completion Date</u> |
|-----------------|-------------------|----------------------------------|
|-----------------|-------------------|----------------------------------|

79th Street

9/1/04

11/8/04

OVERHEAD BRIDGES (OVER DAN RYAN EXPRESSWAY)

| <u>Location</u> | <u>Letting Date</u> | <u>Tentative Completion Date</u> |
|---|----------------------|----------------------------------|
| 71 st Street Bridge | 8/1/03 | April - 2004 |
| 75 th Street Bridge | 6/15/03 | December - 2004 |
| 76 th Street Bridge | Unknown | Unknown |
| 91 st Street Bridge | Unknown | 7/15/05 |
| 95 th Street Bus Bridge | Issue for bids 5/ 03 | Unknown |
| Michigan Avenue Bridge | 7/15/03 | April – 2004 |
| NB I-57 over Bishop Ford | 6/17/05 | November - 2006 |
| WB Connector Contract (62694) | | |
| NB I-57 over SB I-294 & CTA Red Line Tunnel Contract (62694) | 6/17/05 | November - 2006 |

WATER MAIN CROSSINGS (Contract 62692)

| <u>Location</u> | <u>Letting Date</u> | <u>Tentative Completion Date</u> |
|--|---------------------|----------------------------------|
| 83 rd , 85 th , and Dr. Martin Luther King | 9/17/04 | 1/8/05 |
| 69 th , 95 th , Eggleston, & Halsted | 9/17/04 | 2/26/05 |
| 45 th , 75 th , 79 th | 9/17/04 | 4/16/05 |
| 91 st (2 nd to Last Location), | 9/17/04 | 5/26/05 |
| 87 th (Last Location) | | |

Supplemental to the requirements of the Standard Specifications Article 105.08-Cooperation Between Contractors, the Contractors shall identify all such work items at the beginning of the Contract, and coordinate sequence and timing for their execution with the other Contractors through the Engineer. These work items shall be identified as separate line items in the Contractor's proposed Construction and Progress Schedule. Any conflicts between Contractor's schedules, the Department will be consulted through the Engineer to determine a resolution. Additional compensation or extension of the contract time will not be allowed for work and/or progress and/or lack of progress affected by lack of such coordination by the Contractor.

ADVANCED PUBLIC NOTIFICATION

Description.

This work shall consist of furnishing, installing, maintaining, relocating for various stages of construction, and eventually removing the advanced signing.

General.

The Contractor shall provide notice to the public a minimum of 14 days in advance of any work that requires the closure of lanes or ramps through the use of a changeable message sign.

Basis of Payment.

This work will be paid as CHANGEABLE MESSAGE SIGNS in calendar months.

COMPLETION DATE PLUS GUARANTEED WORKING DAYS

The Contractor shall complete all contract items and safely open all roadways to traffic by July 15, 2005 except as specified herein.

The Contractor will be allowed to complete all clean-up work and punch list items within ten (10) guaranteed working days after the completion date for opening the roadway to traffic. Under extenuating circumstances the Engineer may direct that certain items of work, not affecting the safe opening of the roadway to traffic, may be completed within the guaranteed working days allowed for clean up work and punch list items. Temporary lane closures for this work may be allowed at the discretion of the Engineer.

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

INTERIM COMPLETION DATE FOR WATER MAIN RELOCATION

The water main relocation shall be completed and service restored by July 1, 2005.

FAILURE TO COMPLETE THE WATER MAIN RELOCATION WORK ON TIME

Should the Contractor fail to complete the work on or before the completion date as specified in Special Provision for Interim Completion Date For Water Main Relocation or within such extended time as may have been allowed by the Department, the Contractor shall be liable to the Department in the amount of \$2000.00 per day not as a penalty but as liquidated damages, for each calendar day or portion thereof of overrun in the contract time or such extended time as may have been allowed.

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

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

FAILURE TO COMPLETE THE WORK ON TIME

Effective: September 30, 1985 Revised: June 28, 1996

Should the Contractor fail to complete the work on or before the completion date as specified in the Special Provision for "Completion Date Plus Guaranteed Working Days", or within such

extended time as may have been allowed by the Department, the Contractor shall be liable to the Department in the amount of \$3000.00, not as a penalty but as liquidated damages, for each calendar day or a portion thereof of overrun in the contract time or such extended time as may have been allowed.

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

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

FAILURE TO OPEN TRAFFIC LANES TO TRAFFIC

Should the Contractor fail to completely open and keep open all the traffic lanes to traffic in accordance with the limitations specified under the Special Provisions for "Keeping the Expressway Open to Traffic", the Contractor shall be liable to the Department for the amount of:

One Lane Blocked = \$3000.00

Two Lanes Blocked = \$5000.00

Not as a penalty but as liquidated and ascertained damages for each and every 15 minute interval or a portion thereof that a lane is blocked outside the allowable time limitations. Such damages may be deducted by the Department from any monies due the Contractor. These damages shall apply during the contract time and during any extensions of the contract time.

LIGHTING & SURVEILLANCE CONTRACT 62583

There is a concurrent electrical contract for the installation of roadway lighting, sign lighting, and ITS equipment within the Dan Ryan Expressway project limits. This work includes the installation of high mast light tower foundations and associated light tower service pads, light towers, installation of conduit, wiring, luminaries, and power supply. The Contractor is required to cooperate with the Contractor for Contract 62583 and coordinate his activities so as not to cause delay.

CTA COORDINATION

All work to be done by the Contractor on over or in close proximity of the CTA (Chicago Transit Authority) right-of-way shall be performed in accordance with Article 107.12 of the Standard Specifications and the following additional CTA requirements:

1. The CTA's Representative for this project will be:

Mr. Marvin A. Watson
General Manager, Construction
567 W. Lake Street
P.O. Box 7598
Chicago, IL 60680 – 7597
(312) 681-3860

2. **NOTIFICATION TO CTA:**

- A. After the letting of the contract and prior to performing any work, the CTA Representative shall be notified by the Department to attend the pre-construction meeting. In this meeting, the Contractor shall confer with the CTA's Representative regarding the CTA's requirements for the protection of CTA utilities clearances, operations and safety.
- B. Prior to the start of any work on or over the CTA's right-of-way, the Contractor shall meet with the CTA Representative to determine his requirements for flagmen and other necessary items related to the work activities on, over and next to the CTA facilities and to receive CTA's approval for the Contractor's proposed operations.
- C. The Contractor shall notify the CTA Representative 72-hours in advance of the time he intends to enter upon the CTA right-of-way for the performance of any work.

3. **PROTECTION OF THE CTA TRAFFIC:**

- A. The CTA will be operating trains mainline and rail yard operations are 24 hours per day, seven days per week during the construction of this project.
- B. The Contractor shall, at all times, take special care to conduct his operations over, under, adjacent to or adjoining the CTA facilities in such a manner as to prevent settlement, damage or displacement to any CTA structures, equipment, tracks or portions thereof and to prevent interruption of train service.
- C. Any damage to the tracks, or other CTA facilities caused by the Contractor's operations shall be replaced or repaired by the CTA at the Contractor's expense.

4. **REIMBURSEMENT OF COSTS:**

- A. All Contractors performing work on or near CTA property shall be required to provide a deposit, in advance, equal to the CTA's Construction Department's estimate. This estimated amount equals the anticipated amount of CTA services and includes, but is not limited to, Flagging charges, Inspector charges and Maintenance charges. No Contractor will be permitted to work prior to submission of a deposit.
- B. If the deposited amount is used up, prior to completion of the project, the CTA will require additional deposit to cover the anticipated work remaining. Any money

unused at time of project completion will be returned to the Contractor within 30 days.

- C. All checks must be made payable to Chicago Transit Authority and be submitted, with appropriate documentation, to the CTA Treasury Department, 567 West Lake Street, PO Box 7565, 7th Floor, Chicago, IL 60680-7567.
 - D. The Department will not be liable for any delays by the CTA in providing flagmen or other services required by this Special Provision.
5. Whenever any work, such as temporary shoring and erection procedures for spans over the CTA track, in the opinion of the CTA's inspector, may affect the safety of the trains and the continuity of the CTA's operations, the methods of performing such work shall first be submitted to the CTA for approval. If operations by the Contractor during construction are determined by the CTA's inspector to be hazardous to the CTA's operations, the Contractor shall suspend such work until reasonable remedial measures, and / or alternate methods, satisfactory to the CTA, are taken. Such remedial measures may include obtaining the services of the CTA personnel so that adequate protection may be provided.

6. **CTA OPERATING RESTRICTIONS:**

Operating requirements of the CTA, while work on the projects is in progress, are as follows:

- A. When the construction work is performed adjacent to an active track and the work does not involve the track or the third rail, the Contractor can provide (and the right-of-way allows for) an uninterrupted physical barrier (fence) at least 6 feet high (above track or platform level) to separate the work area from operating track(s). With the barrier in place, work at track level may be permitted at any time without CTA flagmen and Slow Zone protection.

Such temporary barriers shall be installed as far from the operating track(s) as possible, but no closer than 7'-2" from the centerline of the nearest operating track. The materials, location, construction and installation of the temporary barrier and the work procedures in the vicinity of the barrier must all be approved 48 hours in advance by the CTA Representative. Any construction work involving a crane lifting material higher than the barrier wall will still require CTA flagging protection.

- B. Work that is adjacent to or over the CTA operating tracks without a barrier in place requires CTA flagmen. Work is to be done during the following hours:

Monday through Saturday, inclusive - 8:00 p.m. to 4:00 am.
Sunday 12:00 am. to Monday 4:00 am.

- C. Work within the clearance envelope may require a single track operation and hours and length of single track will be determined by CTA rail operations (see paragraph 13 for clearance envelope).

- D As much work as possible is to be done under normal CTA operating conditions (under traffic) without disruption of train movements.
 - E. In order to request for single track (taking one track out of service), the Contractor, through the Resident Engineer, shall notify the CTA Representative forty-two (42) calendar days in advance of the proposed interruptions.
 - F. Interruptions will be provided solely at the CTA's discretion, depending upon the transit service demands for special events and possible conflicts with prior commitments to other work scheduled on the same route.
 - G. No more than one service interruption will be allowed simultaneously on this CTA line.
 - H. If the Contractor is unable to return the CTA track to normal operation on time, after the interruption, liquidated damages of at least \$ 100.00 per minute of delay shall be paid directly to the CTA by the Contractor. Liquidated damages paid by the Contractor will not be reimbursed.
- 7. Pedestrian traffic to the CTA facilities shall be maintained at all times.
 - 8. A notice of at least seventy-two (72) hours shall be given to the CTA prior to any beam removal or replacement, which will cause interruption to the CTA facilities and service.
 - 9. Simultaneous work on two piers that will require flagmen and affect the train operation shall not be allowed. Work, which will require flagmen, shall be limited to only **one side of the track at a time**.
 - 10. CTA shall have access to all storage tracks and unrestricted train operation over special holidays such as "July 4" and events such as the "Taste of Chicago." Dates for the above and other special holidays and events such as conventions, auto shows, World Series, etc. will be given to the Department as soon as they are available.
 - 11. The Contractor will be required to take all precautions to avoid debris concrete and other materials falling over the tracks.
 - 12. **OTHER SPECIAL CONDITIONS:**
 - A. The Contractor shall caution all employees of the presence of electric third rail (600 volts DC), live cables and moving trains on CTA tracks. The Contractor shall take all necessary precautions to prevent damage to life or property through contact with the electrical or operations systems. The Contractor shall caution all employees that any contact with live electric third rail or "live" portions of train undercarriage may result in severe burn or death.
 - B. The Contractor shall establish third-rail safety precautions in accordance with Authority regulations, such as, using insulating hoods or covers for live third rail or cables adjacent to the work. The Authority will provide CTA-qualified personnel to the Contractor as Contact Personnel. Unless otherwise noted, only CTA personnel are allowed to disconnect power.

- C. Safety Training: All employees of the Contractor or his Subcontractors who are required to work upon or adjacent to the CTA's operating tracks shall be required to attend and provide evidence of completion of a right-of-way safety training course administered by CTA.
- D. Arrangements for the safety training course shall be the Contractor's responsibility. Contact the CTA Representative to arrange for the safety course.
- E. The cost of the course is \$150.00 per person, payable to the CTA prior to taking the course. The cost of this course and the employee's time for the course shall be considered incidental to the cost of the contract. The course is one day long from 8:00 am. to 4:00 p.m.
- F. The Contractor, his Subcontractors and all of his employees who are required to work on or around the CTA's operating tracks shall wear a CTA type safety vest

13. **CTA TRANSIT CLEARANCES:**

The Contractor shall perform his work in a manner that provides adequate clearance to the CTA tracks. The clearances shall not be less than the following for safe passage of trains:

2.18 m (7'-2") horizontal to the centerline of the nearest track in yard and right-of-way.

4.42 m (14'-6") vertical from the top of the high running rail.

14. **PROTECTIVE SHIELD:**

- A. The Contractor shall furnish, install, and later remove a protective shield to protect the CTA traffic from damage due to falling material and objects during construction. The protective shield may be a platform, a net or any other Department approved structure.
 - B. A minimum vertical clearance of 4.42 m (14'-6") above the high running rail the CTA tracks shall be provided at all times.
 - C. The protective shield and the supporting members shall be designed to sustain a load of 200 pounds per square foot in addition to its own weight. Drawings and design calculations for the protective shield shall be stamped by an Illinois Licensed Structural Engineer and shall be submitted to the Department for approval. The protective shield shall be constructed only after the Department has approved the drawings and the design.
15. The Contractor shall be required to provide a schedule for material removal, delivery of new material, care operation over and around the tracks and a schedule for access of workmen to the construction site.

CONTRACTOR OFF-STREET PARKING RESTRICTION

The Contractor and all employees working on this project will not be allowed to park their vehicles and equipment on frontage roads or streets. The Contractor shall provide off-street parking facility for all vehicles and equipment. The Contractor shall also provide any transportation required to get his employees to and from the work site. The Contractor will provide the RE with written documentation of the off-site parking location.

The cost to comply with this requirement will not be paid for separately, but shall be considered as included in the contract unit bid prices of the contract, and no additional compensation will be allowed.

PRE-CONSTRUCTION VIDEO LOG

In addition to requirements in Article 107.20 of the Standard Specifications, the Contractor shall prepare a photo/video log of all structures adjacent to the Frontage Road right-of-way within the project limits prior to the start of any construction work. The Contractor shall provide a copy to the Engineer. Also the Contractor shall prepare and furnish a photo/video log of the final condition.

The cost to comply with this requirement will not be paid for separately, but shall be considered as included in the contract unit bid prices of the contract, and no additional compensation will be allowed.

CONTRACTOR'S DAILY WORK SCHEDULE

Description:

The Contractor shall submit a daily work schedule to the Resident Engineer for the purpose of coordinating the Contractor's activities for the next working day. The daily schedule must be submitted by 3:00 pm the day before. This schedule is necessary for the Engineer to schedule inspection, testing and layout checking for the following day.

The schedule shall include the location and type of all work to be performed that day and all material deliveries. It shall identify all concrete pours, the concrete mix design numbers, and estimated number of cubic yards. The placement of bituminous materials shall be identified, including the mix design numbers, location and number of estimated tons to be placed. The Contractor shall identify all locations where survey layout requires checking and shall give sufficient advance notification to the Engineer so as not to cause delay.

Method of Measurement:

This coordination work will not be measured for payment.

Basis of Payment:

Preparation and submittal of the Contractor's Daily Work Schedule shall not be paid for separately, but shall be included in the cost of the contract items of work.

(T Y Lin 8/24/2004)

REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL

This work shall consist of removing and disposing of unsuitable materials encountered during construction. The work shall include but not be limited to the removal and disposal of the top 6 inches of topsoil encountered within the construction limits of this contract as shown on the plans or directed by the Engineer.

This work shall be performed, measured and paid for in accordance with Section 202 of the Standard Specifications.

(TY Lin 10/15/2004)

TEMPORARY PAVEMENT

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

The contractor shall use either portland cement concrete as outlined in Section 353 and 354 of the Standard Specifications or bituminous concrete according to Section 355, 356, 406 of the Standard Specifications, and the special provisions for Bituminous Base Course/Widening Superpave and Superpave Bituminous Concrete Mixtures. The bituminous mixtures to be used shall be specified in the plans. The thickness of the Temporary Pavement shall be as described in the plans. The contractor shall have the option of constructing either material type if both portland cement concrete and bituminous concrete are shown in the plans.

Articles 355.10 and 406.21 of the Standard Specifications shall not apply.

The removal of the Temporary Pavement shall conform to Section 440 of the Standard Specifications.

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

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

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

CONCRETE BARRIER REMOVAL

Description:

This work consists of the removal and satisfactory disposal of portions of the existing concrete barrier and barrier base at the locations shown on the plans or as directed by the Engineer. This work shall be performed in accordance with the applicable portions of Sections 202 and 501 of the Standard Specifications, the details in the plans and as herein specified.

Construction Requirements:

Concrete barrier removal shall be in accordance with the applicable portions of Article 501.03. A typical detail of the existing single face and double face barrier wall is provided in the plans.

The portion to be removed shall be disposed of in accordance with Article 202.03.

Method of Measurement:

Concrete barrier removal shall be measured in linear feet along the top of the barrier.

Basis of Payment:

This work shall be paid for at the contract unit price per foot, for CONCRETE BARRIER REMOVAL and CONCRETE BARRIER REMOVAL (SPECIAL), which price shall be payment in full for all labor, tools, equipment and materials necessary to remove and dispose of the concrete barriers as specified herein.

REMOVAL OF EXISTING STRUCTURES

Description:

This work consists of the removal and satisfactory disposal of the existing concrete retaining wall and attached fence at the locations shown on the plans or as directed by the Engineer. The work shall be performed in accordance with the applicable portions of Section 501 of the Standard Specifications, the details in the plans, and as herein specified. Any Porous Granular Embankment necessary for backfilling as shown on the plans within the limits of existing structure removal shall be considered included in that item of work (REMOVAL OF EXISTING STRUCTURES) and will not be measured for payment. Materials removed shall be disposed of in accordance with Article 202.03.

General Requirements:

The Contractor shall furnish the Engineer with his plan for removal of the structure, showing his procedures and sequence of removal. The removal of the existing retaining wall and appurtenances shall not commence without the Engineer's approval.

The submittal must include a written description of the proposed sequence of removal and the methods to be employed in the removal operations. Further, the submittal must include drawings and details of the sequence of removal of the existing structure and locations of any temporary supports or bracing, the anticipated loads and the step-by-step removal procedure. The Contractor is responsible to ensure that the removal procedure results in a safe and stable structure at all times and to comply with all safety requirements as required by all city, state and federal laws, codes or other regulations.

The Contractor shall comply with the applicable portions of the "American National Standards Institute" (ANSI): Standard A "Safety Requirements for Demolition" in effect as of the date of the Contract Documents.

All materials removed shall become the property of the Contractor, unless otherwise specified herein, and shall be disposed of by the Contractor off the site in a lawful manner.

Items of salvageable value to the Contractor may be removed from the structure as work progresses. The Contractor's salvaged items shall be transported from the project site as they are removed. Storage or sale of removed items on the project site shall not be permitted.

The Contractor shall conduct demolition operations and removal of debris in a manner to ensure minimum interference with roads, streets, walks and other adjacent occupied or used facilities.

The Contractor shall not close or obstruct streets, walks or other occupied or used facilities without permission from authorities having jurisdiction. The Contractor shall provide alternate routes around closed or obstructed traffic ways as shown on the plans and required by governing regulations or the Department.

The Contractor shall promptly repair any adjacent buildings, structures or other improvements damaged or displaced during, or as a result of, demolition operations, as directed by the Engineer and at no additional expense to the Department.

It is the Contractor's responsibility to locate existing gas main. Any repairs due to damage of the gas main shall be the Contractor's responsibility.

Porous Granular Embankment fill material used in backfilling should be structural fill material, IDOT gradation CA-6. Fill material should be free of organic matter and debris. Fill should be placed in loose lifts not exceeding 8-inch thickness and compacted to minimum 95 percent maximum dry density, as determined in accordance with AASHTO T-99, Standard Proctor Method.

Construction Requirements:

The Contractor shall provide all necessary earth retention systems, bracing, shoring, temporary supports, barricades, fencing etc. necessary to protect surrounding property, existing utilities and the general public from damage or harm caused by falling debris or collapse of any portion of the structure. The Contractor shall submit drawings and design for the earth retention system to the Engineer for approval. The design and drawings shall be signed and sealed by a licensed Structural Engineer in the State of Illinois. The Engineer's approval does not relieve the Contractor from the sole responsibility of the structural integrity of the temporary earth retention system. The Contractor shall also provide temporary support for any adjacent structure, pavement or utility impacted by removal of the existing retaining wall. All support details shall also be signed and sealed by a licensed Structural Engineer in the State of Illinois. It is the Contractor's responsibility to verify all existing conditions, including utilities and access to the site prior to construction or ordering materials.

The concrete portions of the retaining wall and any attachments or appurtenances shall be removed as detailed on the plans. No piles shall be extracted.

Method of Measurement:

Removal of the existing structure, as numbered, shall be measured per each. Any excavation necessary to perform the removal of existing structures shall be considered included in that item of work (REMOVAL OF EXISTING STRUCTURES) and will not be measured for payment. Any porous granular embankment necessary for backfilling as shown on the plans within the limits of existing structure removal shall be considered included in that item of work (REMOVAL OF EXISTING STRUCTURES) and will not be measured for payment. Existing attached fence removal shall be included in that item of work (REMOVAL OF EXISTING STRUCTURES) and will not be measured for payment.

Basis of Payment:

This work shall be paid at the contract unit price per each for REMOVAL OF EXISTING STRUCTURES, numbered as specified, which price shall be payment in full for all labor, tools equipment and incidentals necessary to complete the work as specified.

(TY Lin 9/28/2004)

STORM SEWERS JACKED IN PLACE

Article 552.04 General.

Revise Article 552.04 to include the following:

“The use of a metal liner shall be required for all pipe sizes less than 42 inches in diameter.”

“The Contractor shall size the jacking and receiving pits to accommodate construction of the drainage structures attached to the jacked pipe.”

“Security fence shall be required around the perimeter of the jacking and receiving pits.”

COMBINED SEWER MANHOLES

Description.

This work consists of providing the specified Manhole Type to the proposed grades at the locations indicated on the plans or as directed by the Engineer.

General Requirements.

Work under these items must be performed in accordance with the applicable portions of Section 602 of the Standard Specifications and in accordance with the City of Chicago Standard Details, except as herein modified.

Joints.

Precast reinforced concrete sections must be constructed in horizontal courses. The units must be sealed with both external sealing bands conforming to ASTM C877-External Rubber Sealing Band and mastic joint sealer. Mastic joint sealer must completely fill the joint after the units have been brought together.

Sand Cushion.

All precast manholes must be installed on a 6-inch thick sand cushion of FA2 conforming to Article 1003.01.

Lids.

Unless otherwise shown on the plans or ordered by the Engineer, perforated lids must be placed on all manholes.

Backfilling.

Backfilling must be done with sand as specified in Article 550.07; however, no separate payment for backfilling will be made under these items and the work will be considered incidental to the costs of these items.

Cleaning.

All manholes structures must be cleaned of any accumulation of silt, debris, or foreign matter of any kind, and must be free from such accumulation at the time of final inspection.

Method of Measurement.

This work will be measured in place per each manhole.

Basis of Payment.

This work will be paid for at the contract unit price per each for MANHOLES, TYPE A, 3 FT DIAMETER (INCLUDING FRAMES AND LIDS); and MANHOLES, TYPE B, 3 FT DIAMETER

(INCLUDING FRAMES AND LIDS). The payment for manholes shall include the base with any pipe cast within the base. The contract unit price for each item will include the costs for all work, including but not limited to the costs for labor, materials, supplies, and equipment, frame, lid, sand cushion, manhole structure, trench backfill, removal and disposal of any miscellaneous abandoned structures, all excavation and disposal except excavation in rock. Any dewatering and/or sheeting or shoring required to do the work as specified will not be paid for separately, but will be included in the contract unit price of these items.

CATCH BASINS, SPECIAL, 4' -DIAMETER, TYPE 1 FRAME, OPEN LID

Description.

This Work consists of constructing a catch basin with a special half trap at the locations shown on the Plans or as directed by the Engineer.

General Requirements.

Work under this item shall be performed in accordance with the applicable portions of Section 602 of the Standard Specifications and in accordance with the City of Chicago Standard Details, except as modified herein.

Installation.

The elevation of the gas main shall be verified by the Contractor and the catch basin shall be constructed so that the drain pipe is located under the existing 24" gas main. The opening for the drain pipe shall be core drilled in the field and the half trap constructed as detailed on the plans. The half trap and drain pipe shall be paid for separately as COMBINED SEWER, DUCTILE IRON PIPE, CLASS 52, TYPE 2, 8".

Method of Measurement.

This Work will be measured on a per each basis.

Basis of Payment.

This work will be paid for at the contract unit price per each for CATCH BASINS, SPECIAL, 4'-DIAMETER, TYPE 1 FRAME, OPEN LID, which price shall include the costs for all labor, materials, equipment, frames, lids, concrete, 6-inch granular embedment, catch basin structure, core drilling, trench backfill, removal and disposal of any miscellaneous abandoned structures, and all excavation and disposal except excavation in rock. Any dewatering and/or sheeting or shoring required to do the work as specified will not be paid for separately, but shall be included in the contract unit price of this item.

CLEANING EXISTING DRAINAGE STRUCTURES

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

All existing drainage structures which are to be adjusted or reconstructed shall be cleaned in accordance with Article 602.14 of the Standard Specifications. The work will be paid for in accordance with Article 602.15 of the Standard Specifications.

All other existing drainage structures which are specified to be cleaned on the plans will be cleaned in accordance with Article 602.14 of the Standard Specifications. This work will be paid for at the contract unit price each for DRAINAGE STRUCTURES TO BE CLEANED.

COMBINATION CONCRETE CURB AND GUTTER, TYPE B-V.12

Description. This work shall be constructed in accordance with Section 606 of the Standard Specifications, State Standard 606001, and to the lines, grades and cross section shown on the plans and as directed by the Engineer.

The curb height for Combination Concrete Curb and Gutter Type B-V.12 shall vary between 3 and 9 inches and shall match the existing profile of the curb removed for construction.

Measurement and Payment. The work will be measured for payment at the contract unit price per foot for COMBINATION CONCRETE CURB AND GUTTER, TYPE B-V.12, which price will be considered payment in full to perform the work as specified.

CONCRETE BARRIER, SINGLE FACE, 32" HEIGHT (SPECIAL)

Description. This work shall be constructed in accordance with Section 637 of the Standard Specifications, the details in the plans and as directed by the Engineer.

Method of Measurement:

Concrete barrier will be measured for payment in feet in place, along the centerline of the barrier.

BASIS OF PAYMENT:

This work will be paid for at the contract unit price per foot for CONCRETE BARRIER, SINGLE FACE, 32" HEIGHT (SPECIAL).

TEMPORARY CHAIN LINK FENCE

Description:

This item consists of constructing a chain link fence 6 feet high and any gates as necessary, as shown on the plans or as directed by the Engineer. This work shall be performed in accordance with Section 664 of the Standard Specifications, except as herein modified.

Upon completion of the project or as directed by the Engineer, the fence, gates, posts, and all other fence hardware shall be removed from the job site and become the property of the Contractor. The salvage value of the fence shall be reflected in the contract unit price. All postholes shall be filled and compacted with a material similar to the surrounding material, or as directed by the Engineer.

This item shall also include any work necessary to remove and relocate fencing as shown on the plans or as directed by the Engineer for the purposes of staged construction at multiple, different work site locations. Upon completion of the work at a particular location and when directed by the Engineer to be removed, the temporary fencing shall be relocated to a new

location as directed by the Engineer. Any new hardware fasteners, fence post foundations, anchors and incidentals necessary to re-erect the fence shall be included in the work. Relocation of temporary chain link fence shall not be paid for separately, but shall be included in the contract unit price of this item.

Method of Measurement:

Temporary chain link fence shall be measured per foot along the top of the fence, from end post to end post. Any gates within the fence shall be measured as a length of fence. Gates shall not be paid for separately.

Basis of Payment:

This work will be paid for at the contract unit price per foot for TEMPORARY CHAIN LINK FENCE, which price shall be payment in full for all materials, labor, tools, equipment and incidentals necessary to construct the work as specified, including furnishing, placing, maintaining, relocating and removing the fence during staged construction.

TEMPORARY CHAIN LINK FENCE (PORTABLE)

Description:

This item consists of constructing a minimum 6 feet high chain link fence and any gates as necessary, at the locations shown on the plans or as directed by the Engineer. This work shall be performed in accordance with Section 664 of the Standard Specifications, except as modified herein. The purpose of this fence is to protect the public and to direct pedestrian traffic around and away from the work zone along the frontage roads and at intersections during staged construction.

The temporary chain link fence shall be mounted on stands or other such devices as approved by the Engineer so that the fence is portable and easily relocated as conditions change during construction. The individual fence panels shall be securely fastened together and the stands or other mounting devices shall be weighted with sandbags as necessary to prevent movement. The Contractor shall submit a catalog cut or details of the fence, gates, mounting stands, hardware, and other appurtenances for approval by the Engineer.

Upon completion of the project or as directed by the Engineer, the fence, gates, posts, and all other fence hardware and appurtenances shall be removed from the job site and become the property of the Contractor. The salvage value of the fence shall be reflected in the contract unit price.

This item shall also include any work necessary to remove and relocate fencing as shown on the plans or as directed by the Engineer for the purposes of staged construction at multiple, different work site locations. Upon completion of the work at a particular location and when directed by the Engineer to be removed, the temporary fencing shall be relocated to a new location as directed by the Engineer. Relocation of temporary chain link fence shall not be paid for separately, but shall be included in the cost of this item.

Method of Measurement:

Temporary chain link fence shall be measured per foot along the top of the fence, from end post to end post. Any gates within the fence shall be measured as a length of fence. Gates shall not be paid for separately.

Basis of Payment:

This work will be paid for at the contract unit price per foot for TEMPORARY CHAIN LINK FENCE (PORTABLE), which price shall include furnishing, placing, maintaining, relocating and removing the fence during staged construction.

(T Y Lin 8/20/2004)

CHAIN LINK FENCE REMOVAL

Description:

This work consists of the removal and satisfactory disposal of existing chain link fence at the locations shown on the plans or as directed by the Engineer. This work shall be performed in accordance with the applicable portions of Section 201 of the Standard Specifications and as herein specified.

General:

The chain link fence to be removed is approximately 4 feet in height with the posts set in concrete. Removal shall include posts, fence fabric, fittings, appurtenances, attachments and concrete foundation. Any holes created by removal of the foundation shall be filled with suitable material to eliminate any hazard to the public.

Any signs mounted on the fence shall be removed, stored and re-erected in accordance with Article 107.25.

Disposal of removed materials shall be in accordance with Article 202.03.

Method of Measurement:

Chain link fence removal shall be measured in linear feet along the top of the fence.

Basis of Payment:

This work will be paid for at the contract unit price per foot for CHAIN LINK FENCE REMOVAL, which price shall be payment in full for all labor, tools, equipment and materials necessary to remove and dispose of existing chain link fence as herein specified.

CHAIN LINK FENCE TO BE REMOVED AND RE-ERECTED (CTA)

Description:

This item consists of removing, salvaging, safeguarding and re-erecting the same fence on a new concrete barrier wall at the locations shown on the plans, or as directed by the Engineer. Any new hardware fasteners, anchors, attachments and incidentals necessary to re-attach the fence shall be included in the work. This work also includes the razor wire attached to the fence.

The ends of the fence shall be securely fastened to the existing fence in a manner approved by the Engineer.

Method of Measurement:

This work will be measured in feet of existing fence, as it is installed in its new location.

Basis of Payment:

This work will be paid for at the contract unit price per foot for CHAIN LINK FENCE TO BE REMOVED AND RE-ERECTED (CTA), which price shall be payment in full for all materials, labor, tools, equipment and incidentals necessary to construct the work as specified.

FURNISH TEMPORARY CONCRETE BARRIER

Description. This work shall consist of furnishing and placing temporary concrete barrier at locations shown on the plans or as directed by the Engineer. This work shall be performed, measured and paid for in accordance with Section 704 of the Standard Specifications with the following revisions:

“704.03 General. The temporary concrete barrier will remain after the contract is complete, at the locations shown on the plans.”

Basis of Payment. Temporary concrete barrier as specified herein will be paid for at the contract unit price per foot for FURNISH TEMPORARY CONCRETE BARRIER.

(TY Lin 6/8/2004)

TRAFFIC CONTROL PLAN

Effective: September 30, 1985

Revised: October 1, 1995

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

Special attention is called to Article 107.09 of the Standard Specifications and the following Highway Standards, Details, Quality Standard for Work Zone Traffic Control Devices, Recurring Special Provisions and Special Provisions contained herein, relating to Traffic Control.

The Contractor shall contact the District One Bureau of Traffic at least 72 hours in advance of beginning work.

STANDARDS

- 701101 - Off-Road Operations, Multilane, Less Than 4.5 m (15') Away,
For Speeds \geq 45MPH
- 701400 - Approach To Lane Closure, Freeway/Expressway
- 701401 - Lane Closure, Freeway/Expressway
- 701411 - Lane Closure Multilane at Entrance Or Exit Ramp For Speeds \geq 45 MPH
- 701426 - Lane Closure Multilane Intermittent Or Moving Oper. For Speeds \geq 45 MPH
- 701446 – Two Lane Closure Freeway / Expressway
- 702001 - Traffic Control Devices
- 704001 - Temporary Concrete Barrier

For Use On Frontage Roads Only:

701601 - Urban Lane Closure, Multilane 1W Or 2W with Nontraversable Median

701701 - Urban Lane Closure Multilane Intersection

701801 - Lane Closure Multilane 1W or 2W Crosswalk or Sidewalk Closure

DISTRICT 1 DETAILS

TC-8 Entrance And Exit Ramp Closure Details

TC-9 Traffic Control Details For Freeway Single and Multi-Lane Weave

TC-12 Multi-Lane Freeway Pavement Marking Detail

TC-16 Pavement Marking Letters And Symbols for Traffic Staging

TC-17 Traffic Control Details For Freeway Shoulder Closures and Partial Ramp Closures

TC-18 Signing For Flagging Operations At Work Zone Openings

TC-24 City of Chicago Typical Pavement Markings

SPECIAL PROVISIONS

Maintenance of Roadway

Failure to Open Traffic Lanes To Traffic

Keeping the Expressway Open to Traffic

Traffic Control Surveillance (Expressways)

Traffic Control and Protection (Expressways)

Work Zone Traffic Control (Lump Sum Payment)

Traffic Control For Work Zone Areas

Temporary Information Signing

Changeable Message Signs

Portable Changeable Message Signs (BDE)

Flagger Vests (BDE)

Traffic Control Deficiency Deduction (BDE)

Work Zone Public Information Signs (BDE)

Work Zone Speed Limit Signs (BDE)

Work Zone Traffic Control Devices (BDE)

KEEPING THE EXPRESSWAY OPEN TO TRAFFIC

Whenever work is in progress on or adjacent to an expressway, the Contractor shall provide the necessary traffic control devices to warn the public and to delineate the work zone as required in these Special Provisions, the Standard Specifications, the State Standards and the District Freeway Standards and details. All Contractor's personnel shall be limited to these barricaded work zones and shall not cross the expressway.

The Contractor shall request and gain approval from the Illinois Department of Transportation's Expressway Traffic Operations Engineer (847-705-4151) twenty-four (24) hours in advance of all daily lane, ramp and shoulder closures and seventy-two (72) hours in advance of all permanent and weekend closures on all Freeways and/or Expressways in District One. This advance notification is calculated based on workweek of Monday through Friday and shall not include weekends or Holidays.

LOCATION: I-90/94 Dan Ryan 71st to 95th

| WEEK NIGHT | TYPE OF CLOSURE | ALLOWABLE LANE CLOSURE HOURS | |
|----------------------|-----------------|------------------------------------|------------------------------------|
| | | INBOUND (Northbound) | OUTBOUND (Southbound) |
| Sunday thru Thursday | One Lane | 8:00 p.m. - 5:00 a.m. | 9:00 p.m. - 6:00 a.m. |
| | Two Lanes | 10:00 p.m. - 5:00 a.m. | 12:01 a.m. - 6:00 a.m. |
| Friday | One Lane | 8:00 p.m. (Fri) - 6:00 a.m. (Sat) | 9:00 p.m. (Fri) - 7:00 a.m. (Sat) |
| | Two Lanes | 11:00 p.m. (Fri) - 6:00 a.m. (Sat) | 12:01 a.m. (Sat) - 7:00 a.m. (Sat) |
| Saturday | One Lane | 8:00 p.m. (Sat) - Noon (Sun) | 9:00 p.m. (Sat) - Noon (Sun) |
| | Two Lanes | 11:00 p.m. (Sat) - 9:00 a.m. (Sun) | 12:01 a.m. (Sun) - 9:00 a.m. (Sun) |

Later closure hours will apply to the area south of 95th along the Dan Ryan, I-57 and on the 2-lane connector areas of the Bishop Ford and I-57 Interchange.

LOCATION: 95th Street to Halsted Street, 95th Street to Martin Luther King Drive, EB & WB Cross Connectors

| WEEK NIGHT | TYPE OF CLOSURE | ALLOWABLE LANE CLOSURE HOURS | |
|----------------------|-----------------|-------------------------------------|-------------------------------------|
| | | INBOUND (Northbound) | OUTBOUND (Southbound) |
| Sunday thru Thursday | One Lane | 11:00 p.m. to 5:00 a.m. | 12:01 a.m. to 6:00 a.m. |
| | | | |
| Friday | One Lane | 11:00 p.m. (Fri) to 6:00 a.m. (Sat) | 12:01 p.m. (Sat) to 7:00 a.m. (Sat) |
| | | | |
| Saturday | One Lane | 11:00 p.m.(Sat) to 8:00 a.m. (Sun) | 12:01 p.m. (Sun) to 9:00 a.m. (Sun) |
| | | | |

In addition to the hours noted above, temporary shoulder and partial ramp closures are allowed weekdays between 9:00 AM and 3:00 PM.

Narrow lanes and permanent shoulder closures **will not** be allowed between Dec. 1st and April 1st.

Full Expressway Closures will only be permitted for a maximum of 15 minutes at a time during the low traffic volume hours of 1:00 a.m. to 5:00 a.m. Monday through Friday and from 1:00 a.m. to 7:00 a.m. on Sunday. During Full Expressway Closures, the Contractor will be required to close off all lanes except one, using the State Highway Standards. Police forces shall be notified and requested to close off the remaining lane at which time the work item may be removed or set in place. The District One Traffic Operations Department **shall be** notified (847-705-4151) at least 3 working days (weekends and Holidays DO NOT count into this 72 hours notification) in advance of the proposed road closure and will coordinate the closure operations with police forces.

All stage changes requiring the stopping and/or the pacing of traffic shall take place during the allowable hours for Full Expressway Closures and shall be approved by the Department.

All daily lane closures shall be removed during adverse weather conditions such as rain, snow, and/or fog as determined by the Engineer.

Additional lane closure hour restrictions may have to be imposed to facilitate the flow of traffic to and from major sporting events and/or other events.

All lane closure signs shall not be erected any earlier than one-half (1/2) hour before the starting hours listed above. Also, these signs should be taken down within one-half (1/2) hour after the closure is removed.

The Contractors shall stage their work such that all ramps at interchanges remain open unless otherwise noted in the plans. Temporary ramp closures will only be permitted at night during the restricted hours listed for temporary one-lane closures within the project limits. However, no two adjacent entrance and exit ramps in one direction of the expressway shall be closed at the same time.

The Contractor will be required to cooperate with all other contractors when erecting lane closures on the expressway. All lane closures within one (1) mile of each other in one direction of the expressway shall be on the same side of the pavement and any lane closure within a half (1/2) mile of each other should be connected. The maximum length of any lane closure on the project and combined with any adjacent projects shall be three (3) miles. Gaps between successive permanent lane closures shall be no less than two (2) miles in length.

Private vehicles shall not be parked in the work zone. Contractor's equipment and/or vehicles shall not be parked on the shoulders or in the median during non-working hours. The parking of equipment and/or vehicles on State right-of-way will only be permitted at the locations approved by the Engineer.

TRAFFIC CONTROL SURVEILLANCE (EXPRESSWAYS)

The contractor shall provide a person with a vehicle to survey, inspect and maintain all temporary traffic control devices when a lane is closed to traffic and when hazards are present adjacent to or within 10 foot of the edge of pavement for more than 24 hours.

The surveillance person is required to drive through the project, to inspect all temporary traffic control devices, to correct all traffic control deficiencies, if possible, or immediately contact someone else to make corrections and to assist with directing traffic until such corrections are made, at intervals not to exceed 4 hours. This person shall list every inspection on an inspection form, furnished by the Engineer, and shall return a completed form on the first working day after the inspections are made.

The Contractor shall supply a telephone staffed on a 24-hour-a-day basis to receive any notification of any deficiencies regarding traffic control and protection or receive any request for improving, correcting or modifying traffic control, installations or devices, including pavement markings. The Contractor shall dispatch additional men, materials and equipment as necessary to begin to correct, improve or modify the traffic control as directed, within one hour of notification by this surveillance person or by the Department. Upon completion of such corrections and/or revisions, the Contractor shall notify the Department's Communication Center at (847) 705-4612.

Method Of Measurement: Traffic Control Surveillance will be measured on calendar day basis. One calendar day is equal to a minimum of six (6) inspections. The inspections shall start within 4 hours after the lane is closed to traffic or a hazard exists within 10 foot from the edge of pavement and shall end when the lane closure or hazard is removed.

Basis Of Payment: Surveillance will be paid for at the contract unit price per calendar day or fraction thereof for TRAFFIC CONTROL SURVEILLANCE (EXPRESSWAYS). The price shall include all labor and equipment necessary to provide the required inspection and maintenance on the expressway and on all cross streets and frontage roads which are included in the project. The cost of the materials for the maintenance of traffic control devices shall be included in the traffic control pay items.

TRAFFIC CONTROL AND PROTECTION (EXPRESSWAYS)

This work shall include furnishing, installing, maintaining, replacing, relocating, and removing all traffic control devices used for the purpose of regulating, warning, or directing traffic. Traffic control and protection shall be provided as called for in the plans, applicable Highway Standards, District One Expressway details, Standards and Supplemental Specifications, these Special Provisions, or as directed by the Engineer.

Prior to the actual beginning and completion of the various stages of construction and traffic protection, the Contractor will be required to provide lane closures and barricade systems, for preparation work such as pavement marking removal, temporary lane marking, placing temporary concrete barrier, removing existing guardrail, etc. These lane closures and barricade systems, including barricades, drums, cones, lights, signs, flagpersons etc. shall be provided in accordance with details in the plans and these Special Provisions and as approved by the Engineer. The cost of this work will not be paid for separately but shall be considered, included in the contract lump sum price for TRAFFIC CONTROL AND PROTECTION (EXPRESSWAYS). This work shall be performed at night during off-peak hours.

GENERAL

The governing factor in the execution and staging of work for this project is to provide the motoring public with the safest possible travel conditions on the expressway through the construction zone. The Contractor shall arrange his operations to keep the closing of lanes and/or ramps to a minimum.

The Contractor shall be responsible for the proper location, installation, and arrangement of all traffic control devices. Special attention shall be given to existing warning signs and overhead guide signs during all construction operations. Warning signs and existing guide signs with down arrows shall be kept consistent with the barricade placement at all times. The Contractor shall immediately remove, completely cover, or turn from the motorist's view all signs which are inconsistent with lane assignment patterns.

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

Signs

Prior to the beginning of construction operations, the Contractor will be provided a sign log of all existing signs within the limits of the construction zone. The Contractor is responsible for verifying the accuracy of the sign log. Throughout the duration of this project, the Contractor shall maintain all existing traffic signs. All provisions of Article 107.25 of the Standard Specifications shall apply except the third paragraph shall be revised to read: "The Contractor shall maintain, furnish, and replace at his own expense, any traffic sign or post which has been damaged or lost by the Contractor or a third party. The Contractor will not be held liable for third party damage to large freeway guide signs".

Exit Gore Signs

The exit gore signs as shown in Standard 701411 shall be a minimum size of 1.2m (48 inch) by 1.2m (48 inch) with 300mm (12 inch) capital letters and a 500mm (20inch) arrow.

Rough Grooved Surface Signs

The Contractor shall furnish and erect "Rough Grooved Surface" signs (W8-1107) on both sides of the expressway, 300m (1000') in advance of any milled area. These signs shall be erect on all ramps that enter the milled area. All signs shall be mounted at a minimum clearance height of 2.1m (7').

Drums/Barricades

Check barricades shall be placed in work areas perpendicular to traffic every 300m (1000'), one per lane and per shoulder, to prevent motorists from using work areas as a traveled way. Check barricades shall also be placed in advance of each open patch, or excavation, or any other hazard in the work area, the first at the edge of the open traffic lane and the second centered in the closed lane. Check barricades, either Type I or II, or drums shall be equipped with the flashing light.

To provide sufficient lane widths (3m [10'] minimum) for traffic and also working room, the Contractor shall furnish and install vertical barricades with steady burn lights, in lieu of Type II or drums, along the cold milling and asphalt paving operations. The vertical barricades shall be placed at the same spacing as the drums.

Vertical Barricades

Vertical barricades shall not be used in lane closure tapers, lane shifts, and exit ramp gores. Also, vertical barricades shall not be used as patch barricades or check barricades. Special attention shall be given, and ballast provided per manufacture's specification, to maintain the vertical barricades in an upright position and in proper alignment.

Temporary Concrete Barrier Wall

Prismatic barrier wall reflectors shall be installed on both the face of the wall next to traffic and the top of all temporary concrete barrier walls. These reflectors shall be placed at 50 foot centers along tangents and at 25 foot centers on curves. The color of these reflectors shall match the color of the edgelines (yellow on the left and crystal or white on the right). If the base of the temporary concrete barrier wall is 12 inches or less from the travel lane, then the wall shall also have a 6 inch wide temporary pavement marking edgeline (yellow on the left and white on the right).

Method of Measurement: This item of work will be measured on a lump sum basis for furnishing, installing, maintaining, replacing, relocating, and removing traffic control devices required in the plans and these Special Provisions. Traffic control and protection required under Standards 701101, 701400, 701401, 701411, 701426 and 701446 will be included with this item.

Basis of Payment:

- a) This work will be paid for at the contract lump sum price for TRAFFIC CONTROL AND PROTECTION (EXPRESSWAYS). This price shall be payment in full for all labor, materials, transportation, handling, and incidental work necessary to furnish, install, maintain, replace, relocate, and remove all Expressway traffic control devices required in the plans and specifications.

In the event the sum total value of all the work items for which traffic control and protection is required is increased or decreased by more than ten percent (10%), the contract bid price for Traffic Control and Protection will be adjusted as follows:

$$\text{Adjusted contract price} = .25P + .75P [1+(X-0.1)]$$

Where "P" is the bid unit price for Traffic Control and Protection:

$$\text{Where "X"} = \frac{\text{Difference between original and final sum total value of all work items for which traffic control and protection is required.}}{\text{Original sum total value of all work items for which traffic control and protection is required.}}$$

The value of the work items used in calculating the increase and decrease will include only items that have been added to or deducted from the contract under Article 104.02 of the Standard Specifications and only items which require use of Traffic Control and Protection.

- b) The Engineer may require additional traffic control be installed in accordance with standards and/or designs other than those included in the plans. In such cases, the standards and/or designs will be made available to the Contractor at least one week in advance of the change in traffic control. Payment for any additional traffic control required will be in accordance with Article 109.04 of the Standard Specifications.
- c) Revisions in the phasing of construction or maintenance operations, requested by the Contractor, may require traffic control to be installed in accordance with standards and/or designs other than those included in the plans. Revisions or modifications to the traffic control shown in the contract shall be submitted by the Contractor for approval by the Engineer. No additional payment will be made for a Contractor requested modification.
- d) Temporary concrete barrier wall will be measured and paid for according to Section 704.

Impact attenuators, temporary bridge rail, and temporary rumble strips will be paid for separately.

All temporary pavement markings will be measured and paid for according to Section 703 and Section 780.

All pavement marking removal will be measured and paid for according to Section 703 or Section 783.

Temporary pavement marking at the base of the temporary concrete barrier wall will be measured and paid for as TEMPORARY PAVEMENT MARKING, 6".

All prismatic barrier wall reflectors will be measured and paid for according to Section 782.

(TY Lin 9/22/2004)

WORK ZONE TRAFFIC CONTROL (LUMP SUM PAYMENT)

Effective: February 1, 1996 Revised: November 1, 1996

Specific traffic control plan details and Special Provisions have been prepared for this contract.

Method of Measurement: All traffic control (except traffic control pavement marking) indicated on the traffic control plan details and specified in the Special Provisions will be measured for payment on a lump sum basis. Traffic control pavement markings will be measured per meter (foot).

Basis of Payment: All traffic control and protection will be paid for at the contract lump sum price for TRAFFIC CONTROL AND PROTECTION (SPECIAL). This price shall be payment in full for all labor, materials, transportation, handling and incidental work necessary to furnish, install, maintain and remove all traffic control devices required as indicated in the plans and as approved by the Engineer.

SHORT-TERM PAVEMENT MARKING, TEMPORARY PAVEMENT MARKING and PAVEMENT MARKING TAPE TYPE III will be paid for separately.

TRAFFIC CONTROL FOR WORK ZONE AREAS

Effective: 9/14/95 Revised: 1/30/03

Work zone entry and exit openings shall be established daily by the Contractor with the approval of the Engineer. All vehicles including cars and pickup trucks shall exit the work zone at the exit openings. All trucks shall enter the work zone at the entry openings. These openings shall be signed in accordance with the details shown elsewhere in the plans and shall be under flagger control during working hours.

The Contractor shall plan his trucking operations into and out of the work zone as well as on to and off the expressway to maintain adequate merging distance. Merging distances to cross all lanes of traffic shall be no less than 1/2 mile. This distance is the length from where the trucks enter the expressway to where the trucks enter the work zone. It is also the length from where the trucks exit the work zone to where the trucks exit the expressway. The stopping of expressway traffic to allow trucks to change lanes and/or cross the expressway is prohibited.

Failure to comply with the above requirements will result in a Traffic Control Deficiency charge. The deficiency charge will be calculated as outlined in the special provision for "TRAFFIC CONTROL DEFICIENCY DEDUCTION". The Contractor will be assessed this daily charge for each day a deficiency is documented by the Engineer.

TEMPORARY INFORMATION SIGNING

Description:

This work shall consist of furnishing, installing, maintaining, relocating for various stages of construction and eventually removing temporary information signing. Included in this item shall

be any impacted ground-mount signs, signs on temporary stands, truss-mount signs, bridge-mount signs, and overlay sign panels which cover portions of existing signs.

Materials:

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

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

Note 1. The Contractor may use 5/8 inch instead of 3/4 inch thick plywood.

Note 2. Type A sheeting can be used on the plywood base.

Note 3. All sign faces shall be Type A except all orange signs shall meet the requirements of Article 1084.02(b).

Note 4. The overlay panels shall be 0.08 inch thick.

General Construction Requirements

Installation:

The Contractor prior to fabrication shall verify the sign sizes and legend sizes. Signs, which are placed along the expressway shoulder and/or within the construction zone, shall be installed according to the requirements of Article 702.05 and Article 720.04. The signs shall be 7 ft. above the near edge of the pavement and shall be a minimum of 2 ft. beyond the edge of the paved shoulder. A minimum of two posts per sign shall be used. The attachment of temporary signs to the existing sign structures or sign panels shall be approved by the Engineer. Any damage to the existing signs due to the Contractor's operations shall be repaired or signs replaced, as determined by the Engineer, at the Contractor's expense.

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

Method of Measurement:

This work shall be measured for payment in square feet edge to edge (horizontally and vertically). All hardware, posts, supports, bases for ground mounted signs, and connections, which are required for mounting these signs shall be included as part of this pay item.

Basis of Payment:

This work shall be paid at the contract unit price per square foot for TEMPORARY INFORMATION SIGNING, which price shall be full compensation for all labor, equipment and materials required for performing the work as herein specified.

CHANGEABLE MESSAGE SIGNS

This item shall be as contained in the Special Provisions for "Portable Changeable Message Signs" except as follows:

Six signs will be required for this contract. The signs shall be located as directed by the Engineer.

SEDIMENT CONTROL, DRAINAGE STRUCTURE INLET FILTER CLEANING

Description:

This work shall consist of cleaning sediment out of a drainage structure inlet filter when directed by the Engineer. This cleaning work is to be periodically performed as directed by the Engineer, for the duration of the use of each drainage structure inlet filter assembly. The Engineer will be sole judge of the need for cleaning, based on the rate that debris and silt is collected at each inlet filter location.

Cleaning of the inlet filter shall consist of inspecting, cleaning (includes removal and proper disposal of debris and silt that has accumulated in the filter bag), by vactoring, removing and dumping or any other method approved by the Engineer.

Method of Measurement:

Cleaning of the drainage structure inlet filter shall be measured for payment each time that the cleaning work is performed at each of the drainage structure inlet filter locations.

Basis of Payment:

The work will be paid for at the contract unit price per each for SEDIMENT CONTROL, DRAINAGE STRUCTURE INLET FILTER CLEANING, which price shall include all costs for labor, materials, equipment, and incidentals necessary to perform the work.

CONSTRUCTION AIR QUALITY - DUST CONTROL

Description. This work shall consist of developing and implementing a detailed Dust Control Plan (DCP). Development of a DCP is required in "Non-attainment" and "Maintenance" areas, per Article 107.36 of the Standard Specifications. All construction activities shall be governed by the DCP. The nature and extent of dust generating activities, and specific control techniques appropriate to specific situations shall be discussed at the pre-construction meeting, with subsequent development of the DCP to include but not be limited to the requirements below.

The Contractor is responsible for the control of dust at all times during the duration of the contract, 24 hours per day, 7 days per week, including non-working hours, weekends, and holidays. This work shall be considered complete after the completion of all permanent erosion control measures required for the contract, and after all temporary and permanent seeding has taken place. Work on this contract shall be conducted in a manner that will not result in generating excessive air borne particulate matter (PM) or nuisance dust conditions.

The DCP shall include legible copies of the product literature and Material Safety Data Sheets for dust suppression agents and stabilizers the contractor proposes to use. The Dust Control Plan shall involve the implementation of control measures before, during and after conducting any dust generating operation. These controls must be in place on non-working days and after working hours, not just while work is being done on the site. The Dust Control Plan must contain information specific to the project site, proposed work, and dust control measures to be implemented. A copy of the Dust Control Plan must be available on the project site at all times.

The Dust Control Plan must contain, at a minimum, all of the following information:

- Name, address and phone number of the person(s) responsible for the dust generating operation and for the submittal and implementation of the Dust Control Plan.

- A drawing specifying the site boundaries of the project with the areas to be disturbed, the locations of the nearest public roads, and all planned exit and entrance locations to the site from any paved public roadways.
- Control measures to be applied to all actual and potential fugitive dust sources before, during and after conducting any dust generating operation, including non-work hours and non-work days.
- A list of dust suppressants to be applied, including product specifications, Material Safety Data Sheets, and product label instructions that include the method, frequency and intensity of applications; and information on the environmental impacts and approval or certifications related to the appropriate and safe use for ground applications.
- A contingency plan consisting of at least one contingency measure for each activity occurring on the site in case the primary control measure proves inadequate.

The Contractor shall submit two copies of the DCP that outlines in detail the measures to be implemented by the Contractor complying with this section, including prevention, cleanup, and other measures at least 14 days before beginning any dust generating activity. The Contractor shall not begin any dust generating activities until the Engineer approves the DCP in writing. Failure to comply with the DCP or provisions herein will subject the contractor to an "Environmental Deficiency Deduction," as outlined below.

Materials

1. Dust Suppression Agents
 - Dust suppression agents shall be water soluble, non-toxic, non-reactive, non-volatile, and non-foaming. The use of petroleum for dust control is prohibited.
 - Calcium Chloride shall conform to the requirements of Article 1013.01 of the Standard Specifications. Other commercially available dust suppression agents may be substituted for calcium chloride subject to the approval of the Engineer. Material Safety Data Sheets must be reviewed and approved by the Engineer prior to the use of any substances other than Calcium Chloride.
 - Water shall meet the requirements of Article 1002 of the Standard Specifications.
2. Soil stabilizers shall consist of seed and mulch meeting the requirements of Article 1081.06 (a) (2) and (3).
3. Covers for stockpiles shall be commercially available plastic tarps, or other materials approved by the Engineer.

Construction Methods. Dust suppression agents shall be used to provide temporary control of dust on haul roads and other active work areas. Several applications per day may be necessary to control dust depending upon meteorological conditions and work activity. The Contractor shall apply dust suppression on a routine basis as necessary or as directed by the Engineer to control dust. Wet suppression consists of the application of water or a wetting agent in solution with water. Wetting agents shall not be applied directly to live plant material. Wet suppression equipment shall consist of sprinkler pipelines, tanks, tank trucks or other devices approved by the Engineer, capable of providing a regulated flow, uniform spray and positive shut off.

Calcium chloride dust suppression agents may be used in lieu of wet suppression only when freezing conditions exist. Calcium chloride shall be uniformly applied by a mechanical spreader at a rate of 1 and 1/2 pounds per square yard or its equivalent liquid, unless otherwise directed by the Engineer. Calcium chloride shall not be directly applied to live plant material.

Calcium chloride must not be stored outdoors without an impermeable cover. Storage must be on an impermeable surface such as paved asphalt or appropriately treated concrete of sufficient thickness to avoid exfiltration. Storage should be as airtight as possible to limit the calcium chloride's absorbing moisture from the air. No storage facilities will be allowed within 100 feet of a storm sewer, or any other drain. Positive drainage must be maintained on all treated surfaces. Ditches, culverts and other structures must be kept clean to ensure proper drainage and to limit the amount of water infiltrating earth surfaces and thereby leeching out chlorides. If calcium chloride is applied dry, or during dry periods, and crystals are seen on the road surface, the road should be wetted sufficiently to dissolve the calcium chloride. Wetting should be limited to an amount that will sufficiently cause the calcium chloride to penetrate the surface but not to the point of causing any runoff from the road surface. Other approved dust suppression agents shall be applied and used as per the manufacturer's instructions.

Haul truck cargo areas shall be securely covered during the transport of materials on public roadways that are prone to cause dust.

Public Roadway Dust Control. Track out, including carryout and spillage of material that adheres to the exterior surfaces of or are spilled from motor vehicles and/or equipment and subsequently fall onto a paved public roadway must be controlled at all times. Clean up of carryout and spillage is required immediately if it extends a cumulative distance of 50 feet or more on a paved public roadway. If the extent of carryout is less than 50 feet, clean up at the end of the day is permissible. Clean up of paved surfaces shall be by wet spray power vacuum street sweeper. Dry power sweeping is prohibited.

Control of earthwork dust. During batch drop operations (i.e. earthwork with a front-end loader, clamshell bucket, or backhoe), the free drop height of excavated or aggregate material shall be reduced to minimum heights as necessary to perform the specified task, and to minimize the generation of dust. To prevent spills during transport, a minimum of 2 inches of freeboard space shall be maintained between the material load and the top of the truck cargo bed rail. A maximum drop height of two feet (or minimum height allowed by equipment) will be allowed, or to heights as directed by the Engineer.

Control of dust on stockpiles and inactive work areas. The Contractor shall use the following methods to control dust and wind erosion of stockpiles and inactive areas of disturbed soil:

- Dust suppression agents shall be used during active stockpile load-in, load-out, and maintenance activities.
- Soil stabilizers (hydraulic or chemical mulch) shall be applied to the surface of inactive stockpiles and other inactive areas of disturbed soil. Final grading and seeding of inactive areas shall occur immediately after construction activity is completed in an area and as directed by the Engineer.
- Plastic tarps may be used on small stockpiles, secured with sandbags or an equivalent method approved by the Engineer, to prevent the cover from being dislodged by the wind. The Contractor shall repair or replace the covers whenever damaged or dislodged at no additional cost.

Method of Measurement. All measuring devices shall be furnished by the Contractor and approved by the Engineer.

Calcium chloride and other approved dust suppression agents shall be mixed with water at the rate specified by the manufacturer and measured for payment in units of 1000 Gallons of solution applied.

The application of soil stabilizers shall be measured by weight (pounds) of soil stabilizer. The soil stabilizer will then be added to water to form a solution in accordance with the manufacturer's recommendation.

All other dust control measures will not be measured for payment.

Basis of Payment. The application of dust suppression agents shall be paid for at the contract unit price per unit for APPLYING DUST SUPPRESSION AGENT.

Soil stabilizers will be paid for at the contract price per pound for SOIL STABILIZERS.

All other dust control measures will not be paid for directly but shall be considered as included in the various items involved and no additional compensation will be allowed.

CONSTRUCTION AIR QUALITY – DIESEL VEHICLE EMISSIONS CONTROLS

Description. The reduction of emissions of Carbon Monoxide (CO), Hydrocarbons (HC), Nitrogen oxides (NOx), and Particulate Matter (PM) will be accomplished by installing Retrofit Emission Control Devices and/or by using cleaner burning diesel fuels. The term "equipment" refers to any and all diesel fuel powered devices rated at 50 Horse power (HP) and above, to be used on the project site for any length of time, (including any "rented" or "rental" equipment).

All Contractor and Sub-contractor diesel powered equipment with engine horsepower (HP) ratings of 50 HP and above, that are on the project or are assigned to the contract shall be prohibited from using "off-road" diesel fuel (above 500 parts per million (ppm) sulfur content) at any time. In addition, diesel powered equipment shall be either (1) retrofitted with Emissions Control Devices *and* use Cleaner burning "on-road" diesel fuel (500 ppm sulfur content or less), or (2) use Ultra Low Sulfur Diesel fuel (ULSD) exclusively (15 ppm sulfur content or less), in order to reduce diesel particulate matter emissions. Large cranes (Sky cranes or Link Belt cranes), which are responsible for critical lift operations are exempt from installing Retrofit Emission Control Devices if they adversely affect equipment operation.

In addition, all construction motor vehicles (both on-road and off-road, gasoline or diesel fuel powered) shall comply with all pertinent State and Federal regulations relative to exhaust emission controls and safety, including opacity. Frequently Asked Questions (FAQ's) regarding Illinois Environmental Protection Agency (IEPA) emissions testing for gasoline powered vehicles can be accessed at (www.epa.state.il.us/air/vim/faq/testing.html). Regulations regarding diesel powered vehicles over 16,000 pounds, and the Diesel Emission Inspection Program (Title 92: Transportation Part 460, Diesel Emission Inspection Program, Subpart A: General) can be accessed at (www.dot.state.il.us/regulations.html). Diesel powered vehicles less than 16,000 pounds are exempt from testing by IDOT. All diesel powered equipment used on the project site shall be subject to reasonable, random spot checks for compliance with the required emissions controls and proper diesel fuel usage. The Secretary of State, Illinois State Police

and other law enforcement officers shall enforce Part 460. For additional information concerning Illinois diesel emission inspection requirements, please call the Illinois Department of Transportation, Diesel Emission Inspections Unit, at 217-557-6081.

The Retrofit Emission Control Devices shall consist of oxidation catalysts, or similar retrofit equipment control technology that (1) is included on the Environmental Protection Agency (EPA) *Verified Retrofit Technology List* (www.epa.gov/otaq/retrofit/retroverifiedlist.html) and (2) is verified by EPA or certified by the manufacturer via letter, to provide a minimum emissions reduction of 20% PM10, 40% CO, and 50% HC when used with "on-road" diesel fuel. As noted above, the Retrofit Emission Control Device *must be used with on-road diesel fuel* (500 ppm sulfur content or less).

If used, ULSD fuel shall conform to American Society for Testing and Materials (ASTM) D-975 diesel with the following additional specifications:

- ASTM D-5453 15 ppm Sulfur max.
- ASTM D-6078 Lubricity (SBOCLE) 3100 g min.
- ASTM D-613 Cetane 45 min.
- Dyed (for Off-road use)

Construction shall not proceed until the contractor submits a certified list of the diesel powered equipment that will be retrofitted with emission control devices and use "on-road" diesel fuel, and a list of equipment that will use ULSD fuel only. The list(s) shall include (1) the equipment number, type, make, and contractor/sub-contractor name; (2) the emission control devices make, model and EPA verification number; and (3) the type and source of clean fuels to be used. Vehicles reported as fitted with emissions control devices shall be made available to the Engineer for visual inspection of the device installation by qualified staff, prior to being used on the project site. Diesel powered equipment in non-compliance will not be allowed to be used on the project site, and is also subject to a "Notice of Non-Compliance" as outlined below under "Environmental Deficiency Deduction."

The contractor shall submit monthly summary reports, updating the list of construction equipment, and include certified copies of the diesel fuel delivery slips (for both "on-road" and ULSD) for the reporting time period, noting the type of diesel fuel used with each piece of diesel powered equipment. The addition or deletion of any diesel powered equipment shall be included in the summary and noted on the monthly report.

If any diesel powered equipment is found to be in non-compliance with any portion of this specification, the Engineer will issue the contractor a Notice of Non-Compliance and given an appropriate period of time, as outlined below under "Environmental Deficiency Deduction," in which to bring the equipment into compliance or remove it from the project site. Failure to comply with the "Diesel Vehicle Emission Controls", shall also subject the Contractor or sub-contractor to an "Environmental Deficiency Deduction," as outlined below.

Any costs associated with bringing any diesel powered equipment into compliance with these "Diesel Vehicle Emissions Controls" shall be included in the overall cost of the contract. In addition, there shall be no time granted to the contractor for compliance with this notice. The contractor's compliance with this notice and any associated regulations shall also not be grounds for a claim.

A. IDLING. The contractor shall establish truck-staging areas for all diesel powered vehicles that are waiting to load or unload material at the contract area. Such zones shall be located where the diesel emissions from the equipment will have a minimum impact on adjacent abutters and sensitive receptors of the general public. The Department will coordinate such locations with the Contractor and City Of Chicago authorities, including local aldermen, in the selection of staging areas, whether within or outside the existing highway right-of-way (ROW), to avoid locations near sensitive areas or populations to the extent possible. Sensitive receptors include, but are not limited to hospitals, schools, residences, motels, hotels, daycare facilities, elderly housing and convalescent facilities. Diesel powered engines shall also be located as far away as possible from fresh air intakes, air conditioners, and windows. Idling of diesel powered equipment shall not be permitted during periods of non-active vehicle use. Diesel powered engines shall not be allowed to idle for more than five consecutive minutes when the equipment is not in use, occupied by an operator, or otherwise in motion, except only as follows:

When the equipment is forced to remain motionless because of traffic conditions or mechanical difficulties over which the operator has no control;
When it is necessary to operate auxiliary systems installed on the equipment, only when such system operation is necessary to accomplish the intended use of the equipment;
To bring the equipment to the manufacturer's recommended operating temperature;
When the outdoor temperature is below forty-five (45) degrees Fahrenheit or above eighty (80) degrees Fahrenheit;
When the equipment is being repaired.

All work shall be conducted to ensure that no harmful effects are caused to adjacent sensitive receptors. Equipment and equipment operators found in non-compliance with these idling provisions shall receive a warning, and on the next offense be subject to an Environmental Deficiency Deduction as outlined below. The contractor or sub-contractor may reserve the right to enforce this deduction on their own equipment operator, as necessary.

B. MITIGATION. Air quality monitoring will be conducted throughout the course of the Dan Ryan reconstruction project, by a separate air quality consultant. The contractor shall designate a point person to be responsive to IDOT in the event construction related air quality issues arise. If the ongoing monitoring detects an adverse air quality issue that is due to, or exacerbated by construction activities, the contractors point person will be required to consult with the Engineer, to determine the appropriate course of action.

Appropriate mitigation measures can include a variety of actions ranging from, but not limited to additional watering, removal of construction equipment from nearby sensitive receptors, shut down of diesel powered equipment, or other mitigation measures which may be required as data becomes available and as approved by the Engineer.

Method of Measurement and Basis of Payment:

The CONSTRUCTION AIR QUALITY – DIESEL EMISSIONS CONTROLS will not be measured for payment and the cost of this work shall be included in the unit prices bid and no additional compensation will be allowed

CONSTRUCTION NOISE MITIGATION

Description This work shall consist of implementing construction noise restrictions as outlined in a project Construction Noise Mitigation plan. Work on the project shall be in accordance with the Construction Noise Mitigation plan submitted by the contractor, applicable sections of Article 107.35 of the Standard Specifications, and modifications as contained herein for construction noise.

The contractor must provide advance notification, and secure approval from the Engineer prior to the use of heavy construction equipment outside normal construction work hours ("normal construction work hours" as specified in Article 107.35 of the Standard Specifications). Inspection and maintenance of all vehicle exhaust systems shall be conducted on a monthly basis, (or as determined by the Engineer), for all such vehicles and other equipment assigned to or utilized on the project site. Inspections shall be conducted by personnel having a working knowledge of exhaust systems so that proper recommendations regarding the adequacy of the mufflers can be established.

Construction Equipment

Pavement Breakers create high concentrations of low frequency sound energy, and noise attenuation can be achieved through the introduction of high-mass material between the noise source and the receiver. The attachment of shrouds (sound curtains) to the steel frame around the breaker shall be installed, as equipment allows. The operation of pavement breakers shall be prohibited outside of normal work hours, as specified herein, unless otherwise approved by the Engineer.

Special care shall be taken with respect to the set up and operation of concrete batch and concrete crushing plants to minimize the potential noise impacts to the adjacent community. The Department will work with the Contractor and City Of Chicago authorities, including local aldermen in selecting construction concrete batch and/or crushing locations, whether within or outside the ROW, to avoid locations near sensitive areas or populations to the extent possible. All local, City, Village, Town and/or Township rules, regulations, and/or requirements regarding batch and crushing plants shall be followed, as instructed by the Engineer.

Compressors or generators shall be located as far away as possible from sensitive receptors. Compressors and generators shall be positioned such that the coding fan intake does not point towards the community. The Contractor shall review stationary equipment placement with the Engineer prior to commencement of work.

Method of Measurement and Basis of Payment:

The CONSTRUCTION NOISE MITIGATION will not be measured for payment and the cost of this work shall be included in the unit prices bid and no additional compensation will be allowed.

ENVIRONMENTAL DEFICIENCY DEDUCTION

To ensure a prompt response to incidents involving the integrity of work zone Environmental (Air Quality and Noise) Control, the Contractor shall provide a telephone number where a responsible individual can be contacted on a 24 hour a day basis.

When the Engineer is notified, or determines an environmental control deficiency exists, he/she will notify the Contractor in writing, and direct the Contractor to correct the deficiency within a specified time frame. The specified time frame, which begins upon contractor notification, will be from 1/2 hour to 24 hours long, based on the urgency of the situation and the nature of the deficiency. The Engineer shall be the sole judge.

The deficiency may include lack of repair, maintenance or non-compliance with the Special Provisions for Construction Air Quality Dust Control and/or Construction Noise Mitigation.

If the Contractor fails to correct the deficiency within the specified time frame, a daily monetary deduction will be imposed for each calendar day or fraction thereof the deficiency exists. The calendar day(s) will begin with Contractor's notification and end with the Engineer's acceptance of the correction. The daily monetary deduction will be either \$1,000.00 or 0.05 percent of the awarded contract value, whichever is greater.

In addition, if the Contractor or sub-contractor fails to respond within the allotted time frame, the Engineer may take action to correct the deficiency, or may cause the correction of the deficiency to be made by others, the cost thereof being deducted from monies due or which may become due the Contractor or sub-contractor. This corrective action will in no way relieve the Contractor or sub-contractor of his/her contractual requirements or responsibilities, and shall not be grounds for any claim.

If a Contractor or sub-contractor accumulates three (3) Deficiency Deductions for the same deficiency, in a contract period, the contractor will be shut down until the deficiency is corrected. Such a shut down will not be grounds for any extension of the completion date, waiver of penalties, or be grounds for any claim.

BACKFILLING STORM SEWER UNDER ROADWAY

For storm sewer constructed under roadway, backfilling methods two and three authorized under the provisions of Article 550.07 will not be allowed.

This special provision shall also apply to combined sewer.

(TY Lin 10/28/2004)

COMBINED SEWER REMOVAL

Description. This work consists of the removal and satisfactory disposal of existing combined sewer, of the diameter specified, at the locations shown on the plans or as directed by the Engineer. This work shall be performed in accordance with the applicable portions of Section 202 and 550 of the Standard Specifications, the details in the plans and as herein specified.

General Requirements. Trenches resulting from the removal of combined sewer shall be backfilled according to the applicable requirements of Article 550.07, method one. Disposal of pipe and other unsuitable material shall be according to Article 202.03.

Method of Measurement. Combined sewer removal of the various diameters shall be measured for payment in feet, as removed.

Basis of Payment. This work will be paid for at the contract unit price per foot for COMBINED SEWER REMOVAL, of the diameter specified, which will be payment in full for excavation; except excavation in rock; removing and disposing of the pipe; and backfilling trench. If trench backfill is required, it will be paid for separately.

All bulk heads used to seal off existing combined sewers will not be paid for separately but shall be included in the unit price for this item.

COMBINED SEWER

Description. This work shall consist of constructing Combined Sewer of the type and size specified, as shown on the plans or directed by the Engineer.

Project Conditions. Ground water and sand are expected to be encountered during excavation for sewers.

Materials

a) Pipe and Fittings:

- 1) Pipe for Combined Sewers, Type 1: Combined Sewers, Type 1 shall be constructed of ductile iron pipe and fittings conforming to ANSI A21.51, Class 2 Specification, with 0.33 inch wall thickness and have a push on type bell end.

Where less than 3 feet of cover exists, ductile iron pipe shall be used at no increase in cost unless a separate item is provided for ductile iron pipe of the diameter required.

- 2) Pipe for Combined Sewers, Type 2, 3 and 4: Combined Sewers, Types 2, 3 and 4, less than 24 inch diameter shall be vitrified clay socket pipe conforming with the specifications for Extra Strength Vitrified Clay Pipe, conforming to ASTM C700. Combined Sewers 24 inch and larger shall be constructed of reinforced concrete pipe conforming to Section 1040.03 of the Standard Specifications. The class of pipe required for Combined Sewers 24" and larger shall be according to Table IA in Section 542 of the Standard Specifications, except that the minimum class of pipe allowed shall be Class III.

b) Catch Basin and Inlet Connections: Catch basin connections shall be 8-inch pipe of the type and quality specified herein.

Inlet connections shall be 8-inch Ductile Iron Pipe.

Drain connections, (house services), shall be Extra Strength Vitrified Clay Pipe, conforming to ASTM C700. The diameter shall match existing.

c) Joints:

- 1) Joints for ductile iron pipe shall be push-on type and approved by the Engineer.

- 2) Joints for vitrified clay pipe shall conform to ASTM C425 Compression Joints for Vitrified Clay bell and spigot pipe.
- 3) Joints for reinforced concrete pipe shall be rubber gasketed and sealed inside and outside with concrete mortar. Each length of pipe shall be provided with bell and spigot or tongue and groove ends of concrete formed on machined rings to insure accurate joint surfaces. The theoretical diameter and the actual diameters of the contact surfaces shall not vary more than 1/16 inch. Each spigot or tongue shall be recessed to accommodate either a round rubber gasket or other confined, compression-type rubber gasket.

The rubber gaskets shall be continuous, precision molded gaskets manufactured from a compound containing a basic polymer of not less than 50%, by volume, of neoprene and shall contain no vulcanized vegetable oil, reclaimed rubber of any deleterious substance and shall be the product of a manufacturer having at least 5 years experience in the manufacture of rubber gaskets for sewer pipe joints. Circular gaskets shall be of sufficient cross-sectional area and volume so that when the joint is assembled, the gasket will be compressed to form a water-tight seal. Gaskets shall be extruded or molded and cured in such a manner that any cross-section will be dense, homogenous and free from porosity, blisters, pitting, and other imperfections. The gaskets shall be molded or extruded to the tolerance as specified. All gaskets shall be manufactured within a tolerance of plus or minus 1/64 inch on any dimension measured at any cross section. The physical properties of the rubber gaskets shall conform to ASTM C443M-98. Prior to constructing any combined sewer, the Contractor must submit to the Engineer for approval, detailed drawings of the pipe and pipe joint to be furnished and placed under this Contract, including the dimensions of the rubber gasket and the joint in the assembled pipe position. The gaskets shall be seated on the pipe in accordance with the manufacturer's specifications and the ends of the pipe and the gaskets shall be kept clean and free from damage until the joint has been made.

- d) Bedding: The pipe foundation shall be bedding material consisting of gravel, crushed gravel, or crushed stone, having a CA-11 gradation and conforming to the applicable portions of Section 1004 of the Standard Specifications. Place at least 4 inches in depth below the pipe so that at least the lower half of the pipe will be uniformly supported for its entire length. The cost of furnishing, placing and compacting bedding material will be included for the bid price for COMBINED SEWERS, of the type and size specified.
- e) Brick and Mortar: Brick shall be Grade S.W. Building Brick. Mortar shall be as specified for Brick Masonry under Article 602.05 of the Standard Specifications.

Construction Requirements.

- a) General Requirements: Work under these items shall be performed in accordance with Section 550 of the Standard Specifications and Standard Specification for Sewer Construction, Chicago Department of Water Management (CDOWM), except as herein modified. In case of discrepancies, the CDOWM Specifications shall govern over Section 550 of the Standard Specifications.

No cracked, broken or otherwise defective lengths of pipe shall be used in the work. All pipe and fittings shall be reinspected for soundness and damage due to handling immediately before being laid, and any pipe not conforming to the requirements of this Special Provision shall be rejected and removed immediately from the site of the work.

- b) Dewatering: Trenches shall be kept as free as practicable from excess water until the mortar in the joints has sufficiently hardened.
- c) Sheeting and Bracing: Install sheeting and bracing to support the walls of the trench where soil, groundwater and trench depth so require. Where support is necessary, install sheeting and bracing for the full depth of the trench.
- d) Installation: Each length of pipe shall be laid to the required line and grade on a firm, even embedment as described in Article 206.5 of the CDOWM Specifications and as shown on the Plans, with the groove end up-grade. After the gasketed pipe is lowered into position, it shall be drawn home by use of a winch and cable so as to be in proper alignment. The Contractor must prevent excessive movement of the pipe when partially or completely home so as not to displace the rubber gasket or damage the pipe spigot or bell.

Seal all joints in reinforced concrete pipe sewers with portland cement mortar applied to the joint and finished smooth on the entire circumference of pipe on the inside and, so far as practicable, on the outside circumference. All foreign materials and excess mortar shall be removed from the inside of the sewer as pipe laying progresses.

Whenever pipe laying is discontinued, the unfinished end of the sewer shall be protected from displacement and cave-in or other injury and a suitable stopper or dam shall be placed in the end of the sewer.

- e) Disposal of Excavated Material: Unless otherwise directed by the Engineer, all excavated material not needed on the work site shall be legally disposed of beyond the limits of the improvement within 24 hours in accordance with Section 202.03 of the Standard Specifications.
- f) Connections to Existing and Proposed Sewers: Where a combined sewer or drain connection is to be made to a proposed ESVCP combined sewer, a manufactured Y or T branch shall be installed in the sewer at this junction. Where a combined sewer or drain connection is to be made to a proposed RCP combined sewer a pipe section with a predrilled hole of the proper diameter shall be installed at this junction. The junction of the proposed combined sewers shall be constructed as shown in the details in the plans.

Where a combined sewer or drain connection is to be made to proposed RCP sewer, tapered holes shall be so formed that the drain connection will enter the sewer at an angle of approximately 90 degrees with the axis of the sewer. Whenever the diameter of a preformed tapered hole is equal to or exceeds 50% of the diameter of the pipe, additional reinforcement steel satisfactory to the Engineer shall be placed around the hole. Pipe sections shall not be less than 4 feet or more than 8 feet long unless otherwise approved by the Engineer. The work shall be carefully planned with regard to the matching of pipe openings to existing drain locations and the cutting of pipes for connections will be permitted in special cases, and where permitted, shall be done in a

manner satisfactory to and approved by the Engineer. If preformed tapered holes have not been provided for the connection of the drains and for future drain connections, the Contractor must make circular cored openings in the sewer pipe.

When a combined sewer or drain connection is to be made to an existing sewer, a "T" or "Y" saddle shall be installed per the details contained in the plans. The circular opening in the existing combined sewer shall be core drilled to the same size as the external diameter of the proposed combined sewer or drain connection. The protrusion of the proposed sewer into the existing sewer shall not exceed a maximum of 1-inch. Edge of core holes shall be a minimum of 1.5 feet from the edge of pipe and a minimum distance of 5 feet horizontally between holes. Holes shall not be drilled higher than the 10 and 2 o'clock positions.

The joint between the existing combined sewer and the proposed combined sewer shall be completely sealed with brick and mortar as shown in the details contained in the plans.

If the existing sewer pipe is cracked, broken or otherwise damaged by the Contractor in making this cored opening, the Contractor must replace this section of pipe with a pipe equal to and similar in all respects to the pipe of the existing sewer. The Contractor must do this Work in a careful, manner without extra compensation, and so as not to disturb the adjoining sections of existing pipe. The junction of the proposed and existing sewers shall be constructed as shown in the details contained in the plans.

- g) Maintenance of Sewer Flow: Flow in the sewers shall not be interrupted unless adequate provisions, approved by the Engineer, are made to continue service. A temporary flume pipe shall be installed at the end of each day between the existing and proposed sewers at locations where an existing sewer is being replaced.
- h) Preventing Debris from Entering Sewers: Care must be taken to prevent mud, sand or other obstructing materials from entering the sewer. All such materials that enter the sewer must be removed and the sewer left clean and unobstructed upon completion of the work. This shall include all debris created in making the circular opening in existing sewers for purposes of combined sewer connections and all materials employed to seal the joints.
- i) Replacement of Broken Tile: Where broken tile in the existing sewer is determined, the Contractor must replace the broken tile and the work shall be paid for at the contract unit price per foot for Combined Sewer of the type and size specified.
- j) Riser Pipes for Future Laterals: The Contractor must when directed by the Engineer, place riser pipes for future laterals from their connection with the sewer to such a height as directed.
- k) Abandoned Sewers and Drains: Abandoned sewers and drains, as designated by the Engineer, shall be plugged with Class SI concrete or brick and suitable mortar to the satisfaction of the Engineer. This work will not be paid for separately, but shall be considered as included in the contract unit price for the Combined Sewer items.
- l) Openings in Existing Manholes: New opening or enlargements of existing openings in existing manholes that are required to accommodate the proposed combined sewers

shall not be measured for payment but considered incidental to the combined sewer items.

- m) Removal of Existing Sewers in Proposed Sewer Trench: Existing sewers within the proposed sewer trench shall be removed and disposed of legally offsite, in accordance with Section 202.03 of the Standard Specifications.
- n) Inspection/Televising of Sewers: All sewers and sewer structures shall be inspected by the CDOWM prior to the final payment to the Contractor. In conjunction with sewer inspections, the Contractor must furnish videotape of a televised inspection of the interior of all existing and/or new main sewers affected by work performed under this contract. The final acceptance of the sewer shall be based on the sewer videotape.

The videotape of existing and/or new main sewers shall be recorded under the supervision of the Engineer and the cost of producing and furnishing same shall be paid for separately as VIDEO TAPING OF SEWERS. Work shall be performed according to CDOWM standards. Videotape submittals shall include location maps, legends, descriptions, and two copies of sewer videotapes. Contractor must submit at the pre-construction meeting the name, phone number, and contact person of the firm that shall be performing the videotaping of the sewer.

Videotaping of the existing sewer shall be performed prior to starting construction. Videotaping of new sewer shall be performed as soon as practical but no later than two weeks after placement of subbase granular material or aggregate base course. The existing and new sewers shall be cleaned prior to videotaping.

Deficiencies exposed on the videotape shall be corrected by the Contractor within 30 calendar days of notification at no cost to the City. Pavement sections requiring removal shall be full panel sections and pavement anchors shall be required for pavement restoration. The Contractor must re-videotape the sewer to verify that the deficiencies noted on any previous videotape have been corrected to the satisfaction of the CDOWM. Costs to re-videotape the sewer, regardless of the number times required, shall be borne solely by the Contractor.

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

Method of Measurement. Combined sewers of the type and size specified shall be measured for payment in place in feet, with the exception of ductile iron pipe sewers within the first 4 feet of an inlet connection, which is included in the bid price for Inlet Type A (Including Frame & Lid). If more than 4 feet of pipe is required to connect an inlet to a catch basin, this additional pipe will be paid for at the contract unit price per foot for Combined Sewers, Ductile Iron Pipe 8", measured in place and as specified in Article 550.08 of the Standard Specifications. Existing sewers within the proposed sewer trench to be removed will not be measured for payment.

Pavement removal for proposed sewer trenches outside the limits of the scheduled pavement removal shall not be measured separately.

Half traps for pay item CATCH BASINS, TYPE A, 4'-DIAMETER, TYPE 1 FRAME, OPEN LID (CITY OF CHICAGO) shall not be measured for payment but considered included in the contract unit price for this item.

Half traps for pay item CATCH BASINS, SPECIAL, 4'-DIAMETER, TYPE 1 FRAME, OPEN LID shall be measured and paid for as pipe of the specified type and diameter.

Trench backfill will be measured for payment as specified in Article 208.03.

House drain connections to existing and proposed combined sewers will be measured for payment per lineal foot. The drain connection shall be measured along the top of the pipe from the edge of the trench to the centerline of the combined sewer. The diameter of the drain connection pipe shall match existing.

Basis of Payment. This Work will be paid for at the contract unit price per foot of COMBINED SEWER, of the class, type, and diameter specified, which price shall include pipe, fittings, openings to existing manhole wall, excavation and disposal of existing material, sewers, bedding and all other work required to complete the sewer installation as specified. Any dewatering and sheeting or shoring required to do the work as specified will not be paid for separately but will be included in to the contract unit price of this item.

Trench backfill will be paid for in accordance with Article 208.04 of the Standard Specifications.

House drain connections to existing and proposed combined sewers will be paid for at the contract unit price per lineal foot of DRAIN CONNECTIONS, which price shall include all work to make the sewer connection as specified herein.

VIDEO TAPING OF SEWERS

Description This Work shall consist of sewer inspection by videotaping of the combined sewers, as shown on the Plans or directed by the Engineer.

Videotaping and Inspection Requirements

a). Existing Conditions

It shall be the Contractor's responsibility to inspect the sewer prior to the start of televising and to inform the Engineer of any structural deficiencies in the sewer, which may hinder or impede the televising of the sewer.

The construction materials of the sewers to be televised may be brick, cast-in-place concrete, pre-cast reinforced concrete pipe, clay tile pipe, ductile iron pipe and thermoset plastic pipe.

All and any damage caused by operations or operatives connected with this Contract shall be the responsibility of the Contractor.

The Contractor may be required to perform light cleaning prior to or during televising operations. All costs to the Contractor resulting from the provision shall be incidental to the price bid. Light cleaning shall be defined as a sewer or manhole with an accumulation of debris/dirt less than or equal to 20 percent of the pipe diameter.

b) Acceptance of Televised Main Sewers:

The Department retains the right to determine the acceptance or rejection of all work according to the terms of these Special Provisions. In the event of rejection of completed work, corrective action is to be initiated within 48 hours of notice of rejection.

c) Disposal of Material Removed:

All solids or semi-solids accruing due to the televising and/or cleaning operations shall be removed from the site by the Contractor on a daily basis, and disposed of in accordance with Section 202.03 of the Standard Specifications.

Under no circumstances will the Contractor be permitted to deposit or accumulate debris within any sewer or on the work site.

No debris or dump boxes shall remain on the right-of-way during non-working hours, unless prior written approval is given by the Engineer.

d) Protection of Sewers During Operations:

Satisfactory precautions shall be taken to protect the main sewers and sewer manholes from damage that might be inflicted by the improper use of televising and/or cleaning equipment. Whenever hydraulically propelled equipment or any tools which retard the flow of water in the main sewers are used, precautions shall be taken to ensure that the water pressure created does not cause damage or flooding to any public or private property.

The Contractor shall be responsible for all damage to public and private property as a result of all televising and/or cleaning operations. Costs of restoration of any damaged area to at least its condition prior to damage shall be incidental to this Contract.

The Contractor's attention is drawn to the fact that existing flows in the sewers could flood the work under this Contract, especially in the event of heavy rainfall. He shall be prepared at all times to safeguard workers and protect the work under this Contract from damage by flooding. The Contractor shall maintain flow at all times in the existing sewers.

The Contractor shall take all necessary precautions to insure that the water pressure created by diverting or retarding flow in the sewer does not cause any damage or flooding to any property.

e) General Requirements:

Arrangements shall be made by the Contractor for videotaping in conformance with the following:

The video operator must have at least one (1) year of experience in televising sewer mains, manholes and lateral connections.

The entire televised inspection must be carried out in the presence of the Department's representative.

Videotapes shall be high quality color in VHS format and recorded in either SP or LP modes. Recordings made in SLP or EP modes are not acceptable. Any out-of-focus video recordings, or video recordings that exhibit poor visibility due to foggy atmospheric

conditions or poor lighting, or portions thereof, shall be cause for rejection of the video recording and will necessitate re-televising at the Contractor's expense.

The Contractor shall turn over the original VHS videotape to the Engineer immediately after taping with the tab removed so as to prevent accidental erasure.

Televising shall be done one section at a time, each section isolated from the remainder of the sewer line as required. Sufficient water shall be supplied to cause drainage within the isolated section prior to televising.

The Contractor shall not be entitled to any additional working days due to delays in securing the video taping services of a private vendor.

f) Equipment for Televising:

Televising equipment shall include the color television camera, television monitor, cables, power source, lights and other equipment necessary to the televising operation. The camera, television monitor and components of the video system shall be capable of producing a minimum 350-line resolution color video picture.

The camera shall be specifically designed and constructed for sewer inspection. The camera shall have a high-resolution lens, and shall be operative in 100 percent humidity. The camera shall be capable of spanning 360-degrees on the vertical axis and 270-degrees on the horizontal axis, so that all service connections can be properly inspected. Focal distance shall be adjustable through a range of from 1-inch to infinity. The camera shall be mounted on skids suitably sized for each pipe diameter to be investigated.

Lighting for the camera shall minimize reflective glare. Camera and lighting quality shall be sufficient to provide a clear, continuously in-focus picture of the entire inside periphery of the sewer pipe for all conditions encountered during the work.

The remote reading footage counter shall be accurate to 0.20 feet over the length of the particular section being inspected and shall be mounted over the television monitor.

g) Televising Procedures by Contractor:

The camera shall be capable of movement through the sewer line in either direction at a uniform rate, stopping where necessary to ensure proper documentation of the condition of the sewer line. In no case shall the camera be moved at a speed greater than 30 feet per minute. Manual winches, power winches, TV cable, powered rewinds or any other devices that do not obstruct the camera view or interfere with proper documentation of the sewer conditions may be used to move the camera through the sewer line. The Contractor shall select an appropriate method of propelling the camera based on the existing conditions of each assignment. If the selected method of propelling the camera through the sewer is incapable of doing so, the Contractor shall be obligated to try another method where appropriate, as determined by the Engineer.

If during the televising operations, the camera will not pass through an entire sewer section, the Contractor shall reset his equipment in a manner such that the inspection can continue on the opposite side of the obstruction in the opposite direction, i.e. a reverse set-up. The movement shall be in a direction such that the obstruction can be televised.

When conditions exist making it impossible to televise the sewer, the Contractor shall lamp the line, as determined by the Engineer.

It shall be the Contractor's responsibility to locate all live and dead drains and lateral sewers connected to the section being televised.

All sewer and lateral connections, manhole risers, missing bricks, voids and dark areas are to be televised. The camera shall be held in the viewing position long enough to allow proper evaluation of each location.

Whenever non-remote powered and controlled winches are used to pull the television camera through the line, telephones, radios, or other suitable means of communications shall be set up between the manholes of the section being inspected to ensure that adequate communication exists between members of the crew.

Where necessary, a high-pressure water jet spray may be utilized downstream of the camera. The spray shall be equally spread out within the sewer to define the contour shape of the sewer.

Should the camera go underwater, the Contractor shall adjust the camera height and re-televise the affected portion of the sewer.

Distance measurement of the camera in the sewer line is critical. Measurement for location of defects shall be above ground by means of a meter device. Markings on the cable, or similar, which would require interpolation for depth of manhole will not be acceptable.

The accuracy of measurement meters shall be checked daily by use of a walking meter, roll-a-tape, or other suitable device. Footage measurements shall begin at the centerline of the upstream manhole, unless permission is given by the Engineer to do otherwise. Footage shall be shown on the video data view at all times.

h) Depth of Debris/Dirt and Water:

The Contractor shall measure and record the depth of debris/dirt and water in each manhole.

i) Documentation of Televising by Contractor:

Audio and written documentation shall accompany all video tapes submitted to the Engineer.

The voice recording on the video tapes shall make brief but informative comments on data of significance, including, but not limited to, the locations of unusual conditions, connections, collapsed sections, the presence of scale, root intrusion, corrosion and other discernible features.

Manholes are to be cross-referenced to a house address or property line.

If the camera is stopped for more than one (1) minute the Contractor is to address the reason for the delay on the videotape.

The videotape (s) shall include the following:

1. Data View:
 - a. Report number.
 - b. Date and time of inspection.
 - c. Upstream and downstream manholes or station numbers.
 - d. Current distance along reach (tape counter footage).
 - e. Weather conditions.
 - f. Depth of debris/dirt and water in manholes.
 - g. Contractor's name.
 - h. Printed labels on tape container and tape cartridge with location information, date, format, and other descriptive information.

2. Data View:
 - a. Same requirements as above in 1. Data View.
 - b. Location of unusual conditions.
 - c. Location and clock position of sewer and lateral connections.
 - d. Location of structural defects.
 - e. Location of above ground catch basins.
 - f. Location of damaged or missing frames and lids.
 - g. Location of areas requiring repair such as, but not limited to, collapsed sewers, manholes and catch basins. Voids in the pavement in close proximity to the main sewer and/or catch basin.
 - h. All locations are to be cross-referenced to a house address or property line.

All costs to the Contractor resulting from the above provisions shall be incidental to the prices bid for the various sewers.

k) Cleaning of Sewers:

The equipment selected for cleaning shall be capable of removing all dirt, grease, rock and any other deleterious material from the main sewers and manholes.

When a sewer designated for televising is found to be more than one-half full with debris, bucket machines, rodding machines and/or vacuum equipment shall be used to remove the major portion of material before hydraulic equipment is employed.

Cleaning work may be executed by hand at the discretion of the Engineer.

l) Records – Daily Work Report:

During the televising operations, a daily work report shall be kept on a form to be supplied to the Department. Such form shall include the following:

1. Date and weather.
2. Identification of the main sewer section.
3. Location of each manhole, catch basin and lateral connection.
4. Condition of the main sewer.
5. Frames and lids that are damaged or missing.

6. Location of areas requiring repair such as, but not limited to, collapsed sewers, manholes and catch basins and voids in the pavement in close proximity to the main sewer and/or catch basins.

m) Surface Restoration:

Surface restoration of any areas damaged during the execution of any work under this Contract shall be made to return such areas to a condition equal to or better than the original condition at the sole expense of the Contractor. Any expense for surface restoration shall be incidental to the Contract.

Method of Measurement: Video taping of sewers will be measured for payment in feet.

Basis of Payment: This work will be paid for at the contract unit price per foot for VIDEO TAPING OF SEWERS, which price shall include all equipment, materials and labor to complete the work as specified herein.

JUNCTION CHAMBER

Description:

This work consists of constructing a junction chamber connecting the proposed storm sewer to the existing main drain at the locations shown on the plans, or as directed by the Engineer. This work shall be performed in accordance with the applicable portions of Sections 502, 503, 550, 602 and 1043 of the Standard Specifications, the details in the plans and as herein specified.

General Requirements:

The Contractor is responsible for maintaining flows in all existing sewers. Prior to the start of construction at any particular site, the Contractor shall submit his construction procedures for maintaining these flows to the Engineer for approval.

Construction Requirements:

Where junction chambers connect with the main drain sewer, the Contractor shall clean the main drain sewer pipe as necessary to make a secure connection. Prior to acceptance, the junction chamber shall be cleaned of all dirt and debris to the satisfaction of the Engineer.

Existing connections to the main drain sewer which are to be abandoned as part of the Contract shall be plugged from inside the pipe whenever possible. Where size restrictions prevent plugging from the inside, the Contractor shall plug the pipe at the nearest upstream manhole. Existing connections to be plugged are indicated on the plans, and as directed by the Engineer.

Junction chambers shall be backfilled in accordance with Article 502.10 of the Standard Specifications. Backfill material shall be POROUS GRANULAR EMBANKMENT and shall be compacted to not less than 95% of the standard laboratory density as determined in accordance with AASHTO T-99, (Method C).

POROUS GRANULAR EMBANKMENT shall be paid for separately in accordance with the details on the plans.

Work Site Security:

The Contractor is responsible for securing the work site during construction of the junction chamber. Temporary fencing shall be installed around the perimeter of the excavation to limit access to the open shaft. The Contractor shall take special precautions near residential neighborhoods to prevent the public from gaining access to the work site during non-work hours. Temporary fencing shall be paid for separately as TEMPORARY FENCE, in accordance with the Contract documents.

Site Restoration:

The Contractor shall perform site restoration in accordance with the details on the "Erosion Control and Landscaping" plans

Submittals:

Braced Excavation Support System

It is the Contractor's responsibility to design, construct and remove a braced excavation support system for construction of the junction chamber. The Contractor shall submit drawings, designs and calculations for the braced excavation to the Engineer for approval. The designs, drawings, and calculations shall be signed and sealed by a licensed Structural Engineer in the State of Illinois. The Engineer's approval does not relieve the Contractor from his sole responsibility for the structural integrity of the braced excavation. The Contractor must also provide temporary support for any adjacent structure, pavement or utility impacted by construction of the junction chamber. All support details shall also be signed and sealed by a licensed Structural Engineer in the State of Illinois. It is the Contractor's responsibility to verify all existing conditions, including utilities, and access to the site prior to construction or ordering of materials. The braced excavation support system shall be paid for separately as BRACED EXCAVATION, as specified in the Contract documents.

Pre-Cast Manhole Units and Lids

Prior to pre-casting any structural elements for construction of the junction chamber, the Contractor shall submit shop drawings and details of the elements for approval by the Engineer. The drawings and details shall be signed and sealed by a licensed Structural Engineer in the State of Illinois.

Method of Measurement:

This work will be measured for payment per each junction chamber, completed in its entirety.

Basis of Payment:

This work will be paid for at the contract unit price per each for JUNCTION CHAMBER, which price shall be payment in full for all labor, tools, equipment and materials necessary to complete the work as specified. This price shall include, but is not limited to, all necessary submittals; removal and disposal of any abandoned structures; removal and disposal of portions of the main drain sewer; all de-watering; concrete working mat; bedding materials; cast-in-place concrete; reinforcement bars; steps; pre-cast elements; manhole barrels, cones and flat slab tops; frames, lids and adjusting rings; all cleaning, including existing and proposed sewers; and all plugging of abandoned connections.

MANHOLES, DROP TYPE

Description:

This work consists of furnishing and constructing a drop manhole, of the specified diameter, at the locations shown on the plans, or as directed by the Engineer. This worked shall be

performed in accordance with the applicable portions of Sections 502, 503, 550, 602 and 1043 of the Standard Specifications, the details in the plans and as herein specified.

Construction Requirements:

The structures shall be of pre-cast construction, in accordance with the details shown on the plans. The contract unit price of the structure shall include any pre-cast tee sections required.

Drop manholes shall be backfilled in accordance with Article 502.10 of the Standard Specifications.

For drop manholes #146 and #147 the backfill material shall be POROUS GRANULAR EMBANKMENT and shall be compacted to not less than 95% of the standard laboratory density as determined in accordance with AASHTO T-99, (Method C). The POROUS GRANULAR EMBANKMENT for structures #146 and #147 shall be paid for separately in accordance with the details on the plans.

Backfilling at all other drop manhole locations shall not be paid for separately, but shall be included in the contract unit price of the structure.

Braced Excavation Support System:

It is the Contractor's responsibility to design, construct and remove a braced excavation support system for construction of the drop manhole at the following locations:

| | |
|-----------------|-------------------|
| Structure # 146 | Station 314+32.67 |
| Structure # 147 | Station 317+80.73 |

The braced excavation support system at the above locations will be paid for separately as BRACED EXCAVATION. The braced excavation support system for all other drop manholes shall not be paid for separately, but shall be included in the unit price of the various storm sewer jacked-in-place items.

Submittals:

Braced Excavation Support System

It is the Contractor's responsibility to design, construct and remove a braced excavation support system at the drop manhole locations specified. The Contractor shall submit drawings, designs and calculations for the braced excavation to the Engineer for approval. The designs, drawings, and calculations shall be signed and sealed by a licensed Structural Engineer in the State of Illinois. The Engineer's approval does not relieve the Contractor from his sole responsibility for the structural integrity of the braced excavation. The Contractor must also provide temporary support for any adjacent structure, pavement or utility impacted by construction of the drop manhole. All support details shall also be signed and sealed by a licensed Structural Engineer in the State of Illinois. It is the Contractor's responsibility to verify all existing conditions, including utilities, and access to the site prior to construction or ordering of materials.

Pre-Cast Manhole Units and Lids

Prior to pre-casting any structural elements for construction of the drop manhole, the Contractor shall submit shop drawings and details of the elements for approval by the Engineer. The drawings and details shall be signed and sealed by a licensed Structural Engineer in the State of Illinois.

Method of Measurement:

This work will be measured per each manhole complete.

Basis of Payment:

This work will be paid for at the contract unit price per each for MANHOLES, DROP TYPE, TYPE 1 FRAME, CLOSED LID, of the diameter specified, which price shall be payment in full for all materials, labor, tools, equipment and incidentals necessary to complete the work as specified.

BRACED EXCAVATION

Description. This work shall consist of furnishing all labor, equipment, and materials necessary to install, maintain and remove a braced excavation support system to protect the adjacent roadway during the construction of the junction chambers and drop manholes as specified herein.

General Requirements. The design of the braced excavation is the responsibility of the Contractor. The Contractor shall submit drawings and design for the braced excavation to the Engineer for approval. The braced excavation design and drawings shall be signed and sealed by an Illinois licensed Structural Engineer, submitted and approved prior to the start of any work. The Engineer's approval shall not relieve the Contractor from the sole responsibility of the structural integrity of the braced excavation system.

The braced excavation shall be capable of restraining earth pressures resulting from the surcharges imposed by construction equipment, trucks and vehicular traffic on the adjacent roadway. The braced excavation shall include all sheeting, walers, struts, and bracing, hardware and all appurtenant and collateral materials and work required to protect the adjacent roadway where the braced excavation is utilized.

It shall be the Contractor's responsibility to verify all existing conditions, including utilities, and access to the site prior to construction or ordering of materials. Any disturbance or damage to existing structures, utilities or other property, caused by the Contractors operation, shall be repaired by the Contractor in a manner satisfactory to the Engineer at no additional cost to the Department.

All materials, equipment and construction methods shall be in accordance with the requirements of Sections 502, 505 and 512 of the Standard Specifications except as herein modified.

At the option of the Contractor, the materials may be new or used. If used, the materials shall be in good condition and acceptable to the Engineer. The Contractor shall provide all temporary or permanent materials required for the proper execution of the work on this Item.

For junction chambers, the maximum width of excavation is the width of the junction chamber plus 4 feet, and the maximum length is the length of the junction chamber plus 4 feet. The maximum width of excavation for the drop manholes is the outside diameter of the manhole shaft plus 4 feet. Excavation outside the maximum dimensions specified will not be measured for payment.

Method of Measurement. This work will be measured for payment as a computed volume in cubic yards as described in Section 502 of the Standard Specifications.

Basis of Payment. This work will be paid for at the Contract unit price per cubic yard for BRACED EXCAVATION. The price shall be payment in full for all work, equipment, and materials necessary for excavating, installing, maintaining, and removing the braced excavation support system as specified herein.

STEEL CASING 42", 48"

Description:

This work consists of furnishing and installing, by jacking, a steel casing pipe, of the size indicated, at the location shown on the plans or as directed by the Engineer. The casing pipe is required for the construction of storm sewer installed by jacking. The work shall be performed in accordance with the applicable portions of Section 552 of the Standard Specifications, the applicable portions of the Standard Specifications For Water & Sewer Main Construction In Illinois, the details in the plans and as herein specified.

Materials:

The steel casing pipe shall meet or exceed the requirements of ASTM A-139, Grade B, minimum yield strength of 35,000 psi. The minimum wall thickness shall be as detailed on the plans.

The exterior of the casing pipe shall have a coal-tar enamel coating in accordance with AWWA C-203, or a coal-tar epoxy coating in accordance with AWWA C-210.

The Contractor must use steel casing previously purchased and stored by the Department. Approximately 100 feet of 42" casing pipe and 320 feet of 48" casing pipe is available. Any additional pipe must be furnished by the Contractor. The stored pipe shall be obtained from the Department's Alsip maintenance yard located at 11801 South Ridgeland Avenue, Worth, IL, 708.448.0050.

General:

Pipe joints shall be welded in accordance with AWWA C-206. No hydrostatic test is required but field welds shall be watertight. After welding, the welded area must be covered and treated with hot tar 1/8-inch thick. The tar must be allowed to cool prior to jacking the casing pipe in place.

Method of Measurement:

Steel casing shall be measured along the invert in feet in place.

Basis of Payment:

This work will be paid for at the contract unit price per foot for STEEL CASINGS of the size indicated, which price shall be payment in full for all materials, labor, tools, equipment, and incidentals necessary to complete the work as specified.

MAINTENANCE OF LIGHTING SYSTEMS

Effective Date: March 1, 2003

Replace Article 801.12 of the Standard Specifications with the following:

Effective the date the Contractor's activities (electrical or otherwise) at the job site begin, the Contractor shall be responsible for the proper operation and maintenance of all existing and

proposed lighting systems which are part of, or which may be affected by the work until final acceptance or as otherwise determined by the Engineer.

Before performing any excavation, removal, or installation work (electrical or otherwise) at the site, the Contractor shall initiate a request for a maintenance transfer and preconstruction inspection, as specified elsewhere herein, to be held in the presence of the Engineer and a representative of the party or parties responsible for maintenance of any lighting systems which may be affected by the work. The request for the maintenance preconstruction inspection shall be made no less than seven (7) calendar days prior to the desired inspection date.

Existing lighting systems, when depicted on the plans, are intended only to indicate the general equipment installation of the systems involved and shall not be construed as an exact representation of the field conditions. It remains the Contractor's responsibility to visit the site to confirm and ascertain the exact condition of the electrical equipment and systems to be maintained.

Maintenance of Existing Lighting Systems

Existing lighting systems. Existing lighting systems shall be defined as any lighting system or part of a lighting system in service prior to this contract. The contract drawings indicate the general extent of any existing lighting, but whether indicated or not, it remains the Contractor's responsibility to ascertain the extent of effort required for compliance with these specifications and failure to do so will not be justification for extra payment or reduced responsibilities.

Extent of Maintenance.

Partial Maintenance. Unless otherwise indicated, if the number of circuits affected by the contract is equal to or less than 40% of the total number of circuits in a given controller and the controller is not part of the contract work, the Contractor needs only to maintain the affected circuits. The affected circuits shall be isolated by means of in-line waterproof fuse holders as specified elsewhere and as approved by the Engineer.

Full Maintenance. If the number of circuits affected by the contract is greater than 40% of the total number of circuits in a given controller, or if the controller is modified in any way under the contract work, the Contractor shall maintain the entire controller and all associated circuits.

Maintenance of Proposed Lighting Systems

Proposed Lighting Systems. Proposed lighting systems shall be defined as any lighting system or part of a lighting system which is to be constructed under this contract. The Contractor shall be fully responsible for maintenance of all items installed under this contract. Maintenance shall include, but not be limited to, any equipment failures or malfunctions as well as equipment damage either by the motoring public, Contractor operations, or other means. The potential cost of replacing or repairing any malfunctioning or damaged equipment shall be included in the bid price of this item and will not be paid for separately.

Lighting System Maintenance Operations. The Contractor's responsibility shall include all applicable responsibilities of the Electrical Maintenance Contract, State of Illinois, Department of Transportation, Division of Highways, District One. These responsibilities shall include the maintenance of lighting units (including sign lighting), cable runs and lighting controls. In the case of a pole knockdown or sign light damage caused by normal vehicular traffic, the Contractor shall promptly clear the lighting unit and circuit discontinuity and restore the system to service.

Responsibilities shall also include weekly night-time patrol of the lighting system, with patrol reports filed immediately with the Engineer and with deficiencies corrected within 24 hours of the patrol. Patrol reports shall be presented on standard forms as designated by the Engineer. Uncorrected deficiencies may be designated by the Engineer as necessitating emergency repairs as described elsewhere herein.

The following chart lists the maximum response, service restoration, and permanent repair time the Contractor will be allowed to perform corrective action on specific lighting system equipment.

| Incident Or Problem | Service Response Time | Service Restoration Time | Permanent Repair Time |
|---|------------------------------|---------------------------------|------------------------------|
| Control cabinet out | 1 hour | 4 hours | 7 Calendar days |
| Hanging mast arm | 1 hour to clear | na | 7 Calendar days |
| Radio problem | 1 hour | 4 hours | 7 Calendar days |
| Motorist caused damage or leaning light pole 10 degrees or more | 1 hour to clear | 4 hours | 7 Calendar days |
| Circuit out – Needs to reset breaker | 1 hour | 4 hours | na |
| Circuit out – Cable trouble | 1 hour | 24 hours | 21 Calendar days |
| Outage of 3 or more successive lights | 1 hour | 4 hours | na |
| Outage of 75% of lights on one tower | 1 hour | 4 hours | na |
| Outage of light nearest RR crossing approach, Islands and gores | 1 hour | 4 hours | na |
| Outage (single or multiple) found on night outage survey or reported to EMC | na | na | 7 Calendar days |
| Navigation light outage | na | na | 24 hours |

- Service Response Time - amount of time from the initial notification to the Contractor until a patrolman physically arrives at the location.
- Service Restoration Time – amount of time from the initial notification to the Contractor until the time the system is fully operational again (In cases of motorist caused damage the undamaged portions of the system are operational.)
- Permanent Repair Time – amount of time from initial notification to the Contractor until the time permanent repairs are made if the Contractor was required to make temporary repairs to meet the service restoration requirement.

Failure to provide this service will result in liquidated damages of \$500 per day per occurrence. In addition, the Department reserves the right to assign any work not completed within this timeframe to the Electrical Maintenance Contractor. All costs associated to repair this uncompleted work shall be the responsibility of the Contractor. Failure to pay these costs to the Electrical Maintenance Contractor within one month after the incident will result in additional liquidated damages of \$500 per month per occurrence. Unpaid bills will be deducted from the cost of the Contract. Repeated failures and/or a gross failure of maintenance shall result in the State's Electrical Maintenance Contractor being directed to correct all deficiencies and the resulting costs deducted from any monies owed the contractor.

Damage caused by the Contractor's operations shall be repaired at no additional cost to the Contract.

Operation of Lighting. The lighting shall be operational every night, dusk to dawn. Duplicate lighting systems (such as temporary lighting and proposed new lighting) shall not be operated simultaneously. Lighting systems shall not be kept in operation during long daytime periods. The contractor shall demonstrate to the satisfaction of the Engineer that the lighting system is fully operational prior to submitting a pay request. Failure to do so will be grounds for denying the pay request.

Basis of Payment. Maintenance of lighting systems shall be paid for at the contract unit price per calendar month or fraction thereof for MAINTENANCE OF LIGHTING SYSTEM, which shall be payment in full for the work described herein.

CONCRETE FOUNDATION 24" (600MM) DIAMETER

Description

The foundation shall be 600 mm (24") in diameter, with a 375 mm (15") bolt circle and 43.75 mm (1.25") diameter anchor rods.

General

Every foundation shall be installed at the location designated and in the manner herein specified or in special cases as specifically directed. From time to time, it may be required to locate foundations at places other than shown on drawings furnished this Contractor. The Engineer reserves the right to make such relocations as he may deem necessary or required, and when directed to do so, this Contractor shall locate foundations as indicated by the Engineer.

Concrete Foundations in Solid Fill

Foundations constructed in solid fill shall conform to drawing number 818. Top surface of these foundations shall be at an elevation of 50 mm (2") above grade or as required by the Engineer. Care shall be taken to install a level foundation and to ensure adequate anchor rod projections for double-nut installation. The foundations shall be centered back from the face of the curb in accordance with dimensions shown on construction plans. Foundation raceways shall consist of large radius conduit elbow(s) in quantity size and type specified on the construction plans. The elbow ends above ground shall be capped with standard conduit bushings. The Contractor shall furnish anchor rods, hardware, conduit elbow(s) and all other material shown on applicable foundation construction drawings. Depth of foundation shall be as noted on construction plans.

Foundation Anchor Rods

Anchor Rods shall be fabricated from steel meeting the requirements of the latest revisions of ASTM A400, Class R-2 and have a minimum yield point of 3.8×10^7 kg/m² (55,000 psi). Anchor rods shall be set in accordance with applicable construction plans so that when poles are mounted on the foundations, the street lighting mast arm shall be properly oriented as indicated on the construction plans. The anchor rods shall be set by means of a metal template which shall be submitted for approval before any foundation work is begun. The template shall hold the rods vertical, and in proper position, and shall serve as a form for the top 150 mm (6") of the periphery of the foundation. Anchor rods shall conform in all respects to City of Chicago drawing number 811.

Basis of Payment

Payment will be made for foundations installed in place, including elbows, in accordance with construction drawings, construction plans and these Detail Specifications. All necessary excavation and restoration of pavement, sidewalk and fill to their original conditions shall be included in the unit price. This work will be paid for at the contract unit price per foot of depth for CONCRETE FOUNDATION, 24" (600 mm) DIAMETER.

UNDERGROUND RACEWAYS

Effective Date: January 1, 2002

Revise Article 810.03 of the Standard Specifications to read:

"Installation. All underground conduit shall have a minimum depth of 700 mm (30-inches) below the finished grade."

Add the following to Article 810.03 of the Standard Specifications:

"All metal conduit installed underground shall be Rigid Metal Conduit unless otherwise indicated on the plans."

TRENCH AND BACKFILL FOR ELECTRICAL WORK

Effective Date: January 1, 2002

Revise the first sentence of Article 815.03(a) of the Standard Specifications to read:

"Trench. Trenches shall have a minimum depth of 760 mm (30 in.) or as otherwise indicated on the plans, and shall not exceed 300 mm (12 in.) in width without prior approval of the Engineer."

Revise Article 1066.05 of the Standard Specifications to read:

"Underground Cable Marking Tape. The tape shall be 150 mm (6 in.) wide; consisting of 0.2 mm (8 mil) polyethylene according to ASTM D882, and ASTM D2103.

The tape shall be red with black lettering or red with silver lettering reading "CAUTION – ELECTRICAL LINE BURIED BELOW".

The tape shall have reinforced metallic detection capabilities consisting of a woven reinforced polyethylene tape with a metallic core or backing.”

ELECTRICAL CABLE IN CONDUIT TRIPLEX NO. 6, 2-1/C AND NO. 8 1-1/C

Work under this item shall be performed in accordance with Section 800, 824 and 1085 of the Standard Specifications, Bureau of Electricity Standards and the City of Chicago Electrical Code, except as herein modified.

Description: This item shall consist of furnishing, installing and testing 3 - 1/C 600 volt triplexed cables of the size noted above at the locations as shown on the Plans or as directed by the Engineer. The cables will either be directly buried or installed in conduit.

General Requirements: All cable shall be installed with care to prevent damage to the installation of cable. The Contractor shall check the cable for defects as it is being installed. Any defects found shall be reported to the Engineer, and if they may be remedied, they shall be repaired to the satisfaction to the Engineer or the cable replaced as directed.

The cable shall be pulled into the conduit with a minimum of dragging on the ground or pavement. This shall be accomplished by means of reels mounted on jacks or other suitable devices conveniently located for unreeling cable directly into duct in such a manner as not to damage the cable.

Where lubricants are necessary to facilitate installation of the cable, only a vegetable lubricant may be used for plastic coated cable.

Bends in the cable shall conform to the recommended minimum radius as outlined in the National Electric Code.

Cable passing through manholes shall be trained around the sides of the manhole into a permanent position on racks mounted on each proposed manhole wall. Allowance shall be made for expansion and contraction. Six feet of slack cable shall be provided in handholes.

Where cable runs continue from manhole to manhole without tapping within a light standard, they shall be continuous without splices unless otherwise authorized by the Engineer.

The cable installation shall be color coded so that each lead of all circuits may be easily identified and lighting units connected to the proper leg as indicated on the Plans and wiring diagram. The smallest conductor or equipment grounding conductor shall always be color coded green.

All wire or cable in the distribution and control cabinets shall be properly trained and have sufficient slack provided for any rearrangement of equipment for future additions.

After a cable installation is completed, but before connections to apparatus are made, the insulation resistance of the cable shall be measured by means of an approved 600 Volt MEGA OHM tester. The insulation resistance of any cable so measured shall be not less than five mega ohms.

Approximately 25 feet of cable shall be coiled for connection to an electrical service. Connection to electrical service will be made by the Commonwealth Edison Company.

Any cable terminations or splices, where approved, shall be made in a workmanlike manner. All connectors and insulating tapes and materials shall be approved by the Engineer. Splices and terminations shall be considered incidental to the installation of cable and no additional payment shall be made for same.

Materials: Cables shall be of the type as specified in City of Chicago Material Specification No. 1440 dated January, 1991.

Measurement: The length of cable furnished and installed in the work under this item will be measured as the length of conduit or trench plus three (3) feet of cable entering or leaving lighting standards and cabinets but shall not include slack cable, except as called for, or waste ends of cable which may have to be cut off for making splices or connections to any material or apparatus.

Basis of Payment: This work will be paid for at the Contract Unit Price per linear foot for ELECTRIC CABLE IN CONDUIT TRIPLEX NO. 6, 2-1/C AND NO. 8, 1-1/C which price shall be payment in full for furnishing, installing, connecting, splicing and testing the cable, furnishing and installing insulated bushings and shall include all labor, materials, equipment, tools and incidentals necessary to complete the work as specified on the Plans.

CITY OF CHICAGO WATER MAIN SPECIFICATIONS

SECTION 01010

1.1 SUMMARY OF WORK

1.2 PART 1 GENERAL

1.3 SECTION INCLUDES

Description of Work

Constraints

Field Office

Vehicles for Use by Commissioner

Work Sequence

1.4 DESCRIPTION OF WORK

- A. General: Work to be done under this Contract consists of the relocation of water mains as stated here and shown and specified in the Contract Documents entitled:

F.A.I. Route 94 (Dan Ryan Expressway)
Section (1516.1-I-1)
Cook County
Contract No. 62872

- B. Scope of Work: The Work includes water main piping, valves and basins, fire hydrants, fittings and accessories, thrust restraints; connections to existing water mains; testing and disinfection of water mains; capping and or abandonment of existing water mains, reconnection/installation of necessary water services; all required excavation, trenching, grading, backfilling and compaction of excavations erection and maintenance of temporary traffic signs and barricades; and removal and disposal of all construction debris from project site.
- C. Furnishing all Labor, Materials, Equipment, and Transportation Services: Contractor must furnish all labor, materials, proper equipment and machinery, and transportation services necessary to perform and complete, in a workmanlike manner and within the specified time, all Work required under this contract.
- D. Project site: Contractor must maintain the project site and Work area in a clean, orderly and safe manner.
- E. Coordination: Contractor must coordinate his Work with other contractors, agencies, and utilities as required or directed by the Commissioner.
- F. Protection of work: Contractor must provide protection, repair and restoration of all finished Work or property damaged during construction.

- G. Implied Work: It is the intent of these Specifications to provide the City with improvements to, and ability to maintain a complete and operable water distribution system. Any part or item of Work, which is implied and normally required to complete the water main installation satisfactorily and make it completely operable, is deemed to be included in the Work and Contract price. All miscellaneous appurtenances and other items of Work incidental to meeting the intent of these Contract Documents is also deemed to be included in the Work and Contract price, even if such appurtenances may not be specifically shown or specified.

1.5 CONSTRAINTS

- A. The Contract documents are intended to allow the Contractor flexibility in the construction of the Work; however, the Contract Documents do contain constraints on project activities. In addition to those stated elsewhere in these Contract Documents, the following constraints apply:
1. Prepare and submit a comprehensive schedule of the proposed sequence of construction for various parts of the Work included under this contract for review by the Commissioner.
 2. Work under this Contract must also be accomplished while maintaining water service and fire protection to surrounding residences.
 3. The Contractor must maintain emergency vehicular access to the surrounding residences and facilities at all times.
 4. The Commissioner will be the sole judge of when the Contractor's operations are causing interference with water distribution operations, and the Commissioner's orders and instructions must be carried out without delay.
 5. Conduct operations so as not to inconvenience the general public.
- B. Notification and Limitations of Water Main Shut Downs.
1. When an existing water main or section of the main is to be shut down during the course of construction, individual consumers must be notified at least seventy-two (72) hours prior to the shut down. The Contractor must not operate an existing valve for a shut down or other purpose, without notifying and obtaining Commissioner approval.
 2. Water consumer shut downs must not exceed eight (8) hours. No shut downs will be permitted before 8:00 AM without prior approval of the Commissioner.
 3. If emergency shut downs are required, the Contractor must notify customers within the effected area immediately. Notification must be verbal, or written if the customer cannot be contacted and placed at the property site showing all pertinent information regarding the shut down. The written notice must contain a phone number the consumer may call for information or express any concerns they have about the shut down.
 4. If it is determined a consumer cannot withstand a planned shut down of water service due to providing a critical emergency service, the need to maintain an ongoing manufacturing process, or medical reason, the Commissioner must be notified 48-hours before the shut down is started by the Contractor.

END OF SECTION 01010

SECTION 01091

DEFINITIONS, REFERENCES AND ABBREVIATIONS

PART 1 – GENERAL

1.1 FORM OF SPECIFICATIONS

- A. Wherever used in the Specifications, the following terms have the meanings indicated which are applicable to both the singular and plural thereof.
- B. Where "as shown," "as indicated," and "as detailed," or words of similar import are used, it is understood that reference to the Drawings is made unless stated otherwise. Where "as directed," "as permitted," "approved," or words of similar import are used, it is understood that the direction, requirements, permission, approval, or acceptance of the City is intended unless stated otherwise.

1.2 DEFINITIONS

Addenda: Written or graphic instruments issued prior to the opening of bids, which clarify, modify, or interpret the Contract Documents.

Agreement: The written Contract, which is evidence of the agreement between the City and the Contractor covering the Work.

Arterial Streets: Major streets where special construction techniques may be required by CDOT.

City: The City of Chicago.

Commissioner: The Commissioner of the City of Chicago Department of Water Management or the Commissioner's duly authorized representative.

Completion: All tests performed and accepted, water services transferred, connections made, and abandonment's completed.

Comptroller: The City Comptroller of the City of Chicago or the Comptroller's successor or successors upon whom the Comptroller's duties are transferred.

Contract: The entire and integrated written agreement between the City and the Contractor concerning the Work. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.

Contract Documents: The Agreement, Addenda, Contractor's bid, and related documentation when attached as an exhibit to the Agreement, the Notice to Proceed, the Bonds, the General Conditions, the Special Conditions, the Specifications and the Drawings, together with all Written Orders which completely describe the technical requirements of the Project including bid, Contract, and construction procedures.

Contract Notice: A written notice from the Chief Procurement Officer mailed to the Contractor at the address designated in the Contractor's proposal or to such other address as the Contractor may designate in writing as Contractor's official place of business, transmitting to the Contractor an executed copy of the Contract.

Contractor: The person, firm, or corporation with whom the City has executed the Contract, and is referred to throughout the Contract Documents as if singular in number and masculine in gender. The term Contractor means the Contractor or his authorized representative.

Defective: An adjective which when modifying the word Work refers to Work that is unsatisfactory, faulty, or deficient, in that it does not conform to the Contract Documents, or does not meet the requirements of any inspection, reference standard, test, or approval referred to in the Contract Documents, or has been damaged prior to final acceptance.

Department: The City of Chicago Department of Water Management.

Department of Public Works: The City of Chicago Department of Transportation.

Drawings or Plans: The part of the Contract Documents, which shows the characteristics, and scope of the work to be performed and which have been prepared and approved by the Engineer.

Force Account: The method of payment for extra work performed.

Furnish: Furnish means supply and deliver to the Work area, ready for unloading, unpacking, assembly, installation, and similar operations.

Install: Install means the actual unloading, packing, assembly, erection, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.

Municipal Code: The Municipal Code of the City of Chicago.

Neat Lines: The required clear width of a trench, equal to the sum of the outside diameter of the pipe plus 2-feet (600 mm). In sheeted trenches, the required width is measured to the outside of the sheeting.

Notice to Bidders: The advertisement for bids, the official notice inviting bids for the work to be done.

Product Data: Illustrations, standard schedules, performance charts, instructions, brochures, diagrams, and other information furnished by the Contractor to illustrate a material, product, or system for some portion of the Work.

Project: The total construction of which the Work to be provided under the Contract Documents may be the whole, or a part as indicated elsewhere in the Contract Documents.

Provide: Furnish and Install as required.

Railroad: Any railroad tracks, which may be encountered.

Samples: Physical examples which illustrate materials, equipment, or workmanship and establish standards by which the Work will be judged.

Shop Drawings: All drawings, diagrams, illustrations, brochures, schedules, and other data, which are prepared by the Contractor, a Subcontractor, manufacturer, supplier, or distributor, which illustrate how specific portions of the Work are proposed to be fabricated or installed.

Site and/or Work Area: The lands and other places on, under, in, or through which the Work is to be executed or carried out and any other lands or places provided by the City for the purposes of the Contract, together with such other places as may be specifically designated in the Contract Documents as forming part of the Site and/or Work Area.

Specifications: A part of the Contract Documents consisting of written descriptions of a technical nature of materials, equipment, construction systems, standards, and workmanship.

State: The State of Illinois.

Subcontractor: An individual, firm, or corporation having a direct contract with the Contractor or with any other Subcontractor for the performance of a part of the Work at the Site. The term Subcontractor is referred to throughout the Contract Documents as if singular in number and masculine in gender and means a Subcontractor or his authorized representative.

Supplier: Any person, supplier, or organization who supplies materials or equipment for the Work, including that fabricated to a special design, but who does not perform labor at the Site. A supplier is not a Subcontractor who purchases an item or equipment from a manufacturer or supplier.

Unit Price: A cost per unit of work or measurement of material, for a bid item.

Work: All labor necessary to produce the construction required by the Contract Documents, and all materials and equipment incorporated or to be incorporated in such construction. Work is also used to mean the same as Project.

Written Order: A directive, written and signed by the Commissioner, delivered to the Contractor at the address designated in the Contractor's bid or to such other address as the Contractor may designate in writing as Contractor's official place of business.

1.3 CITATION OF OTHER SPECIFICATIONS

- A. Commonly used abbreviations have the meanings as specified in this Section. The plans may contain a list of additional abbreviations applicable thereto. Whenever the Contract Documents refer to the specifications of any society, institute, association, or governing organization, the specifications cited will become a part of this Contract as if written herein in full.

1.4 ABBREVIATIONS

AASHTO: American Association of State Highway & Transportation Officials.

ACI: American Concrete Institute.

AISC: American Institute of Steel Construction.

ANSI: American National Standards Institute.

APWA: American Public Works Association.

ASCE: American Society of Civil Engineers.

ASME: American Society of Mechanical Engineers.

ASTM: American Society for Testing and Materials.

AWS: American Welding Society.

AWWA: American Water Works Association.

CCD: Chicago City Datum.

CDOT: City of Chicago Department of Transportation.

CRSI: Concrete Reinforcing Steel Institute.

FS: Federal Specification Board.

IDOT: Illinois Department of Transportation.

IEPA: Illinois Environmental Protection Agency.

ISO: Insurance Services Office of Illinois.

MSS: Manufacturers Standardization Society of the Valve Fitting Industry.

MWRD: Metropolitan Water Reclamation District of Greater Chicago.

NBFU: National Board of Fire Underwriters.

NBS: National Board of Standards.

NCMA: National Concrete Masonry Association.

NCPWB: National Certified Pipe Welding Bureau.

NEMA: National Electric Manufacturers Association.

NPT: National Pipe Thread.

OSHA: Occupational Safety and Health Act.

PCA: Portland Cement Association.

SSRBC: Illinois Department of Transportation, Standard Specifications for Road and Bridge Construction.

UL: Underwriters' Laboratory.

END OF SECTION 01091

SECTION 01270

MEASUREMENTS AND PAYMENTS

PART 1 – BID ITEMS

1.1 GENERAL

- A. This section identifies bid items by number and lists applicable Specification sections and method of payment and measurement.
- B. Provide all Work as specified in Section 01010 – Summary of Work necessary to construct each bid item as shown on the Drawings, specified here, or as directed by the Commissioner.

1.2 DESCRIPTION OF BID ITEMS

A. **Bid Item No.1: Water Main.**

1. Specification References:

Work of the following Specification Sections are referenced under this bid Item.

- a. Section 02240: Dewatering Excavations.
- b. Section 02315: Excavation, Trenching and Backfilling.
- c. Section 02510: Ductile Iron Pipe and Fittings.
- d. Section 02516: Thrust Restraint.
- e. Section 02518: Disinfection and Testing of Water Mains.

2. Measurement for Payment:

Water Main will be measured as lineal foot installed for the diameter specified, and final restoration of trenches. The work includes:

- a. Locating and operating all valves to be used during construction and testing all shutdowns two (2) weeks prior to the start of construction.
- b. Trench excavation and disposal of spoils.
- c. Excavation dewatering.
- d. Furnishing and installing water main piping, fittings, gaskets, polyethylene encasement, thrust restraint and appurtenances.
- e. Furnishing, placing and compacting trench backfill and bedding.
- f. Testing and disinfection of installed water mains.
- g. Installing thrust restraint for 8-inch water main. Thrust restraint for 24-inch water mains will be paid separately under bid item number 4.

3. Method of Payment:

All payment for Work under Item No.1, Water Main, of the diameter specified will be paid for under bid items designated as 1a and 1b as noted in the Schedule of Prices. All Work will be paid per lineal foot installed for:

Item 1a, WATER MAIN, 8"
Item 1b, WATER MAIN, 24"

B. Bid Item Nos. 2: Valve.

1. Specification References:

Work of the following Specification Sections are referenced under this Bid Item.

- a. Section 02082: Valves.
- b. Section 02240: Dewatering Excavations.
- c. Section 02516: Thrust Restraint.
- d. Section 02315: Excavation, Trenching and Backfilling.
- e. Section 02512: Water Services 2-Inches (50 mm) and Smaller.
- f. Section 02510: Ductile Iron Pipe and Fittings.
- g. Section 02518: Disinfection and Testing of Water Mains.
- h. Section 02535: Valve Basins, Manholes and Catch Basins.

2. Method of Measurement:

VALVE will be measured per EACH installed valve, valve basin, test taps for 8" valve, frame and lid of the specified size and associated work as shown on the Drawings and as specified. Test taps for 24" valve will be paid under bid item number 9.

3. Method of Payment:

All payment for Work under ITEM NO. 2, VALVE, will be paid for under bid items designated as 2a thru 2c, as noted in the Schedule of Prices. All Work will be paid per EACH for:

ITEM 2a, GATE VALVE, 8"
ITEM 2b, GATE VALVE 12"
ITEM 2c BUTTERFLY VALVE, 24"

C. Bid Item No. 3: Connection to Existing Fitting or Pipe.

1. Specification References:

Work of the following Specification Sections are referenced under this bid Item.

- a. Section 02082: Valves.
- b. Section 02240: Dewatering Excavations.
- c. Section 02315: Excavation, Trenching and Backfilling.
- d. Section 02510: Ductile Iron Pipe and Fittings.
- e. Section 02516: Thrust Restraint.
- f. Section 02518: Disinfection and Testing of Water Mains.

2. Measurement for Payment:

The size of each pipe connection will be defined as the size of the new water main that is being connected to the existing pipe or fitting. Connection to existing

fitting or pipe will be measured per EACH connection installed for the diameter specified, for work which includes:

- a. Trench excavation and disposal of spoils.
- b. Excavation dewatering.
- c. Furnishing and installing water main piping, fittings, gaskets, polyethylene encasement, thrust restraint for pipe and fittings 16" and under and appurtenances.
- d. Water main pipe length included:
 - i. 10-feet or less used in the making of the connection on the run of an existing water main.
 - ii. Where the water main pipe used in the making of the connection on the run of the existing water main exceeds 10 feet, the connections to the existing pipe will be included in bid Item No. 3 and the additional pipe will be measured under bid Item No. 1.
- e. Furnishing, placing and compacting trench backfill and bedding up to the bottom of the proposed aggregate sub-base or the existing ground line.
- f. Providing connections to the existing water main.
- g. Cutting, capping and bracing the existing pipe and removal of existing pipe and fittings as necessary.
- h. Installing thrust restraint for 8-inch and 12-inch water mains. Thrust restraint for 24-inch water mains will be paid separately under bid item number 4.

3. Method of Payment:

All payment for Work under Item No. 3, connection to existing fitting or pipe, will be paid for under bid items designated as 3a and 3c as noted in the Schedule of Prices. All Work will be paid per EACH for:

Item 3a, CONNECTION TO EXISTING FITTING OR PIPE, 8"
Item 3b, CONNECTION TO EXISTING FITTING OR PIPE, 12"
Item 3c, CONNECTION TO EXISTING FITTING OR PIPE, 24"

D Bid Item No. 4: Thrust Restraint.

1. Specification References:

Work of the following Specification Sections are referenced on this Bid Item.

- a. Section 02240: Dewatering Excavations.
- b. Section 02315: Excavations, Trenching and Backfilling
- c. Section 02510: Ductile Iron Pipe and Fittings.
- d. Section 02516: Thrust Restraint
- e. Section 02518: Disinfection and Testing of Water Mains

2. Measurement and Payment:

Thrust restraint structure installed will be measured per EACH. The work includes:

- a. Drilling of hole to install caisson.
- b. Excavation required to install thrust restraint structure as per plan.
- c. Furnishing and placing concrete, structured steel, reinforcing steel and casing for caisson and thrust restraint structure, as shown in the plans.
- d. Dewatering of excavations.
- e. Furnishing, placing and compacting backfill up to the bottom of the proposed aggregate sub-base or the existing ground line.
- f. Removal and disposal of existing abandoned structures.

3. Method of Payment

All payment for work under Item No. 4 will be paid for bid items designated as 4a and 4b as noted in Schedule of Prices. All work will be paid per EACH.

Item 4a, THRUST RESTRAINT, TYPE – A
Item 4b, THRUST RESTRAINT, TYPE – B

E. Bid Item No. 5: Fire Hydrants.

1. Specification References:

Work of the following Specification Sections are referenced under this Bid. Item.

- a. Section 02080: Fire Hydrants.
- b. Section 02240: Dewatering Excavations.
- c. Section 02315: Excavation, Trenching and Backfilling.
- d. Section 02510: Ductile Iron Pipe and Fittings.
- e. Section 02516: Thrust Restraint.
- f. Section 02518: Disinfection and Testing of Water Mains.

2. Measurement for Payment:

Fire hydrants will be measured per EACH installed hydrant, for Work which includes:

- a. Removal and disposal of existing surface features.
- b. Trench excavation and disposal of spoils.
- c. Dewatering excavations.
- d. Furnishing and installing water main piping, fittings, gaskets, polyethylene encasement, thrust restraint and appurtenances.
- e. Furnishing and installing hydrant and hydrant lead, up to 20-feet in length.
- f. Furnishing, placing and compacting trench backfill and bedding.
- g. Furnishing and installing perforated drain pipe and drain field.
- h. Providing the following surface restoration:
 - i. 5-feet of concrete curb and gutter.
 - ii. 50-square feet of landscape restoration or sidewalk restoration.
- i. Furnishing and installing bumper guards as (or when) shown on the Drawings.

3. Method of Payment:

All Work will be paid per EACH for:

Item 5, FIRE HYDRANTS

F. Bid Item No. 6: Fire Hydrants to be Removed.

1. Specification References:

Work of the following Specification Sections are referenced under this Bid Item.

- a. Section 02240: Dewatering Excavations.
- b. Section 02315: Excavation, Trenching and Backfilling.
- c. Section 02510: Ductile Iron Pipe and Fittings.
- d. Section 02516: Thrust Restraint.

2. Measurement for Payment:

Fire hydrants to be removed will be measured per EACH hydrant removed, for Work which includes:

- a. Removal and disposal of existing surface features.
- b. Trench excavation and disposal of spoils.
- c. Excavation dewatering.
- d. Furnishing and installing water main piping, water service piping, fittings, gaskets, polyethylene encasement, thrust restraint and appurtenances.
- e. Furnishing, placing and compacting trench backfill and bedding up to the bottom of the proposed aggregate sub-base or the existing ground line.
- f. Salvaging and delivery of the hydrant to the Department.
- g. Cutting, capping and bracing the existing hydrant lead.

3. Method of Payment:

All payment for Work under Bid Item No. 6, FIRE HYDRANTS TO BE REMOVED, will be paid as noted in the Schedule of Prices. All Work will be paid per EACH:

G. Bid Item No. 7: Abandonment of Existing Water Main

1. Specification References:

Work of the following specification Sections are referenced under this Bid Item.

- a. Section 02240: Dewatering Excavations.
- b. Section 02315: Excavation, Trenching and Backfilling.
- c. Section 02510: Ductile Iron Pipe and Fittings.
- d. Section 02516: Thrust Restraint.
- e. Section 02518: Disinfection and Testing of Water Mains.

2. Measurement for Payment:

Abandonment of existing water main will be measured per EACH abandonment, for Work which includes:

- a. Trench excavation and disposal of spoils.
- b. Excavation dewatering
- c. Furnishing, placing and compacting trench backfill and bedding up to the bottom of the proposed aggregate sub-base or the existing ground line.
- d. Cutting, capping and thrust blocking the existing water main.
- e. Removing the existing fitting if necessary.

3. Method of Payment:

All payment for Work under Item No.7, Abandonment of existing water main, will be paid for bid items 7a thru 7c, as noted in the Schedule of Prices. All Work will be paid per EACH for:

- Item 7a, ABANDONMENT OF EXISTING WATER MAIN, 8"
Item 7b, ABANDONMENT OF EXISTING WATER MAIN, 12"
Item 7c, ABANDONMENT OF EXISTING WATER MAIN, 24"

H. Bid Item No. 8: Abandonment of Existing Valve and Basin.

1. Specification References:

Work of the following Specification Sections are referenced under this W.M. Item.

- a. Section 02240: Dewatering Excavations.
- b. Section 02315: Excavation, Trenching and Backfilling.

2. Measurement for Payment:

Abandonment of existing valve and basin will be measured per EACH valve and basin abandoned, for Work which includes:

- a. Trench excavation and disposal of spoils.
- b. Excavation dewatering.
- c. Furnishing, placing and compacting trench backfill and bedding up to the bottom of the proposed aggregate sub-base or the existing ground line.
- d. Salvaging and delivery of the frame and lid to the Department.

3. Method of Payment:

All Work will be paid per EACH for:

- Item 8, ABANDONMENT OF EXISTING VALVE AND BASIN.

I: BID ITEM NO. 9: PITOMETER TAP INSTALLATION

1. Specification References

- a. Section 02082 – Valves.
- b. Section 02510 – Ductile Iron Pipe and Fittings.
- c. Section 02518 – Disinfection and Testing of Water Mains.
- d. Section 02535 – Valve Basins, Manholes and Catch Basins.

2. Measurement for Payment

Pitometer tap installation will be paid per EACH pitometer tap, basin, and associated work as shown on the detailed drawing and as specified.

3. Method of Payment

All work will be paid per EACH for:

Item 9, PITOMETER TAP INSTALLATION

J. Bid Item No. 10: Reconnect Water Service To New Water Main.

1. Specification References:

Work of the following Specification Sections are referenced under this Bid Item.

- a. Section 02082: Valves.
- b. Section 02240: Dewatering Excavations.
- c. Section 02315: Excavation, Trenching and Backfilling.
- d. Section 02510: Ductile Iron Pipe and Fittings.
- e. Section 02512: Water Services 2-inch (50 mm) and Smaller.
- f. Section 02516: Thrust Restraint.
- g. Section 02518: Disinfection and Testing of Water Mains.

2. Measurement for Payment:

RECONNECT WATER SERVICE TO WATER MAIN will be measured per EACH reconnected water service or service tested for control for the size specified, for Work which includes:

- a. Removal and disposal of existing surface features.
- b. Trench excavation and disposal of spoils.
- c. Excavation dewatering.
- d. Furnishing and installing water main piping, water service piping, fittings, roundways, corporation cocks, gaskets, polyethylene encasement, thrust restraint and appurtenances.
- e. Furnishing, placing and compacting trench backfill and bedding.
- f. Furnishing and installing wedge valves and valve boxes.
- g. Providing connections to the existing water service.
- h. Cutting, capping and bracing the existing pipe and removal of existing pipe and fittings.

- a. Testing existing services for control.
 - b. Augering water service piping including auger pits, auger pit restoration, sewer inspections for jacking fluid, augering equipment and site preparation, and utility investigation.
3. Method of Payment:

All payment for Work under Item No. 10, Reconnect existing water, will be paid for under bid item 10 as noted in the Schedule of Prices. All Work will be paid per EACH for:

Item no. 10, RECONNECT EXISTING WATER SERVICE

K. Bid Item No. 11: Pressure Connection 30"x 8"

1. Specification References:

Work of the following Specification Sections are referenced under this Bid Item.

- a. Section 02084: Tapping Connections and Valves.
- b. Section 02240: Dewatering Excavations.
- c. Section 02510: Ductile Iron Pipe and Fittings.
- d. Section 02315: Excavation, Trenching and Backfilling.
- e. Section 02516: Thrust Restraint.
- f. Section 02518: Disinfection and Testing of Water Mains.
- g. Section 02535: Valve Basins, Manholes and Catch Basins.

2. Measurement for Payment:

The size of each pressure connection will be defined as the size of the tapping valve utilized in the pressure connection. PRESSURE CONNECTION will be measured per EACH pressure connection installed for the diameter specified, for Work which includes:

- a. Removal and disposal of existing surface features.
- b. Trench excavation and disposal of spoils.
- c. Excavation dewatering.
- d. Furnishing and installing water main piping, fittings, gaskets, polyethylene encasement, thrust restraint and appurtenances.
- e. Furnishing, placing and compacting trench backfill and bedding.
- f. Furnishing and installing tapping valve, sleeve, test tap, valve basin, frame and lid.

3. Method of Payment:

All payment for Work under Bid Item No. 11, PRESSURE CONNECTION 30"X 8", will be paid for as noted in the Schedule of Prices. All work will be paid per EACH.

L. Bid Item No. 12: Water main Fittings (Additional)..

1. Specification References:

Work of the following Specification Sections are referenced under this item

- a. Section 02510: Ductile Iron Pipe and Fittings.
- b. Section 02516: Thrust Restraint.

2. Measurement for Payment:

Additional fittings that are installed will be measured as the manufacturer's listed fitting weight, in POUNDS, the work includes:

- a. Furnishing and installing additional fittings, gaskets, polyethylene encasement, thrust restraint and appurtenances.

3. Method of Payment:

All Work will be paid per POUND for:
Item 12, WATER MAIN FITTINGS

SECTION 01550

TRAFFIC CONTROL AND REGULATIONS

PART 1 – GENERAL

1.1 DESCRIPTION OF WORK

This Section includes the requirements for the furnishing, installing, maintaining, relocating, and removing all traffic control devices used for the purpose of regulating, warning, or directing traffic during the Work of this Contract.

1.2 REFERENCES

- A. CDOT Regulations for Openings, Construction, and Repair in the Public Way (CDOT Specifications).
- B. IDOT Standard Specifications for Road and Bridge Construction (SSRBC).
- C. IDOT Manual on Uniform Traffic Control Devices.
- D. IDOT Highway Standards.
- E. Applicable highway standards of governmental agencies under whose jurisdiction work is being performed.
- F. Follow the latest edition of the above references.

PART 2 - PRODUCTS

2.1 TRAFFIC CONTROL DEVICES

- A. All traffic control devices must conform to the drawings, specifications, and traffic control standards of applicable governmental agencies, Chapter 7 of the CDOT Specifications, Section 700 of the SSRBC, the IDOT Manual on Uniform Traffic Control Devices, and the IDOT Highway Standards. No modification of these requirements will be allowed without prior approval of the Commissioner.

PART 3 - EXECUTION

3.1 GENERAL

- A. The Contractor is responsible for the proper location, installation, arrangement, and maintenance of all traffic control devices including: signs and their supports, signals, pavement markings, barricades with sand bags, channelizing devices, warning lights, arrow boards, flaggers, or any other device used for the purpose of regulating, warning, or guiding traffic.
- B. Maintenance of traffic must be provided as shown on the drawings, CDOT Specifications, SSRBC, applicable highway standards, as specified here, and as directed by the Commissioner.

3.2 CONTRACTOR'S EQUIPMENT AND VEHICLES

- A. When traveling in lanes open to public traffic, the Contractor's equipment and vehicles must enter or leave work areas in a manner which will not be hazardous to, or interfere with, traffic and must not park or stop except within designated

work areas. Personal vehicles owned by the Contractor or the Contractor's employees must not park within the right of way except in specific areas designated by the Commissioner.

3.3 MAINTAINING ACCESS TO PROPERTY

- A. It is the responsibility of the Contractor to maintain adequate access to private property, public streets, and alleys during the construction period. The Contractor must place PCC base course (12-inch) as soon as the trench is backfilled, unless otherwise directed by the Commissioner. The Contractor must maintain the pavement until the street is repaved.

3.4 REMOVAL OF DIRT, MUD, AND DEBRIS

- A. All dirt, mud, debris, and other foreign materials tracked onto the public right-of-way must be removed immediately by the Contractor.

3.5 MINIMIZING DUST

- A. Dust generated either at the Site of the Work or along the route of the hauling operations must be kept to a minimum and at no time may create a nuisance. The Contractor must enact dust control measures.

3.6 MAINTENANCE

- A. The Contractor must ensure that all traffic control devices installed under this Contract are operational twenty-four (24) hours a day, including Sundays and holidays. Traffic control devices must include all signs, markings, barricades, arrow boards, lights, and other traffic control devices to maintain traffic, protect the public, and maintain the detour route as directed by CDOT/IDOT. All traffic control devices must remain in place until specific authorization for relocation or removal is received from the Commissioner.

3.7 REMOVAL

- A. When directed by the Commissioner, the Contractor must remove all traffic control devices, which were furnished, installed, and maintained under this Contract, and such devices will remain the property of the Contractor.

END OF SECTION 01550

SECTION 01724

CONSTRUCTION STAKING

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

- A. This Section includes establishing and maintaining lines and grades for Work under this Contract.

PART 2 - PRODUCTS - (Not Applicable)

PART 3 - EXECUTION

3.1 GENERAL

- A. All work under this Contract must be constructed in accordance with the lines and grades shown on the Plans, specified, or as directed by the Commissioner. The Contractor has full responsibility for keeping alignment and grade.

3.2 REFERENCE MARKS FOR CONSTRUCTION

- A. Reference marks for line and grade will be set by the Commissioner as the Work progresses and will be located to cause as little inconvenience to the prosecution on the Work as possible. The Contractor must so place excavation and other materials as to cause no inconvenience in the use of the reference marks provided. The Contractor must remove any obstructions placed that are contrary to this provision.
- B. The Contractor must furnish stakes and other such materials and give such assistance, including the supervision of a Registered Professional Engineer or a Professional Land Surveyor in the State of Illinois, and qualified helpers, as may be required by the Commissioner for setting line and grade reference marks. This process is considered incidental to the establishing and maintaining of lines and grades and no additional payment will be allowed. The Commissioner will establish controlling points for benchmarks and base lines. The Contractor must check such lines and grades by such means as are deemed necessary and, before using them, must call the Commissioner's attention to any inaccuracies. The establishment of all working or construction lines and grades as required from the reference marks set by the Commissioner is considered incidental to the construction and no additional payment will be allowed. Also, the Contractor has sole responsibility for the accuracy of the working or construction lines and grades. The Contractor, however, is subject to the check and review of the Commissioner.
- C. The Contractor must keep the Commissioner informed a reasonable time in advance as to the Contractor's need for line and grade reference marks in order

that they may be furnished, and all necessary measurements made for record and payment with the minimum inconvenience to the Commissioner and minimum delay to the Contractor.

- D. The Contractor must verify all distances and angles of deflection prior to ordering any pipe. The distances and angles shown on the drawings are for information only. The City makes no guarantees as to the accuracy of the measurements shown.
- E. It is the intention not to delay the Work for the establishment of reference lines and grades, but when necessary, working operations may be suspended for such reasonable time as the Commissioner may require for this purpose.

3.3 PRESERVATION OF REFERENCE MARKS

- A. The Contractor must safeguard all points, stakes, grade marks, monuments, and bench marks made or established on the Work, re-establish them if disturbed, and bear the entire expense of rectifying work improperly installed due to not maintaining, protecting, or removing without authorization such established points, stakes, and marks.

END OF SECTION 01724

SECTION 02080

FIRE HYDRANTS

1.0 GENERAL

1.1 DESCRIPTION OF WORK

This section includes requirements for supplying materials for, and the installation of fire hydrants, as shown on the drawings and specified here.

1.2 WORK SPECIFIED ELSEWHERE

- A. Section 02240 - Dewatering Excavations
- B. Section 02280 - Repair and Adjustment of Sewer Pipe and Structures
- C. Section 02315 - Excavation, Trenching and Backfill
- D. Section 02510 - Ductile Iron Pipe and Fittings
- E. Section 02516 - Thrust Restraint
- F. Section 02518 - Disinfection and Testing of Water Mains

1.3 REFERENCES

- A. ASTM A108 - Standard Quality Carbon Steel Bars.
- B. ASTM A126 - Gray Iron Castings for Valves, Flanges, and Pipe Fittings.
- C. ASTM A153 - Hot Dip Zinc Coating for Iron and Steel Hardware.
- D. ASTM A307 - Carbon Steel Bolts and Studs.
- E. ASTM A536 - Ductile Iron Castings.
- F. ASTM B62 - Composition Bronze or Ounce Metal Castings.
- G. ASTM B584 - Copper Alloy Sand Castings.
- H. ASTM B633 - Electrodeposited Zinc Coatings on Iron and Steel.
- I. ASTM C700 - Vitrified Clay Pipe, Extra Strength, Standard Strength, and Perforated.
- J. ASTM D395 - Test Methods for Rubber Property Compression Set.
- K. ASTM D412 - Test Methods for Rubber and Elastomers.
- L. ASTM D2000 - Classification of Rubber Products in Automotive Applications.
- M. ASTM D2240 - Durometer Test for Rubber Hardness.
- N. AWWA C502 - Dry Barrel Fire Hydrants.
- O. Federal Specification FF-B-575C – Bolts; Hexagon and Square.
- P. Federal Specification RR-C 271D - Chains and Attachments.
- Q. Follow the latest edition of the above references.

1.4 SUBMITTALS

Provide an affidavit to the Commissioner from the manufacturer to attest to the fact that all hydrants furnished under this Contract were tested and proven hydrostatically tight and mechanically sound in accordance with the specified test procedures.

1.5 QUALITY ASSURANCE

- A. After each hydrant is completely assembled, it must be mechanically and hydrostatically tested in conformance with AWWA C502, Sec 5.1.

- B. The Work performed for the hydrant installation must be performed by a plumber licensed in the State of Illinois or the City. The Work may include, but not be limited to, setting hydrants; joining all pipe, fittings, and valves; installation of joint gaskets and continuity wedges; and tightening of all gland nuts and bolts, as applicable for the installation.

2.0 PRODUCTS

2.1 GENERAL

The hydrants must be of the design shown in detail drawing with mechanical joint bottom. The completed hydrants must be delivered finished, painted, and fully assembled.

2.2 FIRE HYDRANTS

- A. The standpipe must include the manufacturer's name, year of manufacturing, and the letters "C.W.W." in letters 1-inch high. This lettering must be positioned approximately 1-foot below the top flange.
- B. Materials from which the various parts of the hydrants are constructed must be of the kind designated in Appendix A. Each kind of material used must meet the requirements as to physical and chemical properties hereafter specified. Test bars required to established quality grade or strength under the ASTM standards must be made and machined by the manufacturer as part of the work.
- C. 3/4-inch by 2 3/4-inch unfinished hex head machine bolts and 3/4-inch American Standard regular hot press hex nuts must conform to Federal Specification FF-B-575C, Class B Steel, Class 1 fit, or, hex head bolts and hex nuts must conform to ASTM A307 Grade A. All nuts and bolts to be hot dipped galvanized conforming to ASTM A153 or must be coated by the rust proof electrozinc process ASTM B633, Type G.S., or SS Type 18-8SS, ANSI Type 302, 303, or 304.
- D. Iron castings must conform to ASTM A126 Class B. The thickness of metal castings, whose standard thickness is less than 0.8-inch, must not be more than 0.08-inch less than the standard thickness, and the deficiency in thickness of castings whose standard thickness is 0.8-inch or more must not exceed 10% of the standard thickness. The above allowable deficiencies in thickness, however, must not extend over more than one-half of the area of any casting. The diameter of the castings must not vary from the standard dimensions by more than 0.08-inch.
- E. All bronze castings, with the exception of the stem nut, stem screw, and valve seats must conform to ASTM B62 for Leaded Red Brass Copper Alloy UNS No. C83600. The valve seat must conform to ASTM B584 for Leaded Manganese Bronze, Copper Alloy UNS No. C86700. The stem nut and stem screw must conform to ASTM B584 for Silicon Brass, Copper Alloy UNS No. C87600 with the following mechanical properties:
 - 1. Minimum Tensile Strength - 45,000-psi
 - 2. Minimum Yield Strength - 25,000 psi

3. Minimum Elongation - 16% of length
 4. Brinell Hardness - 110
- F. The stem nut and stem screw must be stamped SI for identification purposes.
- G. Wrench nuts made of ductile iron must be marked "D.I." on the flange portion opposite the arrow indicating the direction of turn to open.
- H. Ductile iron castings must comply with compositions and physical properties in accordance with ASTM A536 Grade 65-45-12.
- I. The City will furnish neoprene-sealing valves if requested by the Contractor. The Contractor's charges for transporting the neoprene seating valves must be considered incidental to the construction and no additional payment will be allowed.
- J. Tan fiber (Fiberflex "Detroit" material or equal) full face gasket 1/16-inch thick, 8 1/2-inches by 13 1/2-inches with eight (8) holes 7/8-inch diameter on an 11 3/4-inch bolt circle must be provided for flange gaskets.
- K. Steel hydrant chain must comply with Federal Specification RR-C-271D (1), Type II, Class 2, with an approximate weight of 25-pounds per 100-feet, and have a hot galvanized coating. This chain, approximately 26-inches long, must be connected to hydrant cap hooks and fastened at its center to the hydrant by means of the 1/2-inch by 1-inch cap screw with chain angle and "S" hook of 1/2-inch mild steel stock "S" hook and cap hooks which engage the chain, must be securely welded in the closed position or fastened in a suitable manner to hold the hooks securely in a closed position.
- L. Where the Plans call for finish and drilling, all such work must accurately comply with the dimensions shown, so that all parts are interchangeable from one hydrant to another. It will be the manufacturers responsibility to provide the patterns and gauges necessary to perform the work specified.
- M. Where machining tolerances are not indicated on the drawings, the following must be used where applicable:
1. If dimension is in decimals, tolerance is ± 0.005 -inch
 2. If dimension is in inches, tolerance is $\pm 1/64$ -inch
- N. Appropriate lubricant must be applied to threads on hydrant bottom, 1/2-inch by 1-inch cap screw and valve seat before assembly.
- O. Operating stem must be of cold rolled steel, ASTM A108 Grade 1018. Stem must be coated, excluding bottom 3 7/8-inch of the section below shoulder including threads, with a bituminous coating.
- P. Rubber Gaskets must comply with ASTM D2000; Type SC-715B, as follows:

1. Shore a Durometer Hardness - 70 + 5 ASTM D2240.
 2. Tensile Strength - 1500-psi minimum ASTM D412.
 3. Compression Set - 35% maximum ASTM D395.
- Q. The City reserves the right to make at any time such tests as it may deem proper to determine that the materials used are proper for the work and that the hydrants are of good mechanical construction. The contractor must give the authorized inspectors of the City free access to all places where hydrants are being made. At the City's request the manufacturer must furnish properly prepared standard test specimens of the materials used and must provide facilities for testing them.
- R. Fire Hydrants that do not meet the requirements of this Specification will be rejected and, when so ordered by the City, the Contractor must remove all inferior hydrants not meeting the Specification and replace rejected items within the time limits as specified. The removal and replacement of the hydrants will be considered incidental to the construction and no additional payment will be allowed.

2.3 PAINT

- A. All ferrous metal parts of the hydrant, inside and outside, must be thoroughly cleaned before coating. Coatings used on interior surfaces of the hydrant that are in contact with potable water must be suitable for contact with drinking water. Prepare hydrant surfaces and apply paint in accordance with paint manufacturer's recommendations. Do not paint exposed hydrant nozzle threads or other useable threads.
- B. Primer must be red oxide primer, WRFA-13-127, by W.C. Richards Company, Benjamin Moore M07 Universal Metal Primer, or equal.
- C. Top coat must be alkyd high-gloss enamel, Benjamin Moore Impervo C13320 (Brilliant Red), Sherwin Williams Industrial Enamel Safety Red 617-4064, or equal.
- D. Paint for color coding flange must be as follows:
1. White as manufactured by Seymour Stripe 16-652 Spray (White), Rustoleum High Performance Acrylic 5200 System (5292 Gloss White), Sherwin Williams PM 200 AES Pure White 5178-99993, or equal.
 2. Yellow as manufactured by Benjamin Moore Impervo C133 Alkyd High-Gloss Metal and Wood Enamel (Safety Yellow), Sherwin Williams Industrial Enamel Safety Yellow 617-4072 (or 8000-50320) or equal.
 3. Blue as manufactured by Seymour Stripe 16-653 Spray (Precaution Blue), Rustoleum High Performance Acrylic 5200 System (5225 Safety Blue), or equal.

E. Shop Coating of Fire Hydrants.

1. Exterior ferrous surfaces of the hydrant must be painted with a coat of primer to 2-feet below the top flange.
2. Exterior ferrous surfaces of the hydrant must be given a topcoat of alkyd high-gloss enamel to 2-feet below the top flange.
3. All exterior ferrous surfaces below the ground line not coated with primer and topcoat must be shop coated with two coats of asphaltic coating, each a minimum of 1-mil thick. The first coat must be allowed to dry thoroughly before applying the second coat.

2.4 HYDRANT DRAIN

Hydrant drains must be constructed of 6-inch diameter, extra strength, and perforated clay pipe, conforming to ASTM C700, with mortared bell and spigot type joints.

3.0 EXECUTION

3.1 GENERAL

- A. Install fire hydrants and hydrant drain with drainage bedding, and connect to hydrant drain outlet as detailed on the drawings.
- B. Securely connect fire hydrant to the water main using mechanical joint thrust restraint glands or other restrained joint fittings as shown on the drawings.
- C. Pressure tests the fire hydrant installation with full line test pressure to the fire hydrant without blocking behind the fire hydrant.
- D. Hydrant leads must be 8-inches in diameter, or as otherwise specified or shown on the Plans.
- E. Spool pieces are not allowed for the vertical adjustment of hydrants. If a vertical adjustment is required due to the depth of the water main, an offset must be utilized prior to installing the hydrant.

3.2 COLOR CODING HYDRANT FLANGES

Contractor must color code the vertical edge of the hydrants top flange, (located approximately 6-inches from the centerline of the nozzle cap), on all installed hydrants in accordance with the Plans.

END OF SECTION 02080

SECTION 02082

VALVES

1.0 GENERAL

1.1 DESCRIPTION OF WORK

This section includes requirements for the installation of valves as shown on the drawings and as specified here.

1.2 WORK SPECIFIED ELSEWHERE

- A. Section 02240 - Dewatering Excavations
- B. Section 02315 - Excavation, Trenching and Backfilling
- C. Section 02510 - Ductile Iron Pipe and Fittings
- D. Section 02512 - Concrete Pipe and Fittings
- E. Section 02518 - Disinfection and Testing of Water Mains
- F. Section 02535 - Valve Basins, Manholes and Catch Basins

1.3 REFERENCES

- A. ASTM A48 - Gray Iron Castings.
- B. ASTM A126 - Gray Iron Castings for Valves, Flanges.
- C. ASTM A436 - Austenitic Gray Iron Castings.
- D. ASTM A439 - Austenitic Ductile Iron Castings.
- E. ASTM B584 - Copper Alloy Sand Castings for General Application.
- F. AWWA C110 - Ductile Iron and Gray Iron Fittings.
- G. AWWA C111 - Rubber Gasket Joints for Ductile Iron.
- H. AWWA C500 - Metal-seated Gate Valves for Water Supply Service
- I. AWWA C504 - Rubber Seated Butterfly Valves.
- J. AWWA C509 - Resilient Seated Gate Valves.
- K. Federal Specification FF-B-575C - Bolts; Hex and Square.
- L. Federal Specification FF-N-836E - Nut; Square, Hex, Cap.
- M. Follow the latest edition of the above references.

1.4 SUBMITTALS

- A. Provide an affidavit to the Commissioner stating that valves, valve operators for butterfly valves, and torque overload protectors comply with all applicable provisions of the Plans and this Section.
- B. Provide to the Commissioner catalog cuts or certified drawings of the valves, valve operators and torque overload protectors to be furnished. The catalog cuts and/or drawings must provide all necessary information regarding dimensions and materials used.
- C. The submittals must be reviewed and approved by the Commissioner prior to installation.

1.5 QUALITY ASSURANCE

- A. Each valve must be hydrostatically tested at the manufacturer's shops and proven hydraulically tight at all pressures up to 200-pounds per square inch.
- B. For gate valves, the following tests are required:
 - 1. The first test consists of applying 200-pounds per square inch hydrostatic pressure between the discs through an opening in the bonnet casting.
 - 2. The second test consists of applying 200-pounds per square inch hydrostatic pressure against the outside of each disc in the manner prescribed below:
 - a. The valves must be plugged or capped on both ends. The caps or plugs must be drilled and tapped to accept the pressure test piping.
 - b. With the pressure test piping in place, open the gates of the valve, the test-piping valve, and remove the plug in the bonnet. Fill the valve with water. When a discharge occurs at the outlet side, close the water supply line and insert the bonnet plug.
 - c. Close the gates of the valves, open test-piping valve, and apply a 200-pounds per square inch hydrostatic pressure on the inlet side.
 - d. Hold test pressure for one minute. During this time no water should discharge from the outlet end of the test piping. If no leak occurs, release pressure, reverse the test piping, and repeat the test procedures for the other gate. If a leak occurs, repair and/or replace the valve as directed by the Commissioner. Repeat the test procedures.
 - 3. An affidavit must be furnished from the manufacturer to attest to the fact that each of the valves furnished under this Contract were proven hydrostatically tight in accordance with the specified test procedures.
- C. Valves that do not meet the requirements of this Section will be rejected, and then removed by the Contractor, and must be replaced with valves that conform to this Section, within the time period allowed by the Commissioner. Gate valve removal and replacement will be considered incidental to the installation of the valves and no additional payment will be allowed.
- D. The Work performed for installing valves must be performed by a plumber licensed in the State of Illinois or the City. The Work may include, but not be limited to, setting the valve; cutting and joining all pipe; installing test taps, fittings, adapters, joint gaskets, and continuity wedges; and tightening all gland nuts and bolts, as applicable for the installation.

2.0 PRODUCTS

2.1 CHICAGO STANDARD GATE VALVES

- A. The valves must be of the design shown on the drawings and as specified here. All parts must be constructed as per the Specifications and the completed valves delivered fully assembled.
- B. The following characters must be cast in ½-inch letters on each bonnet:
Chicago
Year of Manufacture
Maker's Name
- C. Gate valves must be of mechanical joint type durable disk and in the following sizes: 4-inch, 6-inch, 8-inch, 12-inch, and 16-inch. Larger valves must be butterfly style.
- D. Material from which the various parts of the valves are constructed must be of the kind designated on the Drawings and bill of material, except that bolts and nuts may be made of steel or cast iron. Material used must meet the requirements as to physical and chemical properties, as specified in this Section.
- E. Valves found to contain defects such as blowholes, shrinkage or slag holes, cold shuts, or cracks will be rejected.
- F. The thickness of metal in castings, whose standard thickness is less than 0.8-inch, must not be more than 0.08-inch less than the standard thickness and the deficiency in thickness of castings, whose standard thickness is 0.8-inch or more, must not exceed 10% of the standard thickness. The above allowable deficiencies in thickness, however, must not extend over more than one-half of the area of the casting.
- G. After being cleaned and tested, every assembled valve and all metallic parts must be coated inside and outside with coal tar pitch varnish. It must produce a smooth and non-tacky coating tough and tenacious when cold and not brittle nor with any tendency to scale off.
- H. The brass castings must comply with ASTM B584, Copper Alloy UNS No. C83600.
- I. The bronze in the valve stem and in the stem nut must be manganese bronze, complying with ASTM B584, Copper Alloy UNS No. C86700.
- J. The gaskets used between the flanges must be fully faced, 1/32-inch thick and made of heavy-duty, asbestos-free, fiber composition, suitable for water service.
- K. Bolts and nuts must be made of cast iron or steel. Heads of seal plate bolts must conform to the dimensions shown on the Drawings (an alternate of hex or square head bolt is acceptable) while all other requirements of seal plate bolts must conform to Federal Specification FF-B-575C and nuts must conform to FF-N-836E. Heads of bolts must be unfinished and nuts must be semi-finished. Both bolts and nuts must be hot dipped galvanized as specified in the applicable Federal Specification.

- L. The valves herein specified must be furnished complete with mechanical joint accessories. The mechanical joint accessories must consist of mechanical joint thrust restraint glands, rubber gaskets, and tee head bolts and hex nuts, all conforming to ANSI A21.10 (AWWA C110). Dimensions and tolerances must conform to table 10.9 of said specifications.
- M. It will be the manufacturer's responsibility to provide the patterns and gauges necessary to perform the work to be done hereunder. The Department will not furnish these items.
- N. Where tolerances are not indicated on the drawings the following must be applicable:
 - 1. If dimension is in decimals, tolerance is +0.005-inch.
 - 2. If dimension is in fractions, tolerance is +1/64-inch.
- O. The workmanship on all parts of the valves must be of high standard. Where Drawings call for finish and drilling, all such work must accurately comply with dimensions shown, so that all parts must be interchangeable from one valve to another of the same size. The manufacturer must furnish jigs or templates necessary to the successful manufacture of those valves as specified.
- P. The Chicago Department of Water Management reserves the right to make at any time such tests as it may deem proper to determine that the materials used are proper for the Work and that the valves are of good mechanical construction. The manufacturer must give the authorized inspectors of the Department free access to all places where valves are being made. At the Department's request, the manufacturer must furnish properly prepared standard test specimens of the materials used and must provide facilities for testing them.
- Q. All valves must turn clockwise to open.
- R. Operating nuts must be 2 ½-inches square at the base of the nut.

2.2 BUTTERFLY VALVES

- A. Butterfly valves, as specified here, must be designed, manufactured, tested, and inspected in accordance with AWWA C504, and with the requirements of this Section as listed hereafter:
 - 1. Body Class: 150B.
 - 2. Body Type: Short bodied mechanical joint, as specified.
 - 3. Maximum Non-shock Shut-off Pressure: 100psi.
 - 4. All valves must have flow through discs.
 - 5. Each valve furnished must be subjected to the performance, leakage and hydrostatic tests described in Section 5.2 of AWWA C504.

6. A minimum of two (2) weeks prior to the test dates, the manufacturer must notify the Commissioner in writing when the shop testing of the valve will occur. Failure to notify the Commissioner may be grounds for rejection.
7. The manufacturer must submit to the Commissioner records of all tests performed under Sections 2.3, 3.8.5, and 5.2 of AWWA C504.
8. Shaft seals must be either split V type packing or "O" ring seals. Shaft seals consisting of a stuffing box with pull down packing are not acceptable.
9. The shaft seal area must not be exposed to the environment. Should the valve design utilize an open packing bonnet area, that area must be enclosed with a 304 series type 18-8 stainless steel, minimum 1/4-inch thick removable shroud. The shroud must be fully sealed and rated for buried service. An access cover must be provided on the shroud with a minimum opening of 6-inches x 8-inches.
10. The valve shaft must be 304 or 316 stainless steel.
11. The valve body must be made of cast iron conforming to ASTM A126, Class B or ASTM A48, Class 40 alloy cast iron ASTM A436, Type 1 and 2 or ASTM A439, type D2 with maximum of 0.003% lead. The valve disc must be cast iron conforming to ASTM A48, Class 40 and it must have a seating edge of 304 or 316 stainless steel. The seating edge may be installed in the valve body if the rubber seat is applied to the valve disc. The valve seats for 24-inch and larger butterfly valves must be capable of adjustment or replacement at the installation site.
12. Valve discs must be secured to shafts by means of solid, smooth-sided stainless steel or monel taper pins or dowel pins having a circular cross section. Each taper pin or dowel pin must be extended through the shaft and mechanically secured in place. The use of bolts, setscrews, knurled or fluted dowel pins, flat sided taper pins, expansion pins, roll pins, tension pins, spring pins, or other devices in lieu of the pins specified herein will not be acceptable.
13. The valves and valve operators must be rated for buried service, except electric actuators.
14. Valve operators must conform to AWWA C504 for Class 150B. Manual operators must be worm gear, self-locking type designed to hold the valve in any intermediate position without creeping or fluttering. Operators must be equipped with torque overload protection to prevent over travel of the disc in the open and closed position. Spur gear must be furnished with an operator to increase the number of turns and reduce operating torque. A separate limit stop device must also be installed in accordance with "Torque Overload Protection", described below. Operators must provide position indication on the housing of the operator. Valves must open with a clockwise rotation of the nut. The valve and valve operator must be rated for bi-directional flow.

15. Valve operators must be equipped with a Chicago standard style hub nut. The hub nut must be attached to the input shaft of the operator by means of a shear pin. The shear pin must be sized such that it fails when 350 foot-pounds of input torque is applied to the hub nut. Three (3) additional shear pins must be furnished as replacement part for each valve ordered.
16. Corrosion resistant nameplates, as described in Section 6.1 of AWWA C504, must be permanently attached to both the valve and valve operator. There must be two (2) valve nameplates. One must be affixed to the valve body and the other must be affixed to the valve operator in a prominent location. In addition to the normal valve data, the plate must also include the number of turns required to operate the valve and the direction to open (clockwise to open). There must be one (1) operator nameplate affixed to the valve operator. The minimum number of turns to close the valve must be no less than 2 turns per inch (5 turns per centimeter) of valve size in order to minimize water hammer.
17. The manufacturer must provide all nuts, bolts, gaskets, and glands required to make connections.

B. Torque Overload Protection

1. Whenever shown on the drawings, specified, or as directed by the Commissioner, the Contractor must furnish torque overload protection. The device must be installed on top of the Chicago standard hub nut on butterfly valve operators and in conformance to the following requirements.
2. Purpose: The over torque protector must prevent butterfly valve and operator from damage due to excessive operating torque.
3. Operation: The device must transmit applied torque in either direction only up to a preset amount and automatically disengage if greater torque is applied. It must automatically reset if the applied torque is below the preset amount.
4. Description: The device must be of overall rugged and of durable construction suitable for long-term reliable operation and suitable for buried service.
5. The upper end must have an integral 2 ½-inch square operating nut and the lower end must have a matching socket. The socket must have one (1) 2-inch square head set screw in each of two (2) adjacent faces.
6. The operating mechanism must employ spring-loaded tapered rollers engaged in matching tapered detents. A ball bearing type design will not be accepted.
7. The manufacturer's identification must be cast in 3/8-inch or larger letters on an upper surface.

8. Corrosion Protection and Lubrication: The entire housing must be coated inside and outside with two-part epoxy. The outside must have a topcoat of two-part polyurethane similar in color to U.S. Paint #G9337 "Sun Yellow".
9. The operating mechanism must be permanently lubricated and sealed to withstand 50-feet of water head.
10. There must be no water-retaining external cavities.
11. Service Life: The device must have a minimum life of one-thousand (1000) trips from rated capacity.
12. Trip Torque Set Point: The device must be factory set to trip at 200-foot-pounds applied torque.
13. Trip Torque Adjustment: Trip torque must be adjustable from 10% to 100% of rated capacity without disassembling the unit. The adjustment means must be sealed and concealed to prevent tampering.

3.0 EXECUTION

3.1 FIELD TESTING

All valves will be tested as specified in Section 02518 - Disinfection and Testing of Water Mains.

3.2 SETTING OF VALVES

Valves must be carefully installed in their proper positions, free from all distortion and strain, with mechanical or flanged joints, and must be packed and left in satisfactory operating condition.

END OF SECTION 02082

SECTION 02084

TAPPING SLEEVES AND VALVES

1.0 GENERAL

1.1 DESCRIPTION OF WORK

This section includes the requirements for tapping cast iron/ductile iron and concrete water mains while maintaining the water main under line pressure without disrupting service to customers as shown on the drawings and specified here.

1.2 WORK SPECIFIED ELSEWHERE

- A. Section 02240 - Dewatering Excavations
- B. Section 02315 - Excavation, Trenching and Backfilling
- C. Section 02516 - Thrust Restraint
- D. Section 02518 - Disinfection and Testing of Water Mains
- E. Section 02535 - Valve Basins, Manholes and Catch Basins

1.3 REFERENCES

- A. ANSI A21.11 - Rubber Gasket Joints for Ductile Iron Pressure Pipe and Fittings.
- B. ASME/ANSI B16.1 - Cast Iron Pipe Flanges and Flanged Fittings.
- C. ASTM A126 - Gray Iron Castings for Valves.
- D. ASTM A240 - Stainless Steel for Pressure Vessels.

- E. ASTM A242 - High Strength - Low Alloy Structural Steel.
- F. ASTM A285 - Carbon Steel for Pressure Vessels.
- G. ASTM A351 - Castings for Pressure Containing Parts.
- H. ASTM A536 - Ductile Iron Castings.
- I. AWWA C213 - Fusion Bonded Epoxy Coatings.
- J. AWWA C500 - Gate Valves for Water Supply.
- K. MSS-SP60 - Connecting Flange Joint Between Tapping Sleeve and Valve.
- L. Follow the latest edition of the above references.

1.4 SUBMITTALS

- A. Provide documentation affirming that tapping valves, tapping sleeves, and all appurtenances comply with applicable provisions of the Drawings and the specifications.

- B. Provide manufacturer's shop drawing or catalog cuts, as available, for tapping valves and sleeves that are proposed for the installation. The manufacturer's information must include dimensions, materials and installation procedures.

1.5 QUALITY CONTROL

- A. Tapping sleeves and valves found on inspection to contain defects, such as blowholes, shrinkage, slag holes, cold shuts, cracks, etc., will be rejected,

removed from the Work area and replaced with tapping sleeves and valves that conform to this section. This will be considered incidental to the construction of the tapping connection and no additional payment will be allowed.

- B. The Work necessary for direct tapping of iron or concrete pipe must be performed by a plumber licensed in the State of Illinois or the City. This Work may include, but not be limited to, the installation of tapping machinery and tapping of the pipe; the installation of tapping sleeves and taps; the installation of joint gaskets; the tightening of all gland nuts and bolts; and the tightening of continuity bolts, as applicable for the installation.

2.0 PRODUCTS

2.1 GENERAL

- A. The tapping sleeve and valve must provide a branch connection at right angles to the existing water main being tapped without shutting down the main.

2.2 TAPPING SLEEVESS FOR IRON PIPE SMALLER THAN 12-INCH DIAMETER.

- A. Acceptable manufactures and tapping sleeves for iron pipe smaller than 12-inch diameter include: Dresser, Style No.630 Ford, Style FTSS JCM, Model No. 432 Mueller, Model H-304 Smith-Blair, Model No. 665.
- B. The tapping sleeve must be the split sleeve type featuring low profile lugs, all stainless steel, full circumferential gasket, and separate, replaceable bolts for assembly.
- C. The body of the sleeve must be 18-8 Type 304 stainless steel per ASTM A240. All welds must be fully passivated to restore the original high corrosion resistance and appearance of the stainless steel. The sleeve sections must be connected by means of nuts and bolts. The sleeve body must be designed to fit iron water pipe of the sizes as verified by field inspections. D. The branch outlet of the sleeve must be flanged per ANSI B16.1, minimum 125 pounds. Drilling to be recessed for tapping valve per MSS-SP60. Flange material must be either CF8 stainless steel per ASTM A351 or Type 304 stainless steel per ASTM A240 The inside diameter of the branch outlet must be of full size so as to allow the free passage of a standard cutter.
- E. All bolts and nuts must be 18-8 Type 304 stainless steel per ASTM A240. Bolts must be separate, self-aligning, and replaceable. Nuts must be impregnated with anti-glaring lubricant. Integral bolts welded to the sleeve are not permitted.
- F. The gaskets must be made of vulcanized natural or synthetic rubber.
- G. The body of each connection must be stenciled with a range of pipe diameters that the connection will fit and also the diameter of the branch outlet.
- H. All sleeves must be designed for 150-pounds per square inch pressure rating.

2.3 TAPPING SLEEVES FOR IRON PIPE 12-INCH DIAMETER AND LARGER

- A. Acceptable manufactures and tapping sleeves for iron pipe 12-inch diameter and larger include: Dresser, Style 610. Ford, Style FTSC. JCM, Model No. 412. Mueller, Model No. H-615. Smith-Blair 622. The tapping sleeve must be one of the following types of split sleeves:
1. The mechanical joint type of cast or ductile iron.
 2. The fabricated steel type with epoxy coating.
- B. The body of the sleeve must be sized to compensate for a normal amount of oversize and out-of-roundness of the pipe. The sleeve sections must be connected by means of bolts and nuts and must be designed to fit the size of the existing water pipe as verified by field inspections. Material must be as follows:
1. Mechanical joint type sleeve body must be gray cast iron conforming to ASTM A126 Class "B" or ductile iron conforming to ASTM A536. Supply all necessary mechanical joint accessories.
 2. Fabricated steel type sleeve body must be steel conforming to ASTM A285 Grade "C" or ASTM A36. A 10-mil minimum thickness of fusion-applied epoxy must coat the body. This epoxy coating must meet the requirements of AWWA C213. C. The branch outlet of the sleeve must be flanged per ANSI B16.1, minimum 125 pound. Drilling to be recessed for tapping valve per MSS-SP60. The inside diameter of the branch outlet must be of full size to allow passage of standard cutters.
- D. All bolts must be separate, self-aligning, and replaceable. Material must be as follows:
1. Mechanical joint type nuts and bolts must be high strength, low alloy steel conforming to ASTM A242 or Type 300 stainless steel of the Austenitic series.
 2. Fabricated steel type nuts and bolts must be 18-8 stainless steel Type 304. Stainless steel nuts must be impregnated with anti-galling lubricant.
- E. Furnish all gaskets required for the sleeve body.
- F. The tapping sleeve must have a 3/4-inch diameter bronze NPT test tap and plug located in the branch outlet.
- G. The body of the tapping sleeve must be stenciled with the range of pipe diameters the sleeve will fit and also the diameter of the branch outlet.
- H. All sleeves must be designated for 150-pounds per square inch pressure rating.

2.4 TAPPING SLEEVES FOR CONCRETE PIPE

- A. Acceptable manufactures and tapping sleeve for concrete pipe include: JCM, Model No. 415. Price Brothers, Model No. Custom Order. Smith-Blair, Model No. 625.

- B. The tapping sleeve must be of the saddle type and include the tapping saddle, steel bands, rubber gaskets, a separate flanged tapping gland and all necessary accessories.
- C. The tapping saddle is to meet all the requirements of AWWA Manual M-9.

2.5 TAPPING VALVES

- A. The tapping valve must be a double-disc gate valve of a standard design and must open by turning in a clockwise direction. B. The tapping valve is subject to approval by the Commissioner and must conform to AWWA C500 for valves of sufficient strength to withstand 150-pounds working pressure. Body ring lugs must be cut out leaving an oversized circular waterway suitable for use with a standard sized cutter head.
- C. The tapping valve must have one flanged joint connection and one mechanical joint connection. Furnish all accessories required for completing connections at both ends of the valve. The companion flange for the mechanical joint outlet must be designed to accept standard tapping machines.
- D. The valve operating nut must be 2 ½ -inches square at the base of the nut.
- E. The valve stem must have an ultimate tensile strength of not less than 60,000-pounds per square inch and a minimum elongation of 15% in 2-inches.
- F. The valve castings must be of gray iron conforming to ASTM A126 Class "B" and must be free from defects such as blow holes, blisters; cold shuts, cracks, etc. Castings must be true pattern, boldly filleted at angles, and free from flaws. Castings must not be filled or plugged in any manner.
- G. All iron castings must be coated with petroleum asphaltic material and must be given two (2) coats outside and one (1) coat inside. All surfaces to be painted must be free from all rust, residues, and debris and must be in proper, dry condition immediately prior to paint application.

3.0 EXECUTION

- 3.1. Excavate and expose all pipes to be tapped in locations noted on drawings, or as directed by the Commissioner.
- 3.2. Measure the outside diameter of pipe to be tapped prior to ordering the tapping sleeves.
- 3.3. Install tapping connections per pipe manufacturer's instructions.

END OF SECTION 02084

SECTION 02240

DEWATERING EXCAVATIONS

1.0 GENERAL

1.1 DESCRIPTION OF WORK

This section includes work associated with dewatering excavations when necessary to provide a safe working environment and protect the Work and provide a satisfactory installation.

1.2 WORK SPECIFIED ELSEWHERE

- A. Section 02315 – Excavation, Trenching and Backfilling
- B. Section 02320 – Special Soils Excavation and Disposal
- C. Section 02510 – Ductile Iron Pipe and Fittings
- D. Section 02512 – Concrete Pipe and Fittings
- E. Section 02535 – Valve Basins, Manholes and Catch Basins

1.3 SUBMITTALS

Prior to commencing any excavation at the Site of the Work, the Contractor must submit to the Commissioner for review, the proposed method for control and removal of groundwater and water from any source whatsoever, including a description of the equipment to be used, the arrangement of the equipment, and the method of disposal. No excavation may be started until authorized by the Commissioner.

2.0 PRODUCTS (Not Used)

3.0 EXECUTION

3.1 PREPARATION

A. Capacity of Facilities

Facilities for the removal and disposal of water must be of sufficient capacity to keep the excavation dry under all circumstances.

B. Standby Facilities

Adequate standby facilities must be provided to insure that the excavation will be kept dry in the event of power failure or mechanical breakdown.

C. Well Points

If well points are used, provisions must be made for removing and resetting individual well points without taking the system of which they are a part out of service.

3.2 CONSTRUCTION

A. Dewatering

At all times during the excavation period, and until completion of the Work, and acceptance at final inspection, ample means and equipment must be provided with which to promptly remove and properly dispose of all water entering any excavation including leakage from the existing water main which is to be replaced. All excavations associated with the Work must be kept dry. Water must not be allowed to rise over, or to come in contact with, masonry and concrete until the concrete and mortar has attained a set satisfactory to the Commissioner and, in any event, no sooner than twelve (12) hours after placing the masonry or concrete.

B. Groundwater Levels

The Contractor must maintain the groundwater level at least 12-inches below the bottom of the excavation until the excavation is completely backfilled.

C. Water Management

1. Water pumped or drained from the Work must be disposed of in a suitable manner without damage to adjacent property, other Work under construction, street pavement, and parks. Water must not be discharged onto streets without adequate protection at the point of discharge. No water containing settleable solids may be discharged into sewers.
2. All damages caused by dewatering the Work must be the responsibility of the Contractor and must be promptly repaired at the Contractor's expense.

END OF SECTION 02240

SECTION 02315

EXCAVATION, TRENCHING AND BACKFILLING

PART 1 – GENERAL

1.1 DESCRIPTION OF WORK

This specification includes the requirements for excavation, bedding, backfilling and compaction of underground piping and associated appurtenances.

1.2 WORK SPECIFIED ELSEWHERE

- A. Section 02240 - Dewatering Excavations
- B. Section 02320 - Special Soils Excavation and Disposal
- C. Section 05100 - Structural and Miscellaneous Steel for Shoring and Sheeting
- D. Section 06130 - Timber and Lumber for Shoring and Sheeting

1.3 REFERENCES

- A. CDOT Regulations for Openings, Construction and Repair in the Public Way (CDOT Specifications).
- B. IDOT Standard Specifications for Road and Bridge Construction (SSRBC).
- C. ASTM D1557 – Laboratory Compaction Characteristics of Soil.
- D. Follow the latest edition of the above references.

1.4 DEFINITIONS

- A. Rock Excavation.

Excavation of naturally occurring deposits of limestone, sandstone, shale or other indigenous rock occurring as bedrock, rock ledges, outcroppings, or boulders 1 cu yd or larger in volume necessitating removal by the use of systematic drilling, expansive jacks, or backhoe mounted pneumatic hole punchers or rock breakers.

- B. Unsuitable Materials

Material commonly classified as slag, cinders, trash, debris and rubble; organic or contaminated soil and material; asphalt and concrete pavements (including aggregate sub-base); sidewalks and curbs; concrete slabs concrete or masonry foundations; metal beams, bracing, and sheet piling; or similar.

PART 2 – PRODUCTS

2.1 GENERAL

- A. Pipe bedding and trench backfill material must conform to the requirements and gradation specified in Section 1003, Fine Aggregates (FA), or Section 1004, Course Aggregates (CA), of the SSRBC.

- B. Course Aggregate (CA) material classified, as Chert or Novaculite Gravels, or Slag from any source, are not permitted for use as bedding or backfill material.
- C. Fine Aggregate (FA) material classified as Silica Sand, Slag Sand from any source, or Construction Debris Sand, are not permitted for use as bedding or backfill material.
- D. All material must be dry and free of organic matter, clay, garbage, paper, wood or similar material, boulders or large particles of frozen material.

2.2 PIPE BEDDING

- A. Coarse aggregate (CA) material classified, as Crushed Limestone or Stone must conform to gradation CA-16 for water mains 16 inches in diameter or smaller, CA-11 for water mains larger then 16 inches in diameter, unless directed otherwise by the Commissioner.
- B. Fine aggregate (FA) material classified, as Clean Sand from lake or bank run deposits must conform to gradation FA 2 or FA 6 unless directed otherwise by the Commissioner.

2.3 BACKFILL MATERIAL

- A. Coarse aggregate (CA) material classified as Crushed Limestone or Stone must conform to gradation CA-16, unless directed otherwise by the Commissioner.
- B. Backfill around riser shaft shall be CA-6.

2.4 GEOTEXTILE FABRIC

- A. Geotextile fabric must be Fabric for Silt Filter Fence and must conform to the requirements of Section 1080.02 in the SSRBC.

PART 3 - EXECUTION

3.1 WORK AREA PREPARATION

- A. Existing Work Area Condition

All information on subsurface exploration available to the Department, if any, will be made available to the Contractor for examination. However, the Department in no way takes responsibility for, the interpretation, accuracy, or thoroughness of the information. It will be the responsibility of the Contractor to make such subsurface explorations as deemed necessary, to supplement information provided by the Department, at no additional cost to the Department.

Prior to excavating, thoroughly investigate the limits of the proposed trench to ascertain the existence and location of any underground structures, existing utilities or other items that might interfere with the pipe installation. Notify the Commissioner of any obstructions that will prevent the installation of the pipe or appurtenances as indicated on the Drawings.

B. Clearing Work Area

Before starting trench excavation, all obstructions, which must be removed or relocated, must be cleared. Pavement, curbs, walks, trees, shrubs, utility poles, and other structures, which are to be preserved, must be properly braced and protected. Unless otherwise shown or directed by the Commissioner, all trees and large shrubs must be preserved with minimal damage inflicted on the root structure. When required, small trees and shrubs may be removed and replaced with equivalent specimens if approved in advance by the Commissioner.

C. Segregation and Disposal of Soil Material

1. Topsoil suitable for final grading and landscaping, and excavated material suitable for backfilling, as described in Section 02920 – Landscape Restoration, may be stockpiled separately within the Work Area if approved by the Commissioner.
2. Surplus excavated material and excavated material unsuitable for backfilling, final grading, and landscaping, must be transported off of the Site and disposed of in disposal areas obtained by the Contractor and approved by the Commissioner.

D. Pavement Removal

1. The Contractor must saw cut all concrete and asphalt pavements to their full depth prior to breaking and removing the pavement. On pavements consisting of an asphalt overlay on a concrete base, the Commissioner reserves the right to order the removal of up to 3 additional inches (75 mm) beyond the edge of the concrete base. This additional asphalt removal must be removed to a neat saw cut edge and will be considered incidental to the Work.
2. Utilizing drop weight equipment for the purpose of breaking the pavement is not permitted.

E. Protection or Removal of Existing Trees

Comply with CDOT Specifications Chapter 4, "Excavation Pavement Removal" for protection of trees, shrubs, and other improvements.

F. Excavations Over 12-feet Deep

Comply with CDOT Specifications Chapter 4, "Excavation Pavement Removal" for trenches over 12-feet deep.

G. Excavating Over or Adjacent to Existing Utilities

The Contractor must ascertain for himself the locations of all existing utilities in the vicinity of the Work Area and take care to protect and prevent damage to such utilities from his operations under this Contract. When performing Work adjacent to existing utilities located outside of the Neat Lines of the excavation or structure to be constructed

under this Contract, the Contractor must provide protection, and associated repairs if damaged by his operations, at his own expense and cooperate with the City and utility company or other party owning or operating the utility.

H. Erosion Control

Install geotextile fabric under each storm inlet, catch basin and sewer manhole cover to prohibit dirt, debris and backfill material from entering the sewer system, but to permit drainage. The geotextile fabric is to be maintained until restoration is completed. After restoration is completed, remove the geotextile fabric.

3.2 SHORING AND SHEETING

A. General

The Contractor must follow all applicable requirements of Federal, State and Local regulations applicable to underpinning, shoring of excavations, and other work affecting adjoining property and the safety of workers. The Contractor must shore up, brace, underpin, secure or protect, as necessary, all foundations and other parts of existing structures or property adjacent to, adjoining and in the vicinity of the Work which may be affected by the excavations or other operations associated with the Work to be performed under this Contract. The Contractor is responsible for posting and issuing all notices required to inform adjacent or adjoining property owners or other parties and such notice or notices must be served in sufficient time as not to delay the progress of the Work under this Contract.

B. Protection of the Work

All excavations must be properly shored, sheeted, and braced to facilitate safe working conditions, to prevent shifting of material, to prevent damage to structures or other work, and to avoid delay to the Work and be conducted in conformance with all applicable safety and environmental health requirements. Arrange bracing so as not to place any strain on portions of completed Work until construction and placement of structures and/or backfill has proceeded to the point to provide ample strength and support.

1. Where sheeting is used, the design, methods of installation, and adequacy of the sheeting and supports are the responsibility of the Contractor.
2. The Commissioner may order any or all sheeting or bracing to be left in place, whether such sheeting or bracing was shown on the drawings, placed at the Commissioner's direction or otherwise. Sheeting left in place must be cut off at the elevation ordered; such cutoffs must be at least 36-inches below the final ground surface and a minimum of 18-inches above the top of the pipe. Bracing to remain in place must be driven up tight.
3. The right of the Commissioner to order sheeting and bracing left in place will not be construed as creating any obligation on the Commissioner's part to issue such orders.

3.3 EXCAVATION

A. Trench Excavation (Open Cut)

1. The width of the trenches must provide adequate space for workers to place and join the pipe properly, and must be kept to the minimum practical width. Unless otherwise approved by the Commissioner, the total clear width of the trench at the level of the top of the pipe and at grade must be at the Neat Lines as detailed on the Drawings.
2. The Contractor must excavate a minimum of 6-inches below the bottom of the pipe unless otherwise shown, specified, or directed, so that bedding material can be placed in the bottom of the trench and shaped to provide a continuous firm bearing for the pipe barrel. Bell holes must be provided for proper make-up of the joints.
3. The open excavated trench preceding the pipe laying operation and the unfilled trench with pipe in place must be kept to a minimum length causing the least disturbance. The maximum length of open trench must not exceed 300-feet unless otherwise directed by the Commissioner. Comply with Article 4G, CDOT Specifications, for other trench opening length requirements within the public right-of-way.
4. Excavation in Arterial Streets. Comply with Article 4C, CDOT Specifications, for protection requirements when working within arterial streets.

B. Rock Excavation (open cut)

1. Whenever rock, stone, masonry or other hard, unyielding material is encountered at or above the required trench bottom elevation, remove it to provide a clearance of no less than 6-inches below and on each side of pipes and associated fittings, valves and other appurtenances. Backfill the over excavated area with granular bedding material.
2. Removal of Rock by blasting or by use of a drop hammer is Not Permitted under this contract.

C. Trench Excavation (Short Tunnel Construction)

In some instances, trees, fire hydrants, sidewalks, and other obstructions may be encountered, the proximity of which may be a hindrance to open cut excavation. In such cases, the Contractor must excavate by means of short tunnels in order to protect such obstructions against damage. Short tunnel work will be considered incidental to the construction and no additional payment will be allowed.

D. Additional Trench Excavation

If the soils encountered at the elevations specified are not suitable, or it is determined necessary to go to an additional width and depth, or required to fill designated areas for work done under Section 02320 - Special Soils Excavation

and Disposal, the excavation must be carried to such additional width and/or depth and must fill such excavated areas with approved backfill material as required or directed by the Commissioner.

E. Unauthorized Excavation

Wherever the excavation is carried beyond or below the lines and grades shown on the Drawings all such excavated space must be refilled with select fill materials and in such manner as may be directed in order to insure the stability of all affected structures. Beneath all structures, space excavated without authority must be refilled by the Contractor with approved backfill materials and will be considered incidental to the construction and no additional payment will be allowed.

F. Trenching Across or Over Existing Excavations or Utility Trenches

In the event that the trench passes over or through a previous excavation, carefully compact and stabilize the bottom of the new trench or excavation to a density equal to or greater than 95% of the maximum dry density as determined by ASTM D1557. Perform this compaction carefully to avoid damaging the existing utility or structure.

G. Special Excavation

Remove unsuitable materials to provide a 2-foot minimum horizontal and vertical clearance around water mains or related structures as applicable, unless otherwise directed by the Commissioner.

3.4 PLACEMENT OF PIPE BEDDING

A. Pipe Bedding

1. Pipe laid in trenches must be bedded in accordance with the details shown on the Drawings. Bedding material must consist of compacted; well-graded crushed stone fill material as shown and as specified, or as directed by the Commissioner.
2. Existing underground structures, tunnels, conduits, and pipes crossing the excavation must be bedded with compacted sand. Bedding material must be placed under and around each existing underground structure, tunnel, conduit, or pipe as required to stabilize the excavation.
3. At each joint, enough depth and width must be provided around the pipe so that joints can be properly made up.

B. Bedding Placement – Vaults and Structures

Pipe bedding beneath pre-cast bases, cast-in-place bases and other foundations must be 6-inches in thickness and thoroughly compacted in place to not less than 95% of the maximum dry density as determined by ASTM D1557.

C. Bedding and Backfill for Short Tunnel

Pipes placed in short tunnels must be bedded in sand. The annular space between the pipe and undisturbed earth must be completely filled with compacted sand fill material. Pipelines in short tunnels must be supported to permit the placement of backfill.

3.5 BACKFILLING EXCAVATIONS

A. General

1. All excavations must be backfilled to the grades shown on the Drawings or as directed by the Commissioner. For areas to be covered by topsoil, backfill must be left 4-inches below the finished grade or as shown on the Drawings, or directed by the Commissioner. All backfilling must be done as soon as possible after water main piping has been installed and inspected, and as soon as mortar for masonry or thrust blocks have sufficiently set, unless directed otherwise by the Commissioner.
2. Crushed stone fill material must be used for trench and structure backfill and other areas as shown, specified, or ordered by the Commissioner.
3. Unsuitable material and material rejected by the Commissioner must immediately be removed from the Site and disposed of by the Contractor at his expense.
4. Construction equipment used to backfill against and over cast-in-lace concrete structures must not be permitted to travel over these structures until the designated concrete strength has been obtained, as verified by concrete test cylinders. In special cases where conditions warrant, as determined by the Commissioner, the above restriction may be modified if the concrete has gained sufficient strength, as determined from test cylinders, to satisfy design requirements for the removal of forms and the application of load.

B. BACKFILL PROCEDURE

1. Crushed stone fill material must be used for backfill where roadways, driveways, sidewalks, or other pavements are to be placed on the backfill or where the edge of the trench excavation is 5-feet or less from any county or state highway, any city or village street pavement, and in trenches crossing pavements or sidewalks for a distance beyond the edge of the pavement or sidewalk equal to the depth of the trench. Crushed stone fill material must be used as backfill in trenches parallel to roadways, driveways, or other pavements from the top of the bedding to a depth below the ground surface equal to the distance between the inner face of the trench and the closest edge of the pavement.
2. Where pavements and appurtenances for streets are to be placed over the trenches and riser shafts or where riser shafts are in the vicinity of future retaining walls the backfill material must be placed in uniform layers

not greater than 6-inches in thickness and compacted in place. Each layer must be compacted to or not less than 95% of the maximum dry density as determined by ASTM D1557.

3. Excavated material can be re-used as backfill only if directed or approved by the Commissioner.
4. Where railroad tracks or pavements for highways are to be placed over trenches, the backfill must be placed in conformance with the standards set forth by the respective agency having jurisdiction over the railroad or highway.
5. Trench backfilling work must be done in such a way so as to prevent damage to any pipe, utility, or structure.

C. BACKFILL UNDER A SUPPORTED WATER MAIN

1. Backfill the open trench under the water main and 10-feet beyond the water main sides with approved material up to a level of 1-foot below the invert of the supported water main. The backfill material must be placed in layers of 12-inches with each layer mechanically compacted to 95% of the maximum dry density as determined by ASTM D1557.
2. Place pipe bedding material from 1-foot below the water main invert to the water main centerline and compact to achieve 95% of the maximum dry density as determined by ASTM D1557.
3. Remove the water main pipe support systems, supporting beams, and pipe support straps; and cut-off and remove soldier piles to a level at least 4-feet below finished grade.
4. The water main pipe must be inspected for leakage and joint integrity and repaired if necessary, prior to backfilling above the water main.
5. After approval by the Engineer, continue backfilling with approved material. Backfill the open trench up to the required sub grade level. The backfill material must be placed in layers of 12-inches with each layer mechanically compacted to 95% of the maximum dry density as determined by ASTM D1557.

1.6 FINISH GRADING

Finish grading will be performed by others.

END OF SECTION 02315

SECTION 02510
DUCTILE IRON PIPE AND FITTINGS

1.0 GENERAL

1.1 DESCRIPTION OF WORK

This section includes requirements for the installation of ductile iron water pipe and fittings as shown on the Drawings and specified here.

1.2 WORK SPECIFIED ELSEWHERE

- A. Section 02080 – Fire Hydrants
- B. Section 02082 – Valves
- C. Section 02240 – Dewatering Excavations
- D. Section 02315 – Excavation, Trenching and Backfilling
- E. Section 02320 – Special Soils Excavation and Disposal
- F. Section 02280 – Repair and Adjustment of Sewer Pipe and Structure
- G. Section 02516 – Thrust Restraint for Water Main Pipe
- H. Section 02518 – Disinfection and Testing of Water Mains
- I. Section 02535 – Valve Basins, Manholes and Catch Basins

1.3 REFERENCES

- A. AWWA C104 – Cement Mortar Lining for Ductile Iron Pipe and Fittings.
- B. AWWA C105 – Polyethylene Encasement for Ductile-Iron Pipe Systems.
- C. AWWA C110 - Ductile-Iron and Gray-Iron Fittings.
- D. AWWA C111 - Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings.
- E. AWWA C115 – Flanged Ductile-Iron Pipe with Ductile-Iron or Gray-Iron Threaded Flanges
- F. AWWA C116 – Protective Fusion-Bonded Epoxy Coatings Int. and Ext. Surf. Ductile-Iron/Gray-Iron Fittings.
- G. AWWA C150 – Thickness Design of Ductile-Iron Pipe.
- H. AWWA C151 - Ductile Iron Pipe, Centrifugally Cast.
- I. AWWA C153 – Ductile Iron Compact Fittings for Water Service.
- J. ASME/ANSI B16.1 - Flanges and Flanged Fittings.
- K. ANSI B16.21 - Metallic Gaskets for Pipe Flanges.
- L. ASME B18.2.1 – Square and Hex Bolts and Screws
- M. ASME B18.2.2 – Square and Hex Nuts
- N. ASTM A536 - Ductile Iron Castings.
- O. ASTM C564 - Rubber Gaskets for Cast Iron Soil Pipe and Fittings.
- P. ASTM A307 - Carbon Steel Bolts and Studs.
- Q. Follow the latest edition of the above references.

1.4 SUBMITTALS

- A. Before ordering pipe and fittings for the Work, the Contractor, must submit to the Commissioner, catalog cuts as available along with manufacture's certification that material being furnished meets the requirements of these specifications.

1.5 QUALITY ASSURANCE

- A. The Work performed on joining all pipe and fittings, must be performed by a plumber licensed in the State of Illinois or the City. This Work must include, but not be limited to, joining all pipe and fittings, installing joint gaskets, assembling all joints, installing continuity wedges, and tightening all gland nuts and bolts, as applicable for the installation.

1.6 NOTIFICATION AND LIMITATIONS OF WATER MAIN SHUT DOWNS

- A. Whenever an existing water main or a section thereof is to be shut down during the course of construction, every individual consumer must be notified at least seventy-two (72) hours prior to the shut down. The Contractor must never operate, under any circumstances, an existing valve for a shut down or other purpose without first notifying and obtaining approval from the Commissioner.
- B. The time for a consumer shut down must not exceed eight (8) hours. Absolutely no shut downs will be permitted before 8:00 AM without approval from the Commissioner.
- C. In case of emergency shut downs, the Contractor must notify customers immediately. Notification may be verbal on a door-to-door basis. However, if a consumer cannot be contacted, a written notice must be placed at the property site showing all pertinent information regarding the shut down. The notice must show a telephone number the consumer may call for information or to express any problem that the consumer may have with the shut down.
- D. If a consumer cannot withstand a planned shut down due to a dialysis machine being present or other medical reason, the Commissioner must be notified immediately.
- E. All valves 16 inches in diameter and larger must be operated only by personnel of the Department. Notify the Commissioner seventy-two (72) hours prior to the need for operation of the valve.

2.0 PRODUCTS

2.1 DUCTILE IRON PIPE

- A. Ductile iron pipe must conform to the requirements of AWWA C151 and with the additions or substitutions specified in this Section.
- B. Bells must be designed to provide a watertight joint without any leakage and be capable of withstanding pressures exceeding those that will rupture pipe of this class and thickness without requiring additional jointing material.
- C. In pipe 16 inches in diameter and smaller, the joint must be such that electrical current will pass from one pipe to another. This may be accomplished in a manner, which is standard for the type of joint supplied by a particular manufacturer. No lead tip gaskets are allowed.

- D. All pipe must be manufactured so that where a cut is made at any point along the barrel, the cut end will fit properly into a standard mechanical joint bell and be drip tight at hydrostatic test pressure.
- E. Exterior of pipe must be coated with a petroleum asphaltic material in conformance with AWWA C110, Section 10-10. Interior of pipe must be cement lined in accordance with AWWA C104.
- F. Pipe thickness and classes must be as follows:

| <u>Pipe Size (mm)</u> | <u>Nominal Wall Thickness (mm)</u> | <u>Special Thickness Class</u> |
|-----------------------|------------------------------------|--------------------------------|
| 3" | 0.34" | 54 |
| 4" | 0.38" | 55 |
| 6" | 0.40" | 55 |
| 8" | 0.45" | 56 |
| 10" | 0.47" | 56 |
| 12" | 0.49" | 56 |
| 14" | 0.48" | 55 |
| 16" | 0.46" | 54 |
| 18" | 0.44" | 53 |
| 20" | 0.45" | 53 |
| 24" | 0.50" | 54 |
| 30" | 0.47" | 52 |
| 36" | 0.53" | 52 |
| 42" | 0.59" | 52 |
| 48" | 0.65" | 52 |
| 54" | 0.73" | 52 |
| 60" | 0.77" | 52 |

2.2 JOINTS

A. Restrained joints, as shown on the Drawings, specified, or directed by the Commissioner, must be one of the following types:

1. Mechanical joint pipe with mechanical joint restraint glands. Mechanical joints must conform to AWWA C110. Gaskets must conform to Section 2.4 of this specification.
2. Super-Lock as manufactured by CLOW Water Systems Company, Flex-Ring as manufactured by American Ductile Iron Pipe, Lok-Ring as manufactured by American Ductile Iron Pipe, TRFLEX as manufactured by United States Pipe and Foundry Company.

B. Mechanical Joint Restraint Glands

Glands to restrain the pipe from movement due to thrust are to be designed for use with the standardized mechanical joint bell conforming to AWWA C110 and AWWA C153. Restraint is to be incorporated into the design of the gland.

Restraint is to be accomplished by the use of multiple, wedge style restraints. Proper actuation of the wedges is to be ensured with torque limiting twist off nuts.

Glands 3-inch through 16-inch are to be pressure rated at 350 psi; glands 18-inch through 48-inch are to be rated at 250 psi.

The gland body and restraint components are to be made from minimum ASTM A536, 60-42-10 ductile iron. Ductile iron wedges are to be heat-treated with a range of 370 to 470 BHN.

The joint is to be capable of full deflection during assembly and joint deflection after assembly

Provide glands with minimum weights and number of wedges per the following table:

| <u>Nominal Pipe Size in inches</u> | <u>Number of Wedges</u> | <u>Minimum Weight in lbs</u> |
|--|-----------------------------|----------------------------------|
| 3 | 2 | 6.1 |
| 4 | 2 | 7.2 |
| 6 | 3 | 12.0 |
| 8 | 4 | 16.0 |
| 10 | 6 | 24.2 |
| 12 | 8 | 32.7) |
| 14 | 10 | 49.7 |
| 16 | 12 | 58.2 |
| 18 | 12 | 62.2 |
| 20 | 14 | 74.8 |
| 24 | 16 | 138.8 |
| 30 | 20 | 195.4 |
| 36 | 24 | 256.5 |
| 42 | 28 | 510.2 |
| 48 | 32 | 712.0 |

Retainer glands are not acceptable.

C. Flanged joints, when shown on the Drawings, specified, or directed by the Commissioner, must conform to the following:

1. Flanged joints must conform to AWWA C115. Flanges must be the long hub type, screwed on the threaded end of the pipe in the shop. There must be no leakage through the pipe threads. The flanges must be designed to prevent corrosion of the threads from the outside.
2. Flanges must be drilled according to the requirements of ANSI/ASME B16.1, Class 125 unless special drilling is called for on the Drawings, specified, or directed by the Commissioner. Bolt holes must be equally spaced, drilled smooth and true. When stud bolts are shown on the Drawings, specified, or directed by the Commissioner, the flanges must be drilled and tapped for studs.
3. The face of the screwed-on flange and plain-end of the pipe must be accurately refaced together, at right angles to the pipe axis. After facing

and drilling, the face of the screwed-on flange must immediately be covered with an appropriate rust-preventive coating.

4. Flanged joints must be made with either bolts and nuts or stud bolts with a nut on each end. Bolts, stud bolts, and nuts must meet the requirements of ASTM A307, Grade B. Bolts and stud bolts must conform to ANSI/ASME B18.2.1. Nuts must conform to ANSI/ASME B18.2.2. All bolts, stud bolts, and nuts must be primed with bitumastic paint after the bolts and nuts have been installed and tightened.
5. Gaskets must conform to Section 2.4 of this specification.

2.3 FITTINGS

- A. Fittings to be furnished and installed as specified or shown on the Drawings must be mechanical joint, ductile iron in accordance with AWWA C110. Laying length of mechanical joint castings must be as shown in AWWA C110. Wall thickness and allowable variation in the thickness of mechanical joint castings must conform to AWWA C110 and have a 250-pounds per square inch pressure rating.
- B. Compact fittings are not to be used unless otherwise approved by the Commissioner.
- C. Plain ends of mechanical joint fittings must be beveled and gauged to properly seat in push-on joint bells.
- D. The fittings must be smooth and free from defects of every nature that would make them unfit for the use that they were intended. Plugging of fittings is not allowed. Repairing of defects by welding will be allowed if such repairs will not adversely affect the serviceability of the fittings or their ability to meet the strength requirements of the referenced AWWA standards.
- E. Exterior of castings must be coated with a petroleum asphaltic material in conformance with Section 4.3 of AWWA C110. Interiors must be cement-mortar lined.
- F. Flanged fittings must conform to AWWA C110, and have 150-pounds per square inch pressure rating.

2.4 GASKETS

- A. All gaskets for pipe, fittings and appurtenances must be vulcanized natural or vulcanized synthetic rubber, non-porous, free of foreign materials and visible defects. Recycled rubber may not be used.
- B. When soil conditions do not permit the use of natural or synthetic rubber gaskets and when directed by the Commissioner, all gaskets for pipe, fittings and appurtenances must be Nitrile (acrylonitrile butadiene), nonporous, free of foreign materials and visible defects.

- C. Gaskets for flanged joints must be of the ring type meeting the requirements of ANSI Standard B16.21. Gaskets must be made by the Crane Company, Garlock Packing Company, U.S. Rubber Company, or approved equal. Gaskets must be 1/16-inch thick.
- D. Gaskets must be stored in a cool place and protected from light, heat, oil, or grease until installed. Any gasket showing signs of cracking, weathering, abrasion or other deterioration will be rejected.

2.5 POLYETHYLENE ENCASEMENT

- A. Polyethylene encasement material must be 4-mil, cross-laminated, high-density polyethylene tubing. The tubing must comply with AWWA C105.

2.6 TRANSITION SLEEVES

- A. Transition sleeves for pipe 16 inches in diameter and smaller must be Dresser Style 253 Modular Cast Couplings, Smith Blair Type 441 Cast Transition Couplings, or Ford Style FC2A Transition Couplings.
- B. Transition sleeves must be designed to join class "B" pit cast iron pipe to AWWA C111/C151 standard ductile iron pipe. They must provide for pipe misalignment and settlement deflection and make a leak proof non-soldered joint, which allows for limited line movement due to expansion and contraction. Design couplings for a minimum rated working pressure of 150 pounds per square inch.
- C. Transition sleeves must be constructed of ductile iron conforming to ASTM A536. Ends must have a smooth inside taper for uniform gasket seating. The follower flanges must be ductile iron ASTM A536.
- D. Transition sleeves must be shop coated inside and outside with fusion bonded epoxy coating to inhibit corrosion.
- E. Gaskets must be of molded rubber conforming to ASTM C564 for potable water service.
- F. Bolts and nuts must be 5/8-inch in size and must be Grade 304L stainless steel, annealed. Nuts must be Teflon coated to prevent galling during storage.
- G. Transition sleeves must have the following range capabilities through interchangeability of gasket and flanges:

| <u>Nominal Size</u> | <u>O.D. Range Required</u> |
|---------------------|----------------------------|
| 3" | 3.80" - 3.96" |
| 4 | 4.80" - 5.10" |
| 6" | 6.90" - 7.22" |
| 8" | 9.05" - 9.45" |
| 10" | 11.10" - 11.60" |
| 12" | 13.20" - 13.50" |
| 14" | 15.30" - 15.50" |
| 16" | 17.40" - 17.80" |

- H. Each transition sleeve 16 inches in diameter and smaller must come equipped with four "electrical continuity brackets" constructed as shown in Appendix A.

3.0 EXECUTION

3.1 INSTALLATION

- A. All ductile iron pipe, fittings, and appurtenances must be installed in accordance with the manufacturer's recommendations and requirements.
- B. All pipe, fittings, and accessories must be delivered, unloaded, strung, and laid as specified here.
- C. The water mains must be laid with covers as shown on the Drawings, as specified, or as directed by the Commissioner. The pipes must be laid true to line and grade.
- D. Fittings as specified must be used where shown on the drawings and where grade or alignment changes require offsets greater than those recommended by the pipe manufacturer.

3.2 TRANSPORTATION AND DELIVERY

- A. Every precaution must be taken to prevent damage to the pipe during transportation and delivery. Extreme care must be taken in loading and unloading the pipe and fittings. Such work must be done slowly with skids or suitable power equipment and the pipe must be under complete control at all times. Under no conditions may the pipe be dropped, bumped, dragged, pushed, or moved in any way that will cause damage to the pipe. When handling the pipe with a crane, a suitable pipe hook or rope sling around the pipe must be used. Under no condition may the sling be allowed to pass through the pipe unless adequate measures are taken to prevent damage to the pipe ends and lining.
- B. If in the process of transportation, handling, or installation, any pipe or fitting is damaged, such pipe or fitting must be replaced by the Contractor and be considered incidental to the construction and no additional payment will be allowed.
- C. The Contractor must prevent the pipe from rolling.

3.3 PREPARATION FOR LAYING PIPE

- A. Materials, coatings, and linings must be as specified and as shown. Water mains and services must be installed where shown and as specified. Installation must be in accordance with standards as recommended by the pipe manufacturer, and as specified here.
- B. Proper and suitable tools and appliances for the safe and convenient cutting, handling, and laying of the pipe and fittings must be used.
- C. Before lying, all pipe and fittings must be thoroughly examined for defects and no piece may be installed which is known to be defective. If defects are discovered

after pipe or fittings have been installed, the Contractor must remove the defective pipe or fitting and replace it with a sound one in a satisfactory manner.

- D. The pipe and fittings must be thoroughly cleaned before they are laid and must be kept clean until they are accepted in the finished work. Care must be exercised to avoid leaving bits of wood, dirt, rock and other foreign particles in the pipe. If any such materials are discovered before the final acceptance of the work, they must be removed and the pipe and fittings replaced, if necessary. All pipes must be kept absolutely clean during construction and must be stopped off with night plugs at the end of each day's work. Exposed ends of uncompleted lines and existing water mains and services cut and not abandoned must be capped or otherwise temporarily sealed at all times when pipe laying is not actually in progress.
- E. When cutting ductile iron pipe, it must be neatly cut perpendicular to the axis of the pipe without damaging the pipe lining or coating.

3.4 LAYING WATER MAIN PIPE

- A. All pipelines must be laid in trench excavations on bedding or other foundations, as shown, specified, and ordered by the Commissioner. The pipe must be properly secured against movement and pipe joints must be made in the excavation as required. Pipes must have solid bearing throughout their entire length.
- B. Where pipe thrust occurs, fittings must be anchored or restrained as shown, specified per Section 02516 – Thrust Restraint or as specified by the Commissioner.
- C. Pipe laying will be permitted only in dry trenches having a stable bottom. Groundwater or water from other sources must be removed as per Section 02240 – Dewatering Excavations. If the trench bottom is unsuitable for pipe foundation, the kind of stabilization to be utilized will be ordered in writing.
- D. If, in the opinion of the Commissioner, the Contractor has failed to obtain an absolutely dry trench bottom by sufficient use of all known methods of trench dewatering, the Commissioner may then order the Contractor to excavate below the intended grade and to place sufficient sub-grade material over the trench bottom as per Section 02315 – Excavation, Trenching and Backfilling.
- E. The Contractor must also take such required precautions as to prevent flotation of the pipeline.

3.5 ASSEMBLY OF MECHANICAL JOINTS

- A. Thoroughly brush the surfaces with which the rubber gasket comes in contact with a wire brush just prior to assembly of the joint. Brush lubricant over the gasket and the plain end just prior to installation. In making up mechanical joints, the spigot must be centered in the bell.
- B. The gasket and gland must be placed in position, the bolts inserted, and the nuts tightened finger tight. The nuts must be tightened by means of a torque wrench in such a manner that the gland must be brought up evenly into the joint.

C. The following range of bolt torques must be applied:

| <u>Bolt Size in inches</u> | <u>Range of Torque in ft.-lbs</u> |
|----------------------------|-----------------------------------|
| 5/8 | 45-60 |
| 3/4 | 75-90 |
| 1 | 85-100 |
| 1 1/4 | 105-120 |

D. If effective sealing is not obtained at the maximum torque listed above, the joint must be disassembled, thoroughly cleaned and reassembled.

3.6 TEMPORARY BULKHEADS

At ends of Contract sections where adjoining water mains or structures have not been completed and are not ready to be connected, temporary bulkheads approved by the Commissioner must be installed.

3.7 SHORT TUNNEL CONSTRUCTION

Pipes to be placed in short tunnels must be jointed prior to being pulled into position. Pipe must be pushed or pulled into position in a manner arranged to keep joints tight and to prevent deflection.

3.8 ENCASING DUCTILE IRON PIPE IN POLYETHYLENE

All cast and ductile iron pipe and fittings must be encased in polyethylene tubing. The tubing must be installed as per AWWA C105.

3.9 REMOVAL OF UNFIT CASTINGS

Remove all unfit castings from the Work area and replace them with fittings that conform to the Specifications.

3.10 DEPTH OF PIPE COVER

Unless otherwise shown on the Plans, or directed by the Commissioner, all water mains and services must be installed so a minimum pipe cover is provided as described in the following table:

| <u>Size of Pipe in inches</u> | <u>Standard Cover and Tolerance</u> |
|-------------------------------|---|
| 3/4" to 3" | 5'-6" ± 3" |
| 4" | 5'-6" ± 3" |
| 6" | 5'-6" ± 3" |
| 8" | 5'-3" ± 3" |
| 12" | 5'-0" ± 2" |
| 16" | 4'-6" ± 2" |
| 24" | 4'-0" ± 1" |
| 30" | 3'-6" (depends on the field conditions) |
| 36" | 3'-6" (depends on the field conditions) |
| 42" | 3'-6" (depends on the field conditions) |
| 48" | 3'-0" (depends on the field conditions) |
| 54" | 3'-0" (depends on the field conditions) |
| 60" | 3'-0" (depends on the field conditions) |

3.11 ABANDONMENT OF EXISTING WATER MAINS

All openings on abandoned pipe or conduit are to be sealed with a wood or concrete mortar plug of a minimum of one (1) foot in length within the pipe.

END OF SECTION 02510

SECTION 02512

WATER SERVICES 2-INCHES AND SMALLER

1.0 GENERAL

1.1 DESCRIPTION OF WORK

This section includes the requirements for the installation of water services 2-inch and smaller in diameter as shown on the Drawings and specified here.

1.2 WORK SPECIFIED ELSEWHERE

- A. Section 02240 – Dewatering Excavations
- B. Section 02315 – Excavation, Trenching and Backfilling
- C. Section 02510 – Ductile Iron Pipe and Fittings
- D. Section 02440 – Horizontal Directional Drilling

1.3 REFERENCES

- A. City of Chicago Plumbing Code.
- B. ASTM B62 - Composition of Bronze or Ounce Metal Castings.
- C. ASTM B63 - Resistivity of Metallically Conducting Resistance and Contact Materials.
- D. ASTM B88 - Seamless Copper Water Tube.
- E. AWWA C800 - Underground Service Line Valves and Fittings.
- F. Follow the latest edition of the above references.

1.4 SUBMITTALS

- A. The Contractor must provide the Commissioner, prior to the use of any materials in this section, certified test and inspection reports from an approved testing laboratory, or at the point of manufacture, that all materials and/or equipment to be utilized in this work are in accordance with the Contract Documents.
- B. All tests as specified are to be performed at the point of manufacture. The cost of testing must be considered incidental to the construction and no additional payment will be allowed.
- C. Each individual unit must be pressure tested and guaranteed for service at pressures minimally equal to pressure ratings specified for design purposes in AWWA C800. The Contractor must provide an affidavit that materials furnished comply with this standard.

1.5 QUALITY ASSURANCE

The Work necessary for the installation of new, or modification to existing services, must be performed by a plumber licensed in the State of Illinois or the City. This Work will include, but not be limited to, tapping the main; installing corporation cocks; cutting and flaring the ends of copper tubing; installing copper tubing, fittings, and roundway (curb stop) valves; and connecting new service tubing to existing services, as specified herein.

2.0 PRODUCTS

2.1 COPPER TUBING

Copper tubing must be Type "K" (soft) copper tubing, seamless annealed conforming to ASTM B88, for 1-inch, 1½-inch, and 2-inch meter service connections and reconnections.

2.2 ROUNDWAY (CURB STOP)

- A. All roundways must be ball valve type with copper flare connections on both ends and Minneapolis type curb box threads. The roundway must conform to requirements of AWWA C800. Minneapolis thread size for 1-inch roundway will be 1½-inches; 1½-inch and 2-inch roundways will be 2-inches.
- B. Roundways must be composed of bronze or ounce metal alloy conforming to the chemical and physical requirements of ASTM B62 and AWWA C800. Castings must be high grade, smooth, and free from sand, blowholes, shrinkage, or other foundry defects. No roundway can be plugged or filled in any manner. All threads must be cut full and without defects.
- C. Furnish A.Y. McDonald 6104, Ford Meter Box B22-M, or Mueller B-25154 roundways.

2.3 SHUT-OFF BOX

- A. The shut-off box (See Appendix A) must be a plastic two (2) piece, sliding friction type design, with a female threaded bottom end. A threaded bushing must be bonded to the tube, so it can be screwed onto a shut-off valve. The objects must conform to the applicable dimensions as shown in Appendix A. The total length of the plastic shut-off box must be a minimum 72-inches when fully extended. The material must be rigid ABS plastic and must conform to the basic requirement as the following:
 - 1. IZOD Impact strength: Minimum 6.0-foot-pound per inch.
 - 2. Deflection temperature under load: Minimum 170° F under 264 pounds per square inch.
 - 3. Tensile strength at 73° F Minimum 5,900 pounds per square inch.
- B. The cast iron lid and rim must be bonded to the plastic of the top section of the box. The lid must have a removable pentagon head bolt for locking the lid into the rim. A lid without this type of locking system will not be acceptable. The letters "WATER" must be cast on the top of the lid. Dimensions of the frame and cover must conform to Appendix A.

2.4 BRASS CORPORATION COCKS

- A. Corporation cocks for water service connections must be plug type conforming to ASTM B62 and AWWA C800. Corporation cocks, when ordered complete, must

be furnished with a 1/8-bend tailpiece coupling, inlet end swivel nut with female flare copper thread and gasket, and outlet end copper flare connection. Furnish A.Y. McDonald 4701L corporation stops with 4750S couplings or approved equal.

- B. 1-inch corporation cocks used for test taps must be ordered without gasket, coupling nut and tailpiece. Furnish A. Y. McDonald 3120C corporation cocks or approved equal, which have special outlet threads that fit Department equipment.

2-inch corporation cocks used for test taps must be ordered without gasket, coupling nut, and tailpiece. Furnish A.Y. McDonald 3131 corporation cocks or approved equal.

- C. Corporation cocks must be composed of composition bronze or ounce metal alloy conforming to the chemical and physical requirements of standard specifications ASTM B62 and AWWA C800. Castings must be high grade, smooth, and free from sand, blowholes, shrinkage, or other foundry defects. Castings must not be plugged or filled in any manner. All threads must be cut full and without defects. All gaskets, screws, or other parts necessary for proper usage of the corporation stops must be supplied.

2.5 COMPRESSION COUPLINGS

- A. Provide compression couplings to join lead or iron water services to brass fittings and copper water services. Couplings must be composed of composition bronze or ounce metal alloy conforming to the chemical and physical requirements of Standard Specifications ASTM B62 and AWWA C800, except for the applicable clamp or setscrew and gasket material. Castings must be high grade, smooth, and free from sand, blowholes, shrinkage, or other foundry defects. No coupling may be plugged or filled in any manner. All threads must be cut full and without defects.

- B. Couplings must be equipped with clamps or setscrews to engage the pipe and act as locking devices. Screws must be of silicone bronze or stainless steel material.

- C. Furnish the appropriate number of compression couplings listed below needed to connect the existing water services to the brass fittings or copper water services:

1. 1-inch strong lead to 1-inch copper flare.
2. 1 ½-inch extra strong lead to 1 ½-inch copper pack fitting.
3. 2-inch extra strong lead to 2-inch copper pack fitting.
4. 1-inch strong lead to 1-inch MIP thread.
5. 1 ½-inch extra strong lead to 1 ½-inch MIP thread.
6. 2-inch extra strong lead to 2-inch MIP thread.
7. 1-inch strong lead to 1-inch strong lead.
8. 1-inch extra strong lead to 1-inch copper flare.
9. 1-inch extra strong lead to 1-inch MIP thread.
10. ¾-inch strong lead to ¾-inch FIP thread.
11. ¾-inch strong lead to ¾-inch strong lead.
12. ¾-inch iron pipe to ¾-inch FIP thread.
13. 5/8-inch strong lead to ¾-inch FIP thread.
14. ½-inch strong lead to ¾-inch MIP thread.

- D. Furnish couplings by Ford Meter Box (Lead-Pak and Pack Joint), A.Y. McDonald (Mac-Pak or Compression) or Mueller (Pack Joint).

2.6 BRASS AND COPPER PIPE FITTINGS AND COUPLINGS

- A. Fittings and couplings must be composed of composition bronze or ounce metal alloy conforming to the chemical and physical requirements of Standard Specifications ASTM B62 and AWWA C800. Castings must be high grade, smooth, and free from sand, blowholes, shrinkage, or other foundry defects. No coupling or fitting may be plugged or filled in any manner. All threads must be cut full and without defects.
- B. Furnish the appropriate number of brass and copper fittings and couplings listed below needed to connect the existing water services to the new main.
 - 1. 3/4-inch FIP X 1-inch flare.
 - 2. 1-inch FIP X 1-inch flare.
 - 3. 1 1/2-inch FIP X 1 1/2-inch flare.
 - 4. 2-inch FIP X 2-inch flare.
 - 5. 3/4-inch MIP X 1-inch flare.
 - 6. 1-inch MIP X 1-inch flare.
 - 7. 1 1/2-inch MIP X 1 1/2-inch flare.
 - 8. 2-inch MIP X 2-inch flare.
 - 9. 3/4-inch FIP X 1-inch MIP.
 - 10. Unions, 1-inch, 1 1/2-inch, 2-inch, three parts, flared both ends.
 - 11. Tube nuts, 1-inch, 1 1/2-inch, 2-inch.
- C. Furnish fittings and couplings by A.Y. McDonald, Ford Meter Box, or Mueller.

2.7 2-INCH COMBINATION AIR RELIEF VALVE ASSEMBLY

Where shown or specified, the Contractor must furnish 2-inch combination air relief assemblies. The 2-inch combination air relief assemblies must be Val-Matic Model 202 C or APCO Model 145C.

3.0 EXECUTION

3.1 ADJUSTMENT OF SHUT-OFF BOXES AND VALVE BOXES

- A. The Contractor is responsible for vertically adjusting existing water service shut-off boxes and valve boxes to the proper surface elevation as shown on Plans, or directed by Commissioner. The Contractor must obtain copies of information for water service pipe from the Department to verify and confirm the exact location of water shut-off boxes or valve boxes to be adjusted. The Contractor must notify the Department seventy-two (72) hours before the excavation of sidewalk or parkway commences to determine if the services are active and also to clarify any discrepancies with water service pipe plats and field survey.
- B. If a service is inactive, the Contractor must cut the top part of the box 36-inches below the proposed grade and backfill.

- C. If the service is active and the shut-off/valve box is made of plastic or other approved materials, the Contractor must excavate and vertically adjust the box to proposed grade. If the existing shut-off/valve box is made of cast iron, the top 36-inches of the box must be replaced with a length of plastic tubing sleeved over the existing shut-off/valve box. The cast iron rim must be bonded to the top of the plastic tubing. The materials and dimensions of the plastic tubing and cast iron rim must conform to the requirements as specified herein and shown in Appendix A for Plastic Shut-off Box-Type B.

3.2 DIRECT TAPPING OF DUCTILE IRON PIPE ENCASED IN POLYETHYLENE FILM

- A. Installation procedures must be one of these methods, as recommended by the Ductile Iron Pipe Research Association:
 - 1. Method 1: Apply two (2) or three (3) wraps of polyethylene adhesive tape completely around the pipe to cover the area where the tapping machine and chain will be mounted. After the tapping machine is mounted, install the corporation stop directly through the tape and polyethylene. After the direct tap is completed, inspect the entire circumferential area for damage and repair as needed.
 - 2. Method 2: Directly tap through the polyethylene film without applying a layer of tape on the encasement. Simply mount the tapping machine directly on the polyethylene encased pipe and install the corporation stop using normal tapping procedures. Once the direct service connection is completed, repair all polyethylene that may have been damaged during the procedure. Take special care to inspect the bottom of the encased pipe where the mounting chain has been in contact with the polyethylene.
 - 3. Method 3: Make an X-shaped cut in the polyethylene and temporarily fold back the film at the point where the corporation stop will be installed. Then mount the tapping machine over the exposed pipe surface and make the service tap. After the tap is made and the corporation installed, remove the tapping machine and repair the "X" shaped cut with polyethylene-compatible adhesive tape.
- B. Before backfilling. Inspect the polyethylene around the exposed circumferential area, particularly at the bottom where the mounting chain has been in contact with the polyethylene, to ensure that all damage is repaired.
- C. House Services. As an added safeguard against dissimilar metal corrosion at service connections to polyethylene-encased iron pipe, wrap the attendant corporation stop and a minimum clear distance of 3-feet of the copper service with polyethylene or a suitable dielectric tape.

3.3 TEST FOR CONTROL

The Contractor must test all services for flow. If the service has water flow, it must be connected to the new water main. Otherwise, the Contractor must terminate any services without water flow.

END OF SECTION 02512

Section 02516

THRUST RESTRAINT

1.0 GENERAL

1.1 DESCRIPTION OF WORK

This section includes the requirements for providing thrust restraint for the installation of water mains and services as shown on the Drawings and specified here.

1.2 WORK SPECIFIED ELSEWHERE

- A. Section 02080 – Fire Hydrants
- B. Section 02510 – Ductile Iron Pipe and Fittings
- C. Section 02512 – Concrete Pipe and Fittings

1.3 Design Requirements

Calculated thrust restraint must be based on the frictional force and bearing resistance between the pipe and the surrounding soil, with an allowance made for the polyethylene wrap on ductile iron pipe installations.

1.4 REFERENCES

- A. ANSI B1.1 - Unified Inch Screw Threads.
- B. ASTM A193 – Steel and Stainless Steel Bolting Materials
- C. ASTM A194 – Carbon and Alloy Steel Nuts for Bolts for High-Pressure or High-Temperature Service, or Both
- D. ASTM A325 - Heat Treated Structural Steel Bolts.
- E. ASTM A449 – Quenched and Tempered Steel Bolts and Nuts
- F. ASTM A536 - Ductile Iron Castings.
- G. ASTM A563 – Carbon and Alloy Steel Nuts
- H. ASTM A615 – Standard Specification for Deformed and plain Billet Steel Bars for Concrete Reinforcement.
- I. IDOT Standard Specifications for Road and Bridge Construction (SSRBC).
- J. Follow the latest edition of the above references.

2.0 PRODUCTS

2.1 DUCTILE IRON PIPE RESTRAINT

Mechanical joint thrust restraint glands must normally be used unless otherwise directed by the Commissioner. Where such glands cannot be used to provide sufficient thrust restraint, concrete thrust blocks must be used.

2.2 CONCRETE THRUST BLOCK RESTRAINT

All concrete used in the construction of thrust blocks must be Class SI of the SSRBC. All reinforcing steel used in the construction of thrust blocks must conform to the requirements of ASTM A615.

2.3 TIE ROD PIPE RESTRAINT

- A. Where the use of tie rods to restrain thrust is approved by the Commissioner, they must meet the following ASTM Designations:

| <u>Tie Rod Diameter</u> | <u>ASTM Designations</u> | | |
|-------------------------|--------------------------|---------------|----------------|
| | <u>Rods</u> | <u>Nuts</u> | <u>Washers</u> |
| Up to 1-1/2 | A449 | A563 Grade D | A325 |
| Over 1-1/2" | A193 | A194 Grade 2H | A325 |

- B. Tie rod threads must be the Unified Coarse Thread Series conforming to ANSI B1.1 for rods 1-inch in diameter and smaller, and 8-inch pitch thread series for larger diameters. Nuts must be hexagonal. Harness tie rod nuts must have a standard chamfer on the back face with finished spherical bearing surface. The nuts must seat in steel plate washers having similar finished concave spherical seats. Where the use of mechanical joint retainer glands are called for on the Plans or approved by the Commissioner, they must conform to ASTM A536. All special castings must be made of good quality ductile iron of such character and so adapted in chemical composition to produce spheroidal graphite structure. The iron must be of such character to provide superior mechanical properties of strength and ductility; the iron must be soft enough to satisfactorily allow drilling and cutting.

- C. The minimum physical properties will be as follows:
1. Tensile strength-----60,000 pounds per square inch.
 2. Yield strength-----42,000 pounds per square inch.
 3. 2-inch Elongation-----10%.

- D. In addition to the standard required tests, the following requirements must be met: Keel Block Tests as detailed in ASTM A536 - Standard 0.50-inch diameter tensile test bars must be machined from keel block coupons cast from each heat and of the same hardness range as the special castings. Minimum test requirements are as specified above.

2.4 STRUCTURAL STEEL for pipe restraint must conform to the requirements of AASHTO M270 (ASTM A709). Guide 36 and section 505 of the Illinois Department of Transportation Standard Specification.

2.5 REINFORCING STEEL shall be ASTM A615, Grade 60 per Section 508 of the Standard Specifications

3.0 EXECUTION

3.1 GENERAL

Install all joint anchorage in accordance with the requirements of Section 02510 – Ductile Iron Pipe and Fittings. Install all joint anchorage for fittings in accordance with manufacturer's installation instructions unless directed otherwise by the Commissioner.

3.2 DUCTILE IRON PIPE

All fittings and conditions, which result in tangential forces on the piping, must be provided with thrust restraints, unless otherwise specified or approved by the Commissioner.

3.3 PIPE RESTRAINT STRUCTURES FOR 24" WATER MAIN

This work shall be performed in accordance with the applicable portions of Sections 503, 505 and 508 of the Illinois Department of Transportation Standard Specifications Latest Edition, the details in the plans and as herein specified.

Construction Requirements:

Where required by soil conditions or high water table a permanent corrugated metal casing shall be used to line the drilled hole. The casing shall not be removed when the concrete is poured for the caisson.

END OF SECTION 02516

SECTION 02518

DISINFECTION AND TESTING OF WATER MAINS

1.0 GENERAL

1.1 DESCRIPTION OF WORK

This section includes requirements for hydrostatic pressure testing, chlorinating, and the disinfection of water mains as shown on the drawings and specified here.

1.2 WORK SPECIFIED ELSEWHERE

- A. Section 02510 - Ductile Iron Pipe and Fittings
- B. Section 02512 – Concrete Pipe and Fittings

1.3 REFERENCES

- A. AWWA C600 – Installation of Ductile-Iron Water Mains and Their Appurtenances
- B. AWWA C651 - Disinfecting Water Mains.
- C. Follow the Latest Edition of the Above References.

1.4 SUBMITTALS

- A. Prior to starting work, furnish a detailed outline of the proposed sequence of operation, manner of filling and flushing the water main, disinfection procedure, safety procedure, and disposal of water flushed from the water main for review by WATER QUALITY SURVEILLANCE SECTION (WQSS) of the Department.
- B. Furnish the name of the Contractor disinfecting the water main to the Commissioner for review by the WQSS.

1.5 QUALITY ASSURANCE

The disinfection of water mains must be performed in accordance with IEPA Regulations, AWWA C651, and the Department's requirements as specified here.

2.0 PRODUCTS (Not Used)

3.0 EXECUTION

- A. All flushing and pressure testing of water mains must meet the requirements of AWWA Specification C600.
- B. Air Testing of Water Pipes: All water mains which are installed within casing pipes under the expressway must be air tested and approved prior to the installation of riser shafts and pipes within riser shafts. This can be accomplished by installing a M.J. cap and 1" test tap and pressure gauge in receiving pit and a

M.J. plug and 2" test tap in jacking pit to connect an air compressor for the purpose of testing pipes at 100 p.s.i. air pressure. The pipes will have to hold 100 p.s.i. for 2 hours in order to pass. If there is drop in pressure the pipes should be repaired and the test repeated until the water main passes the test.

- C. Cleaning Water Mains: For all water mains 24-inch and larger, after the air testing, the contractor must remove the cap in the receiving pit and connect the 2" test tap in the jacking pit to a nearby fire hydrant and clean the inside of water pipes under the expressway by pumping the water being sent from 2" test tap from the receiving pit to a nearby sewer manhole. Upon satisfaction of the resident engineer that the water pipes are adequately clean, the contractor can begin installing the vertical pipes and build the riser shafts.

- D.. Preliminary Flushing

The Contractor must flush all new water mains, extensions, connections, and hydrant branches, prior to the hydrostatic testing and expel air from the new water main, to the satisfaction of the Commissioner. The flushing operation must be continued for a minimum of eight (8) hours, unless directed otherwise by the Commissioner.

- E. Hydrostatic Testing

Water mains must be tested in sections, unless directed otherwise by the Commissioner. Pressure testing water mains is to be performed using a hydrostatic testing method only; using compressed air will not be permitted. Contractor must insure that all air has been expelled while filling the test section with water. The test must subject the water main to a minimum hydrostatic pressure of 100 psi, for a period of two (2) hours, measured at the highest point of the pipe in the test section. Allowable leakage during the test must not exceed limits specified in AWWA Specification C600.

- F. Secondary Flushing

1. Notification: The Contractor must give a minimum forty-eight (48) hour notice before performing the secondary flushing procedure.
2. After each valve section has satisfactorily passed a hydrostatic pressure test, and before it is disinfected, the Contractor must flush the valve section so as to maintain a minimum velocity of 2.5 feet per second four (4) hours or until the water flows clear, unless directed otherwise by the Commissioner.
3. For water mains 24" and larger contractor must open 2" test tap in riser shaft, located in jacking pit and a temporary hydrant to get the velocity to flush the water main to the satisfaction of resident engineer needed. The contractor will pump out the water from riser shaft to a nearby sewer manhole.
4. For water mains 24-inches in diameter and larger, the Contractor must extend the secondary flushing of the valve section to a minimum of

twenty-four (24) hours, while maintaining a discharge flow through at least one fire hydrant within the test section (approximately 2,500 GPM), unless directed otherwise by the Commissioner.

G. Disinfection of Water Mains

Observation of the disinfection and subsequent water samplings after secondary flushing must be under the direction of Water Quality Surveillance Section (WQSS) of the Department.

Safety

The Contractor must have sufficient equipment to properly carry out the disinfection operation and have the necessary safety equipment on hand; including a Chlorine Institute Emergency Kit "A" and self contained breathing apparatus. Failure to provide such equipment will be cause for disallowing the disinfection operation.

H. Contractor Responsibility

1. The Contractor must have overall responsibility for hydrostatic testing, chlorination, and sampling. The Contractor must provide all the necessary personnel to: assist in the disinfection operation; perform the post flushing operation; and assist the WQSS in the water sampling. The Contractor must be responsible for guaranteeing that sufficient and necessary sanitary precautions are taken during construction to ensure approval of the main for service.
2. Final approval of the main rests with the WQSS and the Department.

END OF SECTION 02518

SECTION 02535

VALVE BASINS, MANHOLES AND CATCH BASINS

PART 1 – GENERAL

1.1 DESCRIPTION OF WORK

- A. This Section includes requirements for construction and adjustment of valve basins, manholes, catch basins, inlets and appurtenances using precast concrete or masonry structures.

1.2 WORK SPECIFIED ELSEWHERE

- A. Section 02240 – Dewatering Excavations
- B. Section 02280 – Repair and Adjustment of Sewer Pipe and Structures
- C. Section 02315 – Excavation, Trenching and Backfilling
- D. Section 02320 – Special Soils Excavation and Disposal

1.3 REFERENCES

- A. ASTM A48 – Standard Specification for Gray Iron Castings
- B. ASTM A185 - Standard Specification for Steel Welded Wire Reinforcement, Plain, for Concrete Reinforcement
- C. ASTM A197 – Standard Specification for Cupola Malleable Iron
- D. ASTM A536 – Standard Specification for Ductile Iron Castings
- E. ASTM A615 – Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement
- F. ASTM C32 – Standard Specification for Sewer and Manhole Brick
- G. ASTM C55 – Standard Specification for Concrete Building Brick
- H. ASTM C139 – Standard Specification for Concrete Masonry Units for Construction of Catch Basins and Manholes
- I. ASTM C443 – Standard Specification for Joints for Concrete Pipe and Manholes Using Rubber Gaskets
- J. ASTM C478 – Standard Specification for Pre-cast Reinforced Concrete Manhole Sections
- K. ASTM C990 – Standard Specification for Joints for Concrete Pipe, Manholes and Precast Box Sections Using Preformed Flexible Joint Sealants
- L. IDOT Standard Specification for Road and Bridge Construction (SSRBC)

- M. Follow the latest edition of the above references

PART 2 - PRODUCTS

2.1 PRECAST CONCRETE STRUCTURES

- A. Pre-cast concrete base and riser sections furnished for manholes, valve basins, catch basins and other structures must conform to ASTM C478.
- B. Furnish riser sections in various heights, including an offset tapered section, as detailed on the Drawings, or as directed by the Commissioner.

2.2 JOINT SEALANTS

- A. Rubber gaskets for joints must conform to ASTM C443.
- B. Mastic for joints must be butyl rubber conforming to ASTM C990 or approved bitumastic material.

2.3 ADJUSTING RINGS

- A. Adjusting rings are to be pre-cast concrete with sufficient steel reinforcing to prevent cracking in normal handling and use.
- B. Mating Faces:
1. Smooth
 2. Parallel
 3. Free from cracks, chips, spalls or casting irregularities interfering with watertight mating to structure top or casting.
 4. Provide grooves in faces to contain extrudible preformed gasket material when possible.

2.4 CASTINGS

- A. Iron castings are to be gray iron conforming to ASTM A48, free from blowholes, shrinkage, cracks and other defects.
- B. Allowance for shrinkage must be made in the patterns to meet the specified thickness. Valve basin and meter vault lids are to seat at all points.
- C. Ductile iron castings are to conform to ASTM A536, Grade 60-40-18.
- D. Malleable castings are to conform to ASTM A197.
- E. All castings are to be made accurately to dimensions shown and planed, chipped, filed, or ground where marked or where otherwise necessary to secure flat and true surfaces.

2.5 STEPS

- A. Steps are to be polypropylene plastic encased Grade 60 steel reinforcement conforming to ASTM C478.

2.6 CAST-IN-PLACE CONCRETE

- A. Class SI concrete conforming to Article 1020 of the SSRBC.

2.7 CONCRETE AND MASONRY BLOCKS AND BRICKS

- A. Pre-cast concrete brick must conform to ASTM C55 quality designated Grade N-1.
- B. Clay brick must be best quality sewer brick conforming to the qualifications of ASTM C32, except where modified here.
 - 1. Brick must be uniform, sound, hard burned, of compact texture, free from lime and cracks with a clear ringing sound when struck, whole and with edges full and square, and of standard dimensions.
 - 2. Brick, when thoroughly dried and immersed in water for twenty-four (24) hours, must not absorb more than 15% by weight of water.
 - 3. If in any load of brick more than 10% are inferior, the whole load is rejected.
 - 4. If in any load of brick less than 10% are inferior, the brick is accepted provided the Contractor pulls out all inferior bricks, and immediately removes them from the Site of the Work.

2.8 MORTAR

- A. Mortar for brickwork is to be composed of one (1) part Portland cement and two (2) parts screened sand.
 - 1. Portland cement must conform to the requirements of Article 1020 of the SSRBC.
 - 2. Sand must be class a quality and gradation FA-9 as specified in Article 1003.02 of the SSRBC.
- B. The cement and sand must be proportioned by volume and thoroughly mixed in a tight box.
- C. After the initial mixing, water is to be added gradually and the ingredients mixed until the mortar is of proper consistency. The amount of water must be no more than necessary to produce a workable, plastic mortar.
- D. Prepare only a sufficient amount of mortar for immediate use and any mortar that has begun to set must not be re-tempered or used in any way in the Work.

2.9 REINFORCING STEEL

- A. Reinforcing steel is to meet the requirements of ASTM A615, Grade 60 and A185 for wire fabric.

PART 3 - EXECUTION

3.1 GENERAL

- A. Excavate, backfill and compact in accordance with Section 02315 – Excavation, Trenching and Backfilling.
- B. All brick must be thoroughly wetted immediately before being laid.
- C. Old brickwork must be thoroughly cleaned and wetted before new work is jointed thereto.
- D. No masonry work is to be done when the temperature is below 33° F unless otherwise approved, and then only under conditions for protecting it from frost.

3.2 PRE-CAST STRUCTURE INSTALLATION

- A. Carefully place pre-cast sections for all structures on prepared bedding so as to fully and uniformly support the structure and allow pipes to be laid to proper grade.
- B. All lift holes on pre-cast sections must be completely filled with mortar, smoothed, and painted on both inside and outside surfaces.
- C. Seal joints between riser sections with approved mastic sealant or rubber gaskets, or as directed by the Commissioner.
- D. Place one adjusting ring (only) on manhole top. Select thickness of adjusting ring to bring completed structure to required elevation.
- E. Seal joints between adjusting rings and frames with approved mastic sealant before backfilling structures.
- F. Install manhole frame and cover.

3.3 MASONRY STRUCTURE INSTALLATION

- A. Install pre-cast concrete or cast in place base as shown on the Drawings.
- B. Lay brick courses to the line, straight and parallel, breaking joints with those in adjacent courses.
- C. Lay brick radially as headers in a full bed of mortar with joints not exceeding 3/8-inch in thickness.
- D. Fill joints with mortar. Interior joints must be trowel-struck.
- E. Fresh masonry must be plastered inside and outside and must be protected from damage of all kinds.
- F. New work, unless immediately covered with earth or brick backing, or an approved form of curing compound, must be kept moist until the mortar has hardened.

- G. Install manhole frame and cover.

3.4 FINAL ADJUSTMENT OF STRUCTURES

- A. After the base course and binder course have been placed, and prior to placing the surface course, the structures must be adjusted to match the final pavement elevation.
- B. Remove the binder and base course adjacent to and for a distance not exceeding 12-inches outside the base of the castings.
- C. Adjust the castings to final pavement elevation with adjusting rings set in mortar.
- D. Fill the space around the casting with Class SI concrete to the elevation of the surface of the binder course.

END OF SECTION 02535

SECTION 05100

STRUCTURAL AND MISCELLANEOUS STEEL FOR SHORING AND SHEETING OF TRENCH

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

- A. This Section includes the requirements for structural and miscellaneous steel, including all ferrous metals, whether wrought, rolled, fabricated or assembled, except castings and pipelines.

1.2 WORK SPECIFIED ELSEWHERE

- A. Section 02315 – Excavation, Trenching and Backfilling
- B. Section 06130 – Timber and Lumber for Shoring and Sheeting

1.3 REFERENCES

- A. AISC Manual of Steel Construction, Volumes I & II
- B. ASTM A36 - Standard Specification for Carbon Structural Steel
- C. ASTM A276 - Standard Specification for Stainless Steel Bars and Shapes
- D. ASTM A283 - Standard Specification for Low and Intermediate Tensile Strength Carbon Steel Plates
- E. ASTM A307 - Standard Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength
- F. ASTM A328 - Standard Specification for Steel Sheet Piling
- G. ASTM A572 - Standard Specification for High-Strength Low-Alloy Columbium-Vanadium Structural Steel
- H. Follow the latest edition of the above references

1.4 SUBMITTALS

- A. Submit complete data on date of manufacture, dates of initial installation and extraction, and service for used sheet piling, to the Commissioner for all sheet piling used in the Work.

PART 2 - PRODUCTS

2.1 STRUCTURAL AND MISCELLANEOUS STEEL

- A. Structural and miscellaneous steel must meet the requirements of the following standards, except as specified otherwise:
 - 1. Structural Steel Shapes and Plate - ASTM A36
 - 2. Mild Steel Plate - ASTM A283
 - 3. Anchor Bolts, Erection Bolts – ASTM A307
 - 4. Structural Connection Bolts – ASTM A325N
 - 5. Steel Sheet Piling - ASTM A328, A572 Grades 45, 50 and 55
 - 6. Stainless Steel Anchor - ASTM A276 Bolts Type 304

2.2 BOLTS AND NUTS

- A. Bolts and nuts must be of the best quality mild steel, except where bronze, aluminum, stainless steel, or other materials are shown or required.
- B. Bolts must have hexagonal nuts.
- C. Threads must be clean cut of American Standard size.

2.3 SHEET STEEL PILING

- A. Properties of the sheet piling must be as specified in the following table:

Properties of Steel Sheet Piling

| <u>Section No</u> | <u>Minimum Section Modulus, In³ (m³) Per Lin. Ft. (m)</u> | <u>Minimum Weight, Per Sq. Ft. (m)</u> | <u>Minimum Wall Thickness(mm)</u> |
|--------------------|---|--|-----------------------------------|
| PDA-27 or equal | 10.7 | 27.0 | 0.375" (9.5) |

- B. All piling must be new or good quality used material.
- C. All sheet piling must be true and straight with undamaged interlocks or ends.
- D. Used sheet piling must have been driven only one (1) time before being offered for use on this Work.

2.4 HANGERS AND SUPPORTS

- A. Hangers and supports must be of standard design with a working safety factor not less than five (5) and must be adjustable after installation.

2.5 ANCHORS

- A. Anchors must be designed for rigid fastening to the structures, whether directly or through brackets.
- B. Anchors for piping must be of the cast iron chair type with steel straps, except where anchors form an integral part of pipe fitting, or where an anchor of special design is required.

2.6 INSERTS

- A. Inserts must be designed to permit the rods to be adjusted horizontally in one (1) plane and to lock the rod nut or head automatically.
- B. Inserts must be recessed near the upper flange to receive reinforcing rods.
- C. Inserts must be so designed that they may be held in position during concrete pouring operations.

- D. Inserts must be designed to carry safely the maximum load that can be imposed by the rods, which they engage.
- E. Inserts for concrete must be galvanized.

PART 3 - EXECUTION

3.1 FIELD QUALITY CONTROL

- A. The design, workmanship, and erection must conform to the requirements of the AISC Specifications for Design, Fabrication, and Erection of Structural Steel for Buildings, unless otherwise shown, specified, or required.
- B. The Contractor is responsible for the correctness of all shop and field fabrication and fit. Members must be straight, must fit closely together, and the finished work must be free from burrs, twists, bends, and open joints.
- C. Where shop assembly of field connections is shown, specified or required, the unmatched holes must be reamed and the pieces match marked before disassembly. No drifting will be allowed.
- D. In case the eccentricity is too great for good work or the strength of the joint is liable to be weakened by reaming, the piece is rejected and a new satisfactory one must be provided by the Contractor. This process is considered incidental to the construction and no additional payment will be allowed.

3.2 FIELD CONNECTIONS

- A. Connections made in the field must be welded or bolted as specified unless directed otherwise by the Commissioner.

3.3 WELDING

- A. Welding must be performed by qualified welders in accordance with the requirements of the AISC Specifications.
- B. In assembling and during welding, the component parts of built-up members must be supported and held by sufficient clamps and other adequate means to hold the parts in proper relations for welding.

3.4 STEEL SHEET PILING

- A. Steel sheet piling must be driven to a depth as shown, unless otherwise directed by the Commissioner.
- B. All sheet piling must be driven plumb and tight to the lines and grades shown and directed.
- C. The driven sheet piling must be stiffened horizontally, as necessary, by longitudinal channels. The channel sections must be full butt-welded to each other and to existing channel, and must be bolted to the sheet piling.

3.5 HANGERS AND SUPPORTS

- A. All piping must be firmly supported and anchored in proper position and alignment with due allowance for expansion and contraction.
- B. The type, location, and arrangement of hangers and supports must be as shown and as otherwise required, all as approved by the Commissioner.

3.6 NUTS, BOLTS, AND ANCHORS

- A. Anchors must be furnished and installed when specified, shown, or required for holding the pipelines and equipment in position or alignment.
- B. Anchor bolts must be accurately set using a steel or wood template, as necessary, to maintain elevation and location, and if placed after concrete is cast, all necessary drilling and grouting is considered incidental to the construction process and no additional payment will be allowed.
- C. Anchor bolt threads must be kept heavily coated with grease while concreting.
- D. Bolt anchors must be of the sizes indicated or approved and must be of the self-drilling type.
- E. All anchor bolts and nuts submerged or subject to periodic wetting must be of stainless steel unless shown or specified otherwise.

3.7 INSERTS

- A. Inserts for concrete must be installed in the concrete structures where required for fastening supporting devices.

END OF SECTION 05100

SECTION 06130

TIMBER AND LUMBER FOR SHORING AND SHEETING

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

- A. This Section includes timber and lumber of the kind, size, and dimensions required for the Work and as specified under the different items in which it is used.

1.2 WORK SPECIFIED ELSEWHERE

- A. Section 02315 – Excavation, Trenching and Backfilling
- B. Section 05100 – Structural and Miscellaneous Steel for Shoring and Sheeting

1.3 REFERENCES

- A. ASTM D245 – Standard Practice for Establishing Structural Grades and Related Allowable Properties for Structural Lumber.
- B. Follow the latest edition of the above reference.

1.4 STORAGE AND HANDLING

- A. All timber and lumber must be carefully handled to avoid splitting or damage to the surfaces and edges, and must be stored in piles at least 1-foot (300 mm) above dry ground and piled in such a manner as to shed water and prevent distortion and warping. Untreated lumber must be open-stacked; treated lumber must be close-stacked. Lumber piles must be protected from the weather.

PART 2 - PRODUCTS

2.1 GENERAL

- A. The timber and lumber must meet the general requirements of ASTM D245.
- B. For any purpose, timber and lumber must be free from shakes, waness, black and unsound knots, and all descriptions of decay. It must be squared to the required dimensions throughout its entire length. It must, in all cases, be suitable for the work for which it is employed.

2.2 UNTREATED

- A. Timber and lumber for shoring and bracing must be new or sound used pine, Douglas fir, or spruce.

2.3 TREATED

- A. Treated timber and lumber must be well-seasoned No. 1 southern yellow pine or Douglas fir, reasonably free of knots, splits, seasoning checks, pitch pockets and streaks, wormholes, and other defects.

2.4 SHEETING

- A. Construction wood sheeting may be new or used lumber of any species or grade suitable for the proposed use.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. All timber and lumber must be cut and framed true and exact to a close fit in such a manner that the job will have an even bearing over the entire contact surfaces. Unless otherwise specified, nails and spikes must be driven just sufficiently to set the heads flush with the surface of the wood. Deep or frequent hammer marks in surfaces and edges of timbers will not be allowed.
- B. Sheeting and bracing must be installed by skilled mechanics, keyed tight by wedges where necessary and arranged to permit ready withdrawal without endangering the adjacent soil. Sheeting must be tongued and grooved where necessary to obtain the required results. Sheeting must not be cracked or split in driving.
- C. As far as practicable, all cutting and boring of treated timber and lumber must be done before treatment and no temporary bolting, spiking, or nailing of treated lumber will be permitted.

END OF SECTION 06130

RAILROAD PROTECTIVE LIABILITY INSURANCE (BDE)

The contractor will be required to carry Railroad Protective Liability and Property Damage Liability Insurance in accordance with Article 107.11 of the Standard Specifications. The limits of liability shall be in accordance with Article 107.11 of the Standard Specifications unless otherwise noted. A separate policy is required for each railroad indicated below unless otherwise noted.

| <u>NAMED INSURED & ADDRESS</u> | <u>NUMBER & SPEED OF PASSENGER TRAINS</u> | <u>NUMBER & SPEED OF FREIGHT TRAINS</u> |
|---|---|---|
| CHICAGO TRANSIT AUTHORITY 120 N. Racine Chicago, IL 60607 | M-F 382 TRAINS / DAY @ 55 MPH Sat 338 trains / day @ 55 mph Sun 356 trains / day @ 55 MPH | -0- -0- -0- |

FOR FREIGHT/PASSENGER

INFORMATION CONTACT: Mr. Marvin A. Watson
PHONE: 312/681-3860

FOR INSURANCE INFORMATION CONTACT: Mr. Marvin A. Watson PHONE:
312/681-3860

| <u>NAMED INSURED & ADDRESS</u> | <u>NUMBER & SPEED OF PASSENGER TRAINS</u> | <u>NUMBER & SPEED OF FREIGHT TRAINS</u> |
|---|---|---|
| The Belt Railway Co. of Chicago 6900 S. Central Ave. Bedford Park, IL 60638 | -0- | 50 trains / day @ 25 mph |

FOR FREIGHT/PASSENGER INFORMATION CONTACT: Tim Coffey
PHONE: 708/496-4112

FOR INSURANCE INFORMATION CONTACT: Roy Gelder
PHONE: 708/496-4041

| <u>NAMED INSURED & ADDRESS</u> | <u>NUMBER & SPEED OF PASSENGER TRAINS</u> | <u>NUMBER & SPEED OF FREIGHT TRAINS</u> |
|---|---|---|
| Norfolk Southern Corp. 3 Commercial Place Norfolk, VA 23510 | -0- | 70 trains / day @ 30 mph |

FOR FREIGHT/PASSENGER INFORMATION CONTACT: Tom Bracey
PHONE: 404/527-2536

FOR INSURANCE INFORMATION CONTACT: David W. Fries
PHONE: 757/629-2710

| <u>NAMED INSURED & ADDRESS</u> | <u>NUMBER & SPEED OF PASSENGER TRAINS</u> | <u>NUMBER & SPEED OF FREIGHT TRAINS</u> |
|---|---|---|
| Chicago Rail Link 2728 E. 104 th St. Chicago, IL 60617 | -0- | 4 trains / day @ 10 mph |

FOR FREIGHT/PASSENGER INFORMATION CONTACT: Dave Sass
PHONE: 773/721-4000

FOR INSURANCE INFORMATION CONTACT: Dave Sass
PHONE: 773/721-4000

Basis of Payment: The costs for providing insurance, as noted above, will be paid for at the contract unit price per Lump Sum for RAILROAD PROTECTIVE LIABILITY INSURANCE.

APPROVAL OF INSURANCE: The ORIGINAL and one CERTIFIED copy of each required policy shall be submitted to ENGINEER OF DESIGN, ILLINOIS DEPARTMENT OF TRANSPORTATION, 2300 SOUTH DIRKSEN PARKWAY, SPRINGFIELD, ILLINOIS 62764 for approval. The contractor will be advised when the Department has received approval of the insurance from the railroad(s). Before any work begins on railroad right-of-way, the Contractor shall submit to the Resident Engineer evidence that the required railroad protective liability insurance has been approved by the railroad(s). The Contractor shall also provide the Resident Engineer with expiration date of each required policy.

ADJUSTING FRAMES AND GRATES (BDE)

Effective: August 1, 2001

Revised: November 1, 2001

Add the following to Article 602.02 of the Standard Specifications:

- “(k) High Density Polyethylene (HDPE) Plastic Note 2
- (l) Recycled Rubber..... Note 3

Note 2. HDPE plastic adjusting rings may be used to adjust the frames and grates of drainage and utility structures up to a maximum of 75 mm (3 in.). They shall be installed and sealed underneath the frames according to the manufacturer’s specifications.

HDPE plastic adjusting rings shall be manufactured from Class B HDPE plastic, as identified in ASTM D 1248, using the injection molding process. They shall be designed and tested to meet or exceed an HS25 wheel load according to the AASHTO Standard Specifications for Highway Bridges and shall be stabilized against the effects of ultra violet light.

Recycled material may be used. If recycled material is used, only polyethylene and less than two percent polypropylene will be allowed in the reclaim process. All feed stock shall be tested by the manufacturer on a procurement/production batch basis to verify the following property values:

| Physical Property | Test Standard | Value |
|----------------------------|---------------|--|
| Melt Flow Index | ASTM D 1238 | 0.30 to 30.0 g/10 min (0.01 to 1.06 oz/10 min) |
| Specific Gravity | ASTM D 792 | 0.84 to 0.98 |
| Tensile Strength, Yield | ASTM D 638 | 13,800 kPa (2000 psi) minimum |

HDPE plastic adjusting rings shall have no void areas, cracks, or tears, and have no effects due to exposure to ultraviolet light. Ripples or sags are limited to less than ten percent of the surface. The actual diameter or length shall not vary more than 3 mm (0.125 in.) from the specified diameter or length. Variations in height are limited to ± 1.6 mm (0.063 in.) for parts up to 50 mm (2 in.) or ± 3 mm (0.125 in.) for parts from 50 mm (2 in.) to 75 mm (3 in.). Variations shall not exceed 6 mm (0.25 in.) from flat (dish, bow or convoluting edge) or 3 mm (0.125 in.) for bulges or dips in the surface.

Note 3. Riser rings fabricated from recycled rubber may be used to adjust the frames and grates of drainage and utility structures up to a maximum of 50 mm (2 in.). They shall be installed and sealed underneath the frames according to the manufacturer's specifications.

Recycled rubber products shall consist of no less than 80 percent by weight recycled rubber. The riser shall meet or exceed the following when maintained at $23 \pm 2^\circ\text{C}$ ($73 \pm 3^\circ\text{F}$) for at least 24 hours prior to and during testing.

| Physical Property | Test Standard | Value |
|---|---|---|
| Density | ASTM C 642-90 | 1.10 ± 0.034 g/cu cm (68.63 ± 2.11 lb/cu ft) |
| Durometer Hardness | ASTM D 2240-97 Shore A | 72 ± 6 ¹ |
| Compression Deformation under 1000 kPa (145 psi) | ASTM D 575 –Test Method B Test of Specified Force | 9 ± 4 % |
| Compression Set | ASTM D 395 – Illinois Modified Test Method B Compression Set under Constant Deflection in Air | 5 ± 3 % ² |
| Weathering (70 hrs at 70 °C (158 °F)) Hardness retained | ASTM D 573 | 98 %, minimum |
| Freeze/thaw when exposed to deicing chemicals | ASTM C 672-91 | 3 % loss, maximum |

¹ Average of three tests over a 28 mm (1.12 in.) diameter sample.

² Samples compressed to 75 percent of initial height.

Recycled rubber adjusting rings shall have no void areas, cracks, or tears, and have no effects due to exposure to ultraviolet light. The actual diameter or length shall not vary more than 3 mm (0.125 in.) from the specified diameter or length. Variations in height are limited to ± 1.6 mm (0.063 in.) for parts up to 50 mm (2 in.)."

Revise Article 603.08 of the Standard Specifications to read:

“603.08 Adjusting Rings. As an option to Articles 603.03 through 603.07, the adjustment of frames and grates may be accomplished through the use of adjusting rings that fit on top of the frame. These adjusting rings shall be fabricated as a one-piece assembly from gray iron, ductile iron or structural steel. They shall provide a structural capacity equal to or greater than the existing frame and shall not affect the opening size or surface appearance. The rings shall have a device for positively positioning and fastening the ring to the existing frame to prevent movement under traffic.”

AUTHORITY OF RAILROAD ENGINEER (BDE)

Effective: July 1, 2004

Revise Article 105.02 of the Standard Specifications to read:

"105.02 Authority of Railroad Engineer. Whenever the safety of railroad traffic is concerned, the Railroad Engineer will have jurisdiction over safety measures to be taken and his/her decision as to the methods, procedures, and measures used shall be final, and any and all Contractors performing work near or about the railroad shall be governed by such decision. Instructions to the Contractor by the Railroad Engineer will be given through the Engineer. Work ordered as specified herein will be classified and paid for according to Article 104.02. Work performed for the Contractor's convenience will not be paid for separately but shall be considered as included in the contract."

BITUMINOUS BASE COURSE / WIDENING SUPERPAVE

Effective: April 1, 2002

Revised: April 1, 2004

Description. This work shall consist of constructing bituminous base course Superpave and bituminous concrete base course widening Superpave according to Sections 355 and 356 respectively, of the Standard Specifications and the special provision, "Quality Control/Quality Assurance of Bituminous Concrete Mixtures" except as modified herein.

Revise Article 355.02(d) of the Standard Specifications to read:

" (d) RAP Material (Note3)"

Revise Note 2 of Article 355.02 of the Standard Specifications to read:

" Note 2. Unless otherwise specified on the plans, the bituminous material shall be performance graded (PG) asphalt cement (AC) , PG58-22. When more than 15 percent RAP is used, a softer PG binder may be required as determined by the Engineer. When the pavement has a structural number (D_t) of 3.00 or less, the low temperature grade of the asphalt cement shall be lowered one grade (i.e. PG58-28 replaces PG58-22)."

Add the following to the end Article 355.02 of the Standard Specifications:

" Note 3. RAP shall meet the requirements of the special provision "RAP for Use in Bituminous Concrete Mixtures"."

Revise Article 355.05 of the Standard Specifications to read:

"355.05 Mixture Design. The Contractor shall submit mix designs for approval, for each required mixture. Mix designs shall be developed by Level III personnel who have completed the course, "Superpave Mix Design Upgrade". The mixtures shall be designed according to the respective Illinois Modified AASHTO references listed below:

AASHTO MP 2 Standard Specification for Superpave Volumetric Mix Design

AASHTO R 30 Standard Practice for Mixture Conditioning of Hot-Mix Asphalt (HMA)

- AASHTO PP 28 Standard Practice for Designing Superpave HMA
- AASHTO T 209 Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures
- AASHTO T 312 Preparing and Determining the Density of Hot Mix Asphalt (HMA) Specimens by Means of the Superpave Gyratory Compactor
- AASHTO T 308 Determining the Asphalt Content of Hot Mix Asphalt (HMA) by the Ignition Method

(a) Job Mix Formula (JMF). The JMF shall be according to the following limits:

| <u>Ingredient</u> | <u>Percent by Dry Weight</u> |
|-------------------|------------------------------|
| Aggregate | 93.0 to 96.0 |
| Asphalt Cement | 4.0 to 7.0 |
| Dust/AC Ratio | 1.4 |

When RAP material is being used, the JMF shall be according to the following limits:

| <u>Ingredient</u> | <u>Percent by Dry Weight</u> |
|------------------------------|------------------------------|
| Virgin Aggregate(s) | 46.0 to 96.0 |
| RAP Material(s) (Note 1) | 0 to 50 |
| Mineral Filler (if required) | 0 to 5.0 |
| Asphalt Cement | 4.0 to 7.0 |
| Dust/AC Ratio | 1.4 |

Note 1. If specified on the plans, the maximum percentage of RAP shall be as specified therein.

It is recommended that the selected combined aggregate gradation not pass through the restricted zones specified in Illinois Modified AASHTO MP 2.

Bituminous concrete binder course Superpave mixture IL-25.0 or IL-19.0 meeting the requirements of the special provision, "Superpave Bituminous Concrete Mixtures" may also be used. The minimum compacted lift thickness specified therein shall apply.

(b) Volumetric Requirements.

| Design Compactive Effort | Design Air Voids Target (%) |
|---------------------------------|------------------------------------|
| $N_{DES} = 50$ | 2.0 |

(c) Determination of Need for Anti-Stripping Additive. The mixture designer shall determine if an additive is needed in the mix to prevent stripping. The determination will be made on the basis of tests performed according to Illinois Modified AASHTO T 283 using 4 in. Marshall bricks. To be considered acceptable by the Engineer as a mixture not susceptible to stripping, the ratio of conditioned to unconditioned split tensile strengths (TSR) shall be equal to or greater than 0.75. Mixtures, either with or without an additive, with TSR values less than 0.75 will be considered unacceptable.

If it is determined that an additive is required, the additive may be hydrated lime, slaked quicklime, or a liquid additive, at the Contractor's option. The liquid additive shall be selected from the Department's list of approved additives and may be limited to those which have exhibited satisfactory performance in similar mixes.

Dry hydrated lime shall be added at a rate of 1.0 to 1.5 percent by weight of total dry aggregate. Slurry shall be added in such quantity as to provide the required amount of hydrated lime solids by weight of total dry aggregate. The exact rate of application for all anti-stripping additives will be determined by the Engineer. The method of application shall be according to Article 406.12 of the Standard Specifications."

Revise Article 355.06 of the Standard Specifications to read:

"355.06 Mixture Production. The asphalt cement shall be transferred to the asphalt tanks and heated to a temperature of 120 °C (250 °F) to 175 °C (350 °F). If the loading temperature exceeds 175 °C (350 °F), the asphalt shall not be used until it has cooled to 175 °C (350 °F). Wide variations in temperature which affect the amount of asphalt delivered will not be permitted.

When a hot-mix plant conforming to Article 1102.01 is used, the aggregate shall be dried and heated in the revolving dryer to a temperature of 120 °C (250 °F) to 175 °C (350 °F).

The aggregate and bituminous material used in the bituminous aggregate mixture shall be measured separately and accurately by weight or by volume. When the aggregate is in the mixer, the bituminous material shall be added and mixing continued for a minimum of 30 seconds and until a homogeneous mixture is produced in which all particles of the aggregate are coated. The mixing period, size of the batch and the production rate shall be approved by the Engineer.

The ingredients shall be heated and combined in such a manner as to produce a mixture which, when discharged from the mixer, shall be workable and vary not more 10 °C (20 °F) from the temperature set by the Engineer.

When RAP material(s) is used in the bituminous aggregate mixture, the virgin aggregate(s) shall be dried and heated in the dryer to a temperature that will produce the specified resultant mix temperature when combined with the RAP material.

The heated virgin aggregates and mineral filler shall be combined with RAP material in such a manner as to produce a bituminous mixture which when discharged from the mixer shall not vary more than 15 °C (30 °F) from the temperature set by the Engineer. The combined ingredients shall be mixed for a minimum of 35 seconds and until a homogeneous mixture as to composition and temperature is obtained. The total mixing time shall be a minimum of 45 seconds consisting of dry and wet mixing. Variation in wet and dry mixing times may be permitted, depending on the moisture content and amount of salvaged material used. The mix temperature shall not exceed 175 °C (350 °F). Wide variations in the mixture temperature will be cause for rejection of the mix.

(a) Personnel. The QC Manager and Level I Technician shall have successfully completed the Department's "Superpave Field Control Course".

(b) Required Tests. Testing shall be conducted to control the production of the bituminous mixture using the test methods identified and performed at a frequency not less than indicated in the following table.

| Parameter | Frequency of Tests Non-Class I Mixtures | Test Method |
|--|---|---|
| Aggregate Gradation Hot bins for batch and continuous plants. Individual cold-feeds or combined belt-feed for drier-drum plants. (% passing sieves: 12.5 mm (1/2 In.), 4.75 mm (No. 4), 75 µm (No. 200)) | 1 gradation per day of production. The first day of production shall be washed ignition oven test on the mix. Thereafter, the testing shall alternate between dry gradation and washed ignition oven test on the mix. The dry gradation and the washed ignition oven test results shall be plotted on the same control chart. | Illinois Procedure (See Manual of Test Procedures for Materials). |
| Asphalt Content by ignition oven (Note 1.) | 1 per day | Illinois-Modified AASHTO T 308 |
| Air Voids Bulk Specific Gravity of Gyratory Sample | 1 per day | Illinois-Modified AASHTO T 312 |
| Maximum Specific Gravity of Mixture | 1 per day | Illinois-Modified AASHTO T 209 |

Note 1. The Engineer may waive the ignition oven requirement for AC content if the aggregates to be used are known to have ignition AC content calibration factors which exceed 1.5 percent. If the ignition oven requirement is waived, other Department approved methods shall be used to determine AC content.

During production, the ratio of minus 75 µm (#200) sieve material to total asphalt cement shall be not less than 0.6 nor more than 1.6, and the moisture content of the mixture at discharge from the mixer shall not exceed 0.5 percent. If at any time the ratio of minus 75 µm (#200) material to asphalt or moisture content of the mixture falls outside the stated limits, production of the mix shall cease. The cause shall be determined and corrective action satisfactory to the Engineer shall be initiated prior to resumption of production.

During production, mixture containing an anti-stripping additive will be tested by the Engineer for stripping according to Illinois Modified AASHTO T 283. If the mixture fails to meet the TSR criteria for acceptance, no further mixture will be accepted until the Contractor takes such action as is necessary to furnish a mixture meeting the criteria.

(c) Control Charts/Limits. Control charts/limits shall be according to QC/QA requirements for Non-Class I Mixtures, except air voids shall be plotted on the control charts within the following control limits:

| Air Void Control Limits | |
|-------------------------|-----------------|
| Mixture | Individual Test |
| Shoulders | ± 1.2 % |
| Others | ± 1.2 %” |

Revise Article 355.08 of the Standard Specifications to read:

“ **355.08 Placing.** The bituminous mixture shall be placed with a spreading and finishing machine. The minimum compacted thickness of each lift shall be according to the following table:

| Nominal Maximum Aggregate Size of Mixture | Minimum Compacted Lift Thickness |
|---|----------------------------------|
| CA 10 - 19 mm (3/4 in.) | 57 mm (2 1/4 in.) |
| CA 6 – 25 mm (1 in.) | 76 mm (3 in.) |

The maximum compacted thickness of each lift shall be 100 mm (4 in.). If the Contractor elects to substitute an approved vibratory roller for one of the required rollers, the maximum compacted thickness of the each lift, excluding the top lift, may be increased to 150 mm (6 in.) provided the required density is obtained.

The surface of each lift shall be clean and dry before succeeding lifts are placed.”

Revise Article 355.13 of the Standard Specifications to read:

" **355.13 Basis of Payment.** This work will be paid for at the contract unit price per square meter (square yard) for BITUMINOUS BASE COURSE SUPERPAVE of the thickness specified."

Revise Article 356.02 of the Standard Specifications to read:

" **356.02 Materials.** The materials for the bituminous concrete mixture shall meet the requirements of Article 355.02, be designed according to Article 355.05 and produced according to Article 355.06. Bituminous concrete binder course Superpave mixture IL-25.0 or IL-19.0 meeting the requirements of the special provision, "Superpave Bituminous Concrete Mixtures" may also be used. The minimum compacted lift thickness specified therein shall apply."

Revise the first paragraph of Article 356.06 of the Standard Specifications to read:

" **356.06 Base Course Widening.** The bituminous concrete mixture shall be transported according to Article 406.14."

Revise the second sentence of the fifth paragraph of Article 356.06 of the Standard Specifications to read:

“ The minimum compacted thickness of each lift shall be according to the table shown in Article 355.08.”

Revise the first paragraph of Article 356.11 of the Standard Specifications to read:

" **356.11 Basis of Payment.** Where the Department requires that bituminous concrete be used, this work will be paid for at the contract unit price per square meter (square yard) for BITUMINOUS CONCRETE BASE COURSE WIDENING SUPERPAVE of the thickness specified."

BITUMINOUS CONCRETE SURFACE COURSE (BDE)

Effective: April 1, 2001

Revised: April 1, 2003

Replace the fourth paragraph of Article 406.23(b) of the Standard Specifications with the following:

"Mixture for cracks, joints, flangeways, leveling binder (machine method), leveling binder (hand method) and binder course in excess of 103 percent of the quantity specified by the Engineer will not be measured for payment.

Surface course mixture in excess of 103 percent of adjusted plan quantity will not be measured for payment. The adjusted plan quantity for surface course mixtures will be calculated as follows:

Adjusted Plan Quantity = C x quantity shown on the plans or as specified by the Engineer.

where C = metric: $C = \frac{G_{mb} \times 24.99}{U}$ English: $C = \frac{G_{mb} \times 46.8}{U}$

and where:

G_{mb} = average bulk specific gravity from approved mix design.

U = Unit weight of surface course shown on the plans in kg/sq m/25 mm (lb/sq yd/in.), used to estimate plan quantity.

24.99 = metric constant.

46.8 = English constant.

If project circumstances warrant a new surface course mix design, the above equations shall be used to calculate the adjusted plan quantity for each mix design using its respective average bulk specific gravity."

BITUMINOUS EQUIPMENT, SPREADING AND FINISHING MACHINE (BDE)

Effective: January 1, 2005

Revise the fourth paragraph of Article 1102.03 of the Standard Specifications to read:

"The paver shall be equipped with a receiving hopper having sufficient capacity for a uniform spreading operation. The hopper shall be equipped with a distribution system to uniformly place a non-segregated mixture in front of the screed. The distribution system shall have chain curtains, deflector plates, and/or other devices designed and built by the paver manufacturer to prevent segregation during distribution of the mixture from the hopper to the paver screed. The Contractor shall submit a written certification that the devices recommended by; the paver manufacturer to prevent segregation have been installed and are operational.

Prior to paving, the Contractor, in the presence of the Engineer, shall visually inspect paver parts specifically identified by the manufacturer for excessive wear and the need for replacement. The Contractor shall supply a completed check list to the Engineer noting the condition of the parts. Worn parts shall be replaced. The Engineer may require an additional inspection prior to the placement of a surface course or at other times throughout the work.”

COARSE AGGREGATE FOR TRENCH BACKFILL, BACKFILL AND BEDDING (BDE)

Effective: April 1, 2001

Revised: November 1, 2003

Revise Article 208.02 of the Standard Specifications to read:

“208.02 Materials. Materials shall be according to the following Articles of Section 1000 – Materials:

- (a) Fine Aggregate (Note 1)..... 1003.04
- (b) Coarse Aggregate (Note 2)..... 1004.06

Note 1. The fine aggregate shall be moist to the satisfaction of the Engineer.

Note 2. The coarse aggregate shall be wet to the satisfaction of the Engineer.”

Revise the first sentence of the second paragraph of subparagraph (b) in Article 208.03 of the Standard Specifications to read:

"Any material meeting the requirements of Articles 1003.04 or 1004.06 which has been excavated from the trenches shall be used for backfilling the trenches."

Add the following to the end of Article 542.02 of the Standard Specifications:

- “(bb) Fine Aggregate (Note 1)..... 1003.04
- (cc) Coarse Aggregate (Note 2)..... 1004.06

Note 1. The fine aggregate shall be moist to the satisfaction of the Engineer.

Note 2. The coarse aggregate shall be wet to the satisfaction of the Engineer.”

Revise the first and second sentences of the second paragraph of subparagraph (a) of Article 542.04 of the Standard Specifications to read:

"The unstable and unsuitable material shall be removed to a depth determined by the Engineer and for a width of one diameter (or equivalent diameter) of the pipe on each side of the pipe culvert, and replaced with aggregate. Rock shall be removed to an elevation 300 mm (1 ft) lower than the bottom of the pipe or to a depth equal to 40 mm/m (1/2 in./ft) of ultimate fill height over the top of the pipe culvert, whichever is the greater depth, and for a width as specified in (b) below, and replaced with aggregate."

Revise the second paragraph of subparagraph (c) of Article 542.04 of the Standard Specifications to read:

"Well compacted aggregate, at least 100 mm (4 in.) in depth below the pipe culvert, shall be placed the entire width of the trench and for the length of the pipe culvert, except well

compacted impervious material shall be used for the outer 1 m (3 ft) at each end of the pipe. When the trench has been widened by the removal and replacement of unstable or unsuitable material, the foundation material shall be placed for a width not less than the above specified widths on each side of the pipe. The aggregate and impervious material shall be approved by the Engineer and shall be compacted to the Engineer's satisfaction by mechanical means."

Revise subparagraph (e) of Article 542.04 of the Standard Specifications to read:

"(e) Backfilling. As soon as the condition of the pipe culvert will permit, the entire width of the trench shall be backfilled with aggregate to a height of at least the elevation of the center of the pipe. The aggregate shall be placed longitudinally along the pipe culvert, except at the outer 1 m (3 ft) at each end of the culvert which shall be backfilled with impervious material. The elevation of the backfill material on each side of the pipe shall be the same. The space under the pipe shall be completely filled. The aggregate and impervious material shall be placed in 200 mm (8 in.) layers, loose measurement. When using PVC, PE, or corrugated metal pipe, the aggregate shall be continued to a height of at least 300 mm (1 ft) above the top of the pipe and compacted to a minimum of 85 percent of standard lab density by mechanical means. When reinforced concrete pipes are used and the trench is within 600 mm (2 ft) of the pavement structure, the backfill shall be compacted to a minimum of 85 percent of standard lab density by mechanical means.

When using PVC, PE, or corrugated metal pipe a minimum of 300 mm (1 ft) of cover from the top of the pipe to the top of the subgrade will be required.

The installed pipe and its embedment shall not be disturbed when using movable trench boxes and shields, sheet pile, or other trench protection.

The remainder of the trench shall be backfilled with select material, from excavation or borrow, free from large or frozen lumps, clods or rock, meeting the approval of the Engineer. The material shall be placed in layers not exceeding 200 mm (8 in.) in depth, loose measurement and compacted to 95 percent of the standard laboratory density. Compaction shall be obtained by use of mechanical tampers or with approved vibratory compactors. Before compacting, each layer shall be wetted or dried to bring the moisture content within the limits of 80 to 110 percent of optimum moisture content determined according to AASHTO T 99 (Method C). All backfill material shall be deposited in the trench or excavation in such a manner as not to damage the culvert. The filling of the trench shall be carried on simultaneously on both sides of the pipe. The Contractor may, at his/her expense, backfill the entire trench with aggregate in lieu of select material. The aggregate shall be compacted to the satisfaction of the Engineer by mechanical means.

The backfill material for all trenches and excavations made in the subgrade of the proposed improvement, and for all trenches outside of the subgrade where the inner edge of the trench is within 600 mm (2 ft) of the edge of the proposed pavement, curb, gutter, curb and gutter, stabilized shoulder, or sidewalk shall be according to Section 208. The trench backfill material shall be compacted to a minimum of 85 percent of standard lab density by mechanical means.

The Contractor may, at his/her expense, backfill the entire trench with controlled low strength material meeting the approval of the Engineer.

When the trench has been widened for the removal and replacement of unstable or unsuitable material, the backfilling with aggregate and impervious material, will be required for a width of at least the specified widths on each side of the pipe. The remaining width of each layer may be backfilled with select material. Each 200 mm (8 in.) layer for the entire trench width shall be completed before beginning the placement of the next layer."

Revise subparagraph (b) of Article 542.05 of the Standard Specifications to read:

"(b) Embankment. Embankment extending to an elevation of 300 mm (1 ft) over the top of the pipe shall be constructed according to Article 542.04(f), except the material up to the elevation of the center of the pipe and extending to a width of at least 450 mm (18 in.) on each side of the pipe, exclusive of the outer 1 m (3 ft) at each end of the pipe, shall consist of aggregate. At the outer 1 m (3 ft) at each end of the culvert, impervious material shall be used."

Add the following paragraph after the first paragraph of Article 542.10 of the Standard Specifications:

"Trench backfill will be measured for payment according to Article 208.03."

Add the following paragraph after the third paragraph of Article 542.11 of the Standard Specifications:

"Trench backfill will be paid for according to Article 208.04."

Add the following to of Article 550.02 of the Standard Specifications:

"(m) Fine Aggregate (Note 2)..... 1003.04
(n) Coarse Aggregate (Note 3)..... 1004.06

Note 2. The fine aggregate shall be moist to the satisfaction of the Engineer.

Note 3. The coarse aggregate shall be wet to the satisfaction of the Engineer."

Revise the first two sentences of the third paragraph of Article 550.04 of the Standard Specifications to read:

"Well compacted, aggregate bedding material at least 100 mm (4 in.) in depth below the pipe, shall be placed for the entire width of the trench and length of the pipe. The aggregate shall be compacted to the satisfaction of the Engineer by mechanical means."

Revise Article 550.07 of the Standard Specifications to read:

"550.07 Backfilling. As soon as the condition of the pipe will permit, the entire width of the trench shall be backfilled with aggregate to a height of at least the elevation of the center of the pipe. The aggregate shall be placed longitudinally along the pipe. The elevation of the backfill material on each side of the pipe shall be the same. The space under the pipe shall be completely filled. The aggregate backfill material shall be placed in 200 mm (8 in.) layers, loose

measurement and compacted to the satisfaction of the Engineer by mechanical means. When using PVC pipe, the aggregate shall be continued to a height of at least 300 mm (12 in.) above the top of the pipe.

The installed pipe and its embedment shall not be disturbed when using movable trench boxes and shields, sheet pile, or other trench protection.

The remainder of the trench and excavation shall be backfilled to the natural line or finished surface as rapidly as the condition of the sewer will permit. The backfill material shall consist of suitable excavated material from the trench or of trench backfill as herein specified. All backfill material shall be deposited in the trench or excavation in such a manner as not to damage the sewer and shall be compacted to the satisfaction of the Engineer by mechanical means. The filling of the trench shall be carried on simultaneously on both sides of the pipe.

The backfill material for trenches and excavation made in the subgrade of the proposed improvement, and for all trenches outside of the subgrade where the inner edge of the trench is within 600 mm (2 ft) of the edge of the proposed pavement, curb, gutter, curb and gutter, stabilized shoulder or sidewalk shall be according to Section 208. The backfill material shall be compacted to 85 percent of standard lab density by mechanical means.

All backfill material up to a height of 300 mm (1 ft) above the pipe shall be deposited in uniform layers not exceeding 200 mm (8 in.) thick, loose measurement. The material in each layer shall be compacted to the satisfaction of the Engineer by mechanical means. The backfilling above this height shall be done according to Method 1, 2 or 3 as described below, with the following exceptions.

When trench backfill or excavated material meeting the requirements of Section 208 is required above the first 300 mm (1 ft) of the pipe, the layers shall not exceed 200 mm (8 in.). Gradations CA6 or CA10 shall not be used with Method 2 or Method 3.

Method 1. The material shall be deposited in uniform layers not exceeding 300 mm (1 ft) thick, loose measurement, and each layer shall be compacted to the satisfaction of the Engineer by mechanical means.

Method 2. The material shall be deposited in uniform layers not exceeding 300 mm (1 ft) thick, loose measurement, and each layer shall be either inundated or deposited in water.

Method 3. The trench shall be backfilled with loose material, and settlement secured by introducing water through holes jetted into the backfill to a point approximately 600 mm (2 ft) above the top of the pipe. The holes shall be spaced as directed by the Engineer but shall be no farther than 2 m (6 ft) apart.

The water shall be injected at a pressure just sufficient to sink the holes at a moderate rate of speed. The pressure shall be such that the water will not cut cavities in the backfill material nor overflow the surface. If water does overflow the surface, it shall be drained into the jetted holes by means of shallow trenches.

Water shall be injected as long as it will be absorbed by the backfill material and until samples taken from test holes in the trench show a satisfactory moisture content. The Contractor shall bore the test holes not more than 15 m (50 ft) apart and at such other locations in the trench designated by the Engineer. As soon as the watersoaking has been completed, all holes shall be filled with soil and compacted by ramming with a tool approved by the Engineer.

Backfill material which has been watersoaked shall be allowed to settle and dry for at least 10 days before any surface course or pavement is constructed on it. The length of time may be altered, if deemed desirable, by the Engineer. Where the inner edge of the trench is within 600 mm (2 ft) of the edge of the proposed pavement, curb, gutter, curb and gutter, stabilized shoulder or sidewalk, the provisions of this paragraph shall also apply.

At the end of the settling and drying period, the crusted top of the backfill material shall be scarified and, if necessary, sufficient backfill material added, as specified in Method 1, to complete the backfilling operations.

The method used for backfilling and compacting the backfill material shall be the choice of the Contractor. If the method used does not produce results satisfactory to the Engineer, the Contractor will be required to alter or change the method being used so the resultant backfill will be satisfactory to the Engineer. Should the Contractor be required to alter or change the method being used, no additional compensation will be allowed for altering or changing the method.

The Contractor may, at his/her expense, backfill the entire trench with controlled low strength material meeting the approval of the Engineer.

When sheeting and bracing have been used, sufficient bracing shall be left across the trench as the backfilling progresses to hold the sides firmly in place without caving or settlement. This bracing shall be removed as soon as practicable. Any depressions which may develop within the area involved in the construction operation due to settlement of the backfilling material shall be filled in a manner approved by the Engineer.

When the Contractor constructs the trench with sloped or benched sides according to Article 550.04, backfilling for the full width of the excavation shall be as specified, except no additional compensation will be allowed for trench backfill material required outside the vertical limits of the specified trench width.

Whenever excavation is made for installing sewer pipe across earth shoulders or private property, the topsoil disturbed by excavation operations shall be replaced as nearly as possible in its original position, and the whole area involved in the construction operations shall be left in a neat and presentable condition.

When using any PVC pipe, the pipe shall be backfilled with aggregate to 300 mm (1 ft) over the top of the pipe and compacted to a minimum of 85 percent of standard lab density by mechanical means.

When reinforced concrete pipes are used and the trench is within 600 mm (2 ft) of the pavement structure, the backfill shall be compacted to a minimum of 85 percent of standard lab density by mechanical means.

Deflection Testing for Storm Sewers. All PVC storm sewers will be tested for deflection not less than 30 days after the pipe is installed and the backfill compacted.

For PVC storm sewers with diameters 600 mm (24 in.) or smaller, a mandrel drag shall be used for deflection testing. For PVC storm sewers with diameters over 600 mm (24 in.), deflection measurements other than by a mandrel drag shall be used.

Where the mandrel is used, the mandrel shall be furnished by the Contractor and pulled by hand through the pipeline with a suitable rope or cable connected to each end. Winching or other means of forcing the deflection gauge through the pipeline will not be allowed.

The mandrel shall be of a shape similar to that of a true circle enabling the gauge to pass through a satisfactory pipeline with little or no resistance. The mandrel shall be of a design to prevent it from tipping from side to side and to prevent debris build-up from occurring between the channels of the adjacent fins or legs during operation. Each end of the core of the mandrel shall have fasteners to which the pulling cables can be attached. The mandrel shall have 9, various sized fins or legs of appropriate dimension for various diameter pipes. Each fin or leg shall have a permanent marking that states its designated pipe size and percent of deflection allowable.

The outside diameter of the mandrel shall be 95 percent of the base inside diameter, where the base inside diameter is:

For all PVC pipe (as defined using ASTM D 3034 methodology):

If the pipe is found to have a deflection greater than specified, that pipe section shall be removed, replaced, and retested."

Revise subparagraph (c) of Article 1003.04 of the Standard Specifications to read:

"(c) Gradation. The fine aggregate gradation shall be as follows:

| | |
|---|------------------------------|
| Backfill, bedding and trench backfill for pipe | |
| culverts and storm sewers | FA 1, FA 2, FA 6, or FA 21 |
| Porous granular embankment and backfill, french drains, | |
| and sand backfill for underdrains | FA 1, FA 2, or FA20 (Note 1) |

Note 1: For FA 1, FA 2, and FA 20 the percent passing the 75 μ m (No. 200) sieve shall be 2 ± 2 ."

Revise the title of Article 1004.06 of the Standard Specifications to read:

"Coarse Aggregate for Blotter, Embankment, Backfill, Trench Backfill, French Drains, and Bedding."

Add the following to the end of subparagraph (c) of Article 1004.06 of the Standard Specifications:

| | |
|---|-------------------------|
| "Backfill, bedding, and trench backfill for pipe culverts | |
| and storm sewers | CA 6, CA 10, and CA 18" |

CONCRETE ADMIXTURES (BDE)

Effective: January 1, 2003

Revised: July 1, 2004

Revise Article 1020.05(b) of the Standard Specifications to read:

"(b) Admixtures. Except as specified, the use of admixtures to increase the workability or to accelerate the hardening of the concrete will be permitted only when approved in writing

by the Engineer. The Department will maintain an Approved List of Concrete Admixtures. When the Department permits the use of a calcium chloride accelerator, it shall be according to Article 442.02, Note 5.

When the atmosphere or concrete temperature is 18 °C (65 °F) or higher, a retarding admixture meeting the requirements of Article 1021.03 shall be used in the Class BD Concrete and portland cement concrete bridge deck overlays. The amount of retarding admixture to be used will be determined by the Engineer. 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 Class BD Concrete. The amount of high range water-reducing admixture will be determined by the Engineer. At the option of the Contractor, a water-reducing admixture may be used. Type I cement shall be used.

For Class PC and PS Concrete, a retarding admixture may be added to the concrete mixture when the concrete temperature is 18 °C (65 °F) or higher. Other admixtures may be used when approved by the Engineer, or if specified by the contract. If an accelerating admixture is permitted by the Engineer, it shall be the non-chloride type.

At the Contractor's option, admixtures in addition to an air-entraining admixture may be used for Class PP-1 concrete. The accelerator shall be the non-chloride type. If a water-reducing or retarding admixture is used, the cement factor may be reduced a maximum 18 kg/cu m (0.30 hundredweight/cu yd). If a high range water-reducing admixture is used, the cement factor may be reduced a maximum 36 kg/cu m (0.60 hundredweight/cu yd). Cement factor reductions shall not be cumulative when using multiple admixtures. An accelerator shall always be added prior to a high range water-reducing admixture, if both are used.

If Class C fly ash or ground granulated blast-furnace slag is used in Class PP-1 concrete, a water-reducing or high range water-reducing admixture shall be used. However, the cement factor shall not be reduced if a water-reducing, retarding, or high range water-reducing admixture is used. In addition, an accelerator shall not be used.

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. For Class PP-3 concrete, the non-chloride accelerator shall be calcium nitrite.

For Class PP-2 or PP-3 concrete, the Contractor has the option to use a water-reducing admixture. A retarding admixture shall not be used unless approved by the Engineer. A water-reducing, retarding, or high range water-reducing admixture shall not be used to reduce the cement factor.

When the air temperature is less than 13 °C (55 °F) for Class PP-1 or PP-2 concrete, the non-chloride accelerator shall be calcium nitrite.

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. 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 according to Article 1103.04,

but a retarding admixture shall not be used unless approved by the Engineer. A water-reducing, retarding, or high range water-reducing admixture shall not be used to reduce the cement factor.

If the Department specifies a calcium chloride accelerator for Class PP-1 concrete, the maximum chloride dosage shall be 1.0 L (1.0 quart) of solution per 45 kg (100 lb) of cement. The dosage may be increased to a maximum 2.0 L (2.0 quarts) per 45 kg (100 lb) of cement if approved by the Engineer. If the Department specifies a calcium chloride accelerator for Class PP-2 concrete, the maximum chloride dosage shall be 1.3 L (1.3 quarts) of solution per 45 kg (100 lb) of cement. The dosage may be increased to a maximum 2.6 L (2.6 quarts) per 45 kg (100 lb) of cement if approved by the Engineer.

For Class PV, MS, SI, RR, SC and SH concrete, at the option of the Contractor, or when specified by the Engineer, a water-reducing admixture or a retarding admixture may be used. The amount of water-reducing admixture or retarding admixture permitted will be determined by the Engineer. The air-entraining admixture and other admixtures shall be added to the concrete separately, and shall be permitted to intermingle only after they have separately entered the concrete batch. The sequence, method and equipment for adding the admixtures shall be approved by the Engineer. The water-reducing admixture shall not delay the initial set of the concrete by more than one hour. Type I cement shall be used.

When a water-reducing admixture is added, a cement factor reduction of up to 18 kg/cu m (0.30 hundredweight/cu yd), from the concrete designed for a specific slump without the admixture, will be permitted for Class PV, MS, SI, RR, SC and SH concrete. When an approved high range water-reducing admixture is used, a cement factor reduction of up to 36 kg/cu m (0.60 hundredweight/cu yd), from a specific water cement/ratio without the admixture, will be permitted based on a 14 percent minimum water reduction. This is applicable to Class PV, MS, SI, RR, SC and SH concrete. A cement factor below 320 kg/cu m (5.35 hundredweight/cu yd) will not be permitted for Class PV, MS, SI, RR, SC and SH concrete. A cement factor reduction will not be allowed for concrete placed underwater. Cement factor reductions shall not be cumulative when using multiple admixtures.

For use of admixtures to control concrete temperature, refer to Articles 1020.14(a) and 1020.14(b).

The maximum slumps given in Table 1 may be increased to 175 mm (7 in.) when a high range water-reducing admixture is used for all classes of concrete except Class PV and PP.”

Revise Section 1021 of the Standard Specifications to read:

“SECTION 1021. CONCRETE ADMIXTURES”

1021.01 General. Admixtures shall be furnished in liquid form ready for use. The admixtures may be delivered in the manufacturer's original containers, bulk tank trucks or such containers or tanks as are acceptable to the Engineer. Delivery shall be accompanied by a ticket which clearly identifies the manufacturer and trade name of the material. Containers shall be readily identifiable to the satisfaction of the Engineer as to manufacturer and trade name of the material they contain.

Prior to inclusion of a product on the Department's Approved List of Concrete Admixtures, the manufacturer shall submit a report prepared by an independent laboratory accredited by the AASHTO Accreditation Program. The report shall show the results of physical tests conducted no more than five years prior to the time of submittal, according to applicable specifications.

Tests shall be conducted using materials and methods specified on a "test" concrete and a "reference" concrete, together with a certification that no changes have been made in the formulation of the material since the performance of the tests. Per the manufacturer's option, the cement content for all required tests shall either be according to applicable specifications or 335 kg/cu m (5.65 cwt/cu yd). Compressive strength test results for six months and one year will not be required.

In addition to the report, the manufacturer shall submit AASHTO T 197 water content and set time test results on the standard cement used by the Department. The test and reference concrete mixture shall contain a cement content of 335 kg/cu m (5.65 cwt/cu yd). The manufacturer may select their lab or an independent lab to perform this testing. The laboratory is not required to be accredited by the AASHTO Accreditation Program.

Prior to the approval of an admixture, the Engineer may conduct all or part of the applicable tests on a sample that is representative of the material to be furnished. The test and reference concrete mixtures tested by the Engineer will contain a cement content of 335 kg/cu m (5.65 cwt/cu yd). For freeze-thaw testing, the Department will perform the test according to Illinois Modified AASHTO T 161, Procedure B.

The manufacturer shall include in the submittal the following information according to ASTM C 494; the average and manufacturing range of specific gravity, the average and manufacturing range of solids in the solution, and the average and manufacturing range of pH. The submittal shall also include an infrared spectrophotometer trace no more than five years old.

When test results are more than seven years old, the manufacturer shall re-submit the infrared spectrophotometer trace and the report prepared by an independent laboratory accredited by the AASHTO Accreditation Program.

All admixtures, except chloride-based accelerators, shall contain no more than 0.3 percent chloride by mass (weight).

1021.02 Air-Entraining Admixtures. Air-entraining admixtures shall conform to the requirements of AASHTO M 154.

If the manufacturer certifies that the air-entraining admixture is an aqueous solution of Vinsol resin that has been neutralized with sodium hydroxide (caustic soda), testing for compliance with the requirements may be waived by the Engineer. In the certification, the manufacturer shall show complete information with respect to the formulation of the solution, including the number of parts of Vinsol resin to each part of sodium hydroxide. Before the approval of its use is granted, the Engineer will test the solution for its air-entraining quality in comparison with a solution prepared and kept for that purpose.

1021.03 Retarding and Water-Reducing Admixtures. The admixture shall comply with the following requirements:

- (a) The retarding admixture shall comply with the requirements of AASHTO M 194, Type B (retarding) or Type D (water-reducing and retarding).

- (b) The water-reducing admixture shall comply with the requirements of AASHTO M 194, Type A.
- (c) The high range water-reducing admixture shall comply with the requirements of AASHTO M 194, Type F (high range water-reducing) or Type G (high range water-reducing and retarding).

When a Type F or Type G high range water-reducing admixture is used, water-cement ratios shall be a minimum of 0.32.

Type F or Type G admixtures may be used, subject to the following restrictions:

For Class MS, SI, RR, SC and SH concrete, the water-cement ratio shall be a maximum of 0.44.

The Type F or Type G admixture shall be added at the jobsite unless otherwise directed by the Engineer. The initial slump shall be a minimum of 40 mm (1 1/2 in.) prior to addition of the Type F or Type G admixture, except as approved by the Engineer.

When a Type F or Type G admixture is used, retempering with water or with a Type G admixture will not be allowed. An additional dosage of a Type F admixture, not to exceed 40 percent of the original dosage, may be used to retemper concrete once, provided set time is not unduly affected. A second retempering with a Type F admixture may be used for all classes of concrete except Class PP and SC, provided that the dosage does not exceed the dosage used for the first retempering, and provided that the set time is not unduly affected. No further retempering will be allowed.

Air tests shall be performed after the addition of the Type F or Type G admixture.

1021.04 Set Accelerating Admixtures. The admixture shall comply with the requirements of AASHTO M 194, Type C (accelerating) or Type E (water reducing and accelerating)”

CONCRETE BARRIER (BDE)

Effective: January 1, 2004

Revised: April 2, 2004

Revise Section 637 of the Standard Specifications to read:

“SECTION 637. CONCRETE BARRIER

637.01 Description. This work shall consist of constructing a concrete barrier and its base.

637.02 Materials. Materials for concrete barrier and concrete base shall conform to the requirements of the following Articles of Section 1000 - Materials:

| Item | Article/Section |
|-----------------------------------|-----------------|
| (a) Portland Cement Concrete..... | 1020 |
| (b) Tie Bars (Note 1)..... | 1006.10(a)(b) |
| (c) Dowel Bars..... | 1006.11(b) |

- (d) Protective Coat..... 1023
- (e) Non-Shrink Grout 1024
- (f) Chemical Adhesive 1027
- (g) Preformed Expansion Joint Filler 1051.01 – 1051.08

Note 1. Tie bars shall be Grade 400 (Grade 60).

Materials for bituminous concrete base shall conform to the requirements of Article 356.02.

637.03 Equipment. Equipment for concrete barrier shall conform to the requirements of the following Articles of Section 1100 - Equipment:

| Item | Article/Section |
|------------------------------------|-----------------|
| (a) Hand Vibrator | 1103.17(a) |
| (b) 3 m (10 ft) Straightedge | 1103.17(h) |

Equipment for portland cement concrete base shall conform to the requirements of Article 483.03.

Equipment for bituminous concrete base shall conform to the requirements of Article 356.03.

CONSTRUCTION REQUIREMENTS

637.04 Barrier Base. The base may be constructed separately or poured monolithically with the barrier. When constructed separately, portland cement concrete base shall be constructed according to Articles 483.04 – 483.06, except the surface shall be finished according to Article 503.09(a). Bituminous concrete base shall be constructed according to Articles 356.05 and 356.06.

637.05 Anchoring. Barrier shall be anchored to the base by the methods shown on the plans. When tie bars are used, they shall be installed in preformed or drilled holes with a non-shrink grout or chemical adhesive.

637.06 Barrier Construction. Concrete barrier shall be constructed according to the applicable portions of Articles 503.06 and 503.07. Where the horizontal alignment of the concrete barrier is curved, the barrier shall be constructed either on the curved alignment or on cords not more than 3 m (10 ft) in length.

When slipformed, the vertical centerline of the barrier shall not vary from the proposed centerline by more than 75 mm (3 in.) nor by more than 13 mm in 3 m (1/2 in. in 10 ft). All surfaces shall be checked with a 3 m (10 ft) straightedge as the concrete exits the slipform mold. Surface irregularities greater than 10 mm in 3 m (3/8 in. in 10 ft) shall be corrected immediately. Continued variations in the barrier surface exceeding 6 mm in 3 m (1/4 in. in 10 ft) will not be permitted and remedial action shall immediately be taken to correct the problem. Any deformations or bulges remaining after the initial set shall be removed by grinding after the concrete has hardened. All holes and honeycombs shall be patched immediately.

637.07 Barrier Transitions. Transitions between barriers of different design shall be constructed according to the details shown on the plans.

637.08 Joints. Joints shall be constructed as shown on the plans and as follows:

- (a) Construction Joints. Construction joints shall be constructed in the barrier whenever there is an interruption in the pour of more than 30 minutes.
- (b) Expansion Joints. Expansion joints shall be constructed in the barrier and the base in line with expansion joints in the adjacent pavement or shoulder. Expansion joints shall also be constructed at locations where the barrier abuts a rigid structure.

Prior to placing concrete, a light coating of oil shall be uniformly applied to the dowel bars.

- (c) Contraction Joints. Contraction joints shall be constructed in the barrier at uniform intervals with a maximum spacing of 6 m (20 ft) or in line with contraction joints in the adjacent pavement or shoulder. Contraction joints shall be formed by a groove 3 mm (1/8 in.) wide by 50 mm (2 in.) deep either formed in the plastic concrete or sawed after the concrete has set.

637.09 Finishing. The surface of concrete barrier shall be finished according to Article 503.16(a).

637.10 Protective Coat. When required, the top and vertical surfaces of the barrier exposed to traffic shall receive a protective coat. The application of the protective coat shall be according to Article 420.21.

637.11 Method of Measurement. This work will be measured as follows:

- (a) Contract Quantities. The requirements for the use of contract quantities shall be according to Article 202.07(a).
- (b) Measured Quantities. New barrier base, both separate and monolithic, will be measured for payment in meters (feet) in place, along the centerline of the base or barrier. The width of the base will be defined as the width of the barrier.

Concrete barrier will be measured for payment in meters (feet) in place, along the centerline of the barrier.

Barrier transitions will be measured for payment in meters (feet) in place, along the centerline of the transition.

Protective coat will be measured for payment according to Article 420.22(b).

637.12 Basis of Payment. This work will be paid for at the contract unit price per meter (foot) for BARRIER BASE; CONCRETE BARRIER, DOUBLE FACE, of the height specified; CONCRETE BARRIER, SINGLE FACE, of the height specified; and CONCRETE BARRIER TRANSITION.

Protective coat will be paid for according to Article 420.23.”

CURB RAMPS FOR SIDEWALK (BDE)

Effective: January 1, 2004

Description. This work shall consist of constructing sidewalk curb ramps with detectable warnings in compliance with the Americans with Disabilities Act, Accessibility Guidelines (ADAAG). Work shall be according to Section 424 of the Standard Specifications except as modified herein.

The detectable warnings shall consist of an area of truncated domes that provide both visual and tactile cues to pedestrians who are about to enter into traffic. The warning area shall begin 150 mm (6 in.) from the back of the curb and continue 600 mm (2 ft) in the direction of pedestrian travel for the entire width of the walking surface.

The detectable warnings shall also present a contrast in color from the adjacent sidewalk. This shall be accomplished by constructing the warning area, plus the 150 mm (6 in.) area between the warning area and the back of curb, out of concrete that is integrally colored red. However if the sidewalk is brick or of some dark color, the contrast requirement shall be achieved with normal (grey), Class SI concrete.

Materials. Materials for the detectable warning area of the curb ramps shall meet the following requirements.

- a) Integrally Colored Concrete. Integrally colored concrete shall be according to Section 1020 of the Standard Specification for Class SI concrete except as follows.

- | | |
|--------------------|---|
| Article 1020.04 | The allowable water/cement ratio range shall be 0.40 minimum to 0.44 maximum. |
| Article 1020.04 | The allowable slump range shall be 75 mm (3 in.) minimum to 125 mm (5 in.) maximum. |
| Article 1020.04 | The allowable coarse aggregate gradations shall be CA 11, CA 13, CA 14, and CA 16. |
| Article 1020.05(b) | A calcium chloride accelerating admixture shall not be used. |
| Article 1020.05(b) | The cement factor shall not be reduced if a water-reducing or high range water-reducing admixture is used. |
| Article 1020.05(c) | Fly ash shall not be used. |
| Article 1020.05(k) | Ground granulated blast-furnace slag shall not be used. |
| Article 1020.11 | Pigment for integrally colored concrete shall be added to the concrete and mixed per the Manufacturer's recommendation. |
| Article 1020.13 | The curing method shall be Type I membrane curing. |
| Article 1020.13. | The protection method shall be according to Article 1020.13(e)(1) and the protection period shall be 96 hours. No material, including the insulating material, shall be placed in direct contact with the concrete surface. |

- (b) Pigment for Integrally Colored Concrete. The pigment shall meet the requirements of ASTM C 979, match color number 30166 of Federal Standard 595, and be on the Department's Approved List of Pigments for Integrally Colored Concrete.
- (c) Release Agent for Concrete Stamping Tools. The release agent shall be according to the stamping tool manufacturer's recommendations and the following: it shall be a clear liquid that will evaporate, it shall not harm the concrete, and it shall allow the application of Type I membrane curing.

Equipment. Equipment for the detectable warning area of the curb ramps shall meet the following requirements.

- (a) Concrete Stamps. Sufficient numbers and sizes of stamps shall be furnished to cover the various widths of the curb ramps. The stamps shall have an air opening at the top of each truncated dome recess; and shall be rigid enough to evenly distribute the force exerted during tamping.
- (b) Tamper. The tamper shall be according to the concrete stamp manufacturer's recommendations.

CONSTRUCTION REQUIREMENTS

Stamping. The concrete shall be placed and finished according to Article 424.06 except the area to be stamped shall not be brushed. When the bleed water has been absorbed, stamping shall begin. The entire width of the curb ramp shall be stamped at the same time. A single stamp or a combination of stamps may be used.

Prior to placing the stamp on the concrete, the stamp shall be coated with the release agent. When recommended by the manufacturer, the release agent shall also be applied to the concrete surface. Once the stamp has been placed on the ramp, it shall remain down until the stamping is complete.

The entire area of the stamp shall be tamped with a short, slow, repetitive action such that the concrete is caused to move up and into the dome recesses of the stamp. Tamping shall continue until mortar has come through the air openings in the stamp. Stepping or walking on the stamp will not be allowed. The base elevation of the domes shall be even with the adjacent sidewalk surface; the stamp shall not be forced down into the concrete.

When stamping is complete, the stamp shall be removed and the concrete cured.

Upon completion of curing, or after cold weather protection if required, the protruding mortar tip on the top of each dome shall be removed and the dome rubbed or ground smooth.

CURING AND PROTECTION OF CONCRETE CONSTRUCTION (BDE)

Effective: January 1, 2004

Revise the second and third sentences of the eleventh paragraph of Article 503.06 of the Standard Specifications to read:

“Forms on substructure units shall remain in place at least 24 hours. The method of form removal shall not result in damage to the concrete.”

Delete the twentieth paragraph of Article 503.22 of the Standard Specifications.

Revise the “Unit Price Adjustments” table of Article 503.22 of the Standard Specifications to read:

| “UNIT PRICE ADJUSTMENTS | |
|---|----------------------------------|
| Type of Construction | Percent Adjustment in Unit Price |
| For concrete in substructures, culverts (having a waterway opening of more than 1 sq m (10 sq ft)), pump houses, and retaining walls (except concrete pilings, footings and foundation seals): When protected by: Protection Method II Protection Method I | 115% 110% |
| For concrete in superstructures: When protected by: Protection Method II Protection Method I | 123% 115% |
| For concrete in footings: When protected by: Protection Method I, II or III | 107% |
| For concrete in slope walls: When protected by: Protection Method I | 107%” |

Delete the fourth paragraph of Article 504.05(a) of the Standard Specifications.

Revise the second and third sentences of the fifth paragraph of Article 504.05(a) of the Standard Specifications to read:

“All test specimens shall be cured with the units according to Article 1020.13.”

Revise the first paragraph of Article 504.06(c)(6) of the Standard Specifications to read:

“Curing and Low Air Temperature Protection. The curing and protection for precast, prestressed concrete members shall be according to Article 1020.13 and this Article.”

Revise the first sentence of the second paragraph of Article 504.06(c)(6) of the Standard Specifications to read:

“For curing, air vents shall be in place, and shall be so arranged that no water can enter the void tubes during the curing of the members.”

Revise the first sentence of the third paragraph of Article 504.06(c)(6) of the Standard Specifications to read:

“As soon as each member is finished, the concrete shall be covered with curing material according to Article 1020.13.”

Revise the eighth paragraph of Article 504.06(c)(6) of the Standard Specifications to read:

“The prestressing force shall not be transferred to any member before the concrete has attained the compressive strength of 28,000 kPa (4000 psi) or other higher compressive release strength specified on the plans, as determined from tests of 150 mm (6 in.) by 300 mm (12 in.) cylinders cured with the member according to Article 1020.13. Members shall not be shipped until 28-day strengths have been attained and members have a yard age of at least 4 days.”

Delete the third paragraph of Article 512.03(a) of the Standard Specifications.

Delete the last sentence of the second paragraph of Article 512.04(d) of the Standard Specifications.

Revise the “Index Table of Curing and Protection of Concrete Construction” table of Article 1020.13 of the Standard Specifications to read:

| “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) ^{1/ 2/} | 3 | 1020.13(c) |
| Driveway | | | |
| Median | | | |
| Curb | | | |
| Gutter | 1020.13(a)(1)(2)(3)(4)(5) ^{4/ 5/} | 3 | 1020.13(c) ^{16/} |
| Curb and 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) |
| Pavement Replacement | 1020.13(a)(1)(2)(3)(4)(5) ^{1/ 2/} | 3 | 442.06(h) and 1020.13(c) |
| Railroad Crossing | 1020.13(a)(3)(5) | 1 | 1020.13(c) |
| Piles | 1020.13(a)(3)(5) | 7 | 1020.13(e)(1)(2)(3) |
| Footings | | | |
| Foundation Seals | 1020.13(a)(1)(2)(3)(4)(5) ^{4/6/} | 7 | 1020.13(e)(1)(2)(3) |
| Substructure | 1020.13(a)(1)(2)(3)(4)(5) ^{1/7/} | 7 | 1020.13(e)(1)(2)(3) |
| Superstructure (except deck) | 1020.13(a)(1)(2)(3)(5) ^{8/} | 7 | 1020.13(e)(1)(2) |
| Deck | 1020.13(a)(5) | 7 | 1020.13(e)(1)(2) ^{17/} |
| Retaining Walls | 1020.13(a)(1)(2)(3)(4)(5) ^{1/7/} | 7 | 1020.13(e)(1)(2) |
| Pump Houses | 1020.13(a)(1)(2)(3)(4)(5) ^{1/} | 7 | 1020.13(e)(1)(2) |
| Culverts | 1020.13(a)(1)(2)(3)(4)(5) ^{4/6/} | 7 | 1020.13(e)(1)(2) ^{18/} |
| Other Incidental Concrete | 1020.13(a)(1)(2)(3)(5) | 3 | 1020.13(c) |
| Precast Concrete: ^{11/} | | | |
| Bridge Beams | | | |
| Piles | | | |
| Bridge Slabs | 1020.13(a)(3)(5) ^{9/10/} | As required. ^{13/} | 504.06(c)(6), 1020.13(e)(2) ^{19/} |
| Nelson Type Structural Member | | | |
| All Other Precast Items | 1020.13(a)(3)(4)(5) ^{2/9/10/} | As required. ^{14/} | 504.06(c)(6), 1020.13(e)(2) ^{19/} |

| | | |
|--|-----------------------------------|--|
| Precast, Prestressed Concrete: ^{11/} | | |
| All Items | 1020.13(a)(3)(5) ^{9/10/} | Until strand tensioning is released. ^{15/} 504.06(c)(6), 1020.13(e)(2) ^{19/} |

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 footings, foundation seals or the bottom slab of culverts is permissible when approved by the Engineer, provided the water temperature can be maintained at 7 °C (45 °F) 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 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), and meets the material requirements of Article 1022.07.
- 9/ Steam curing (heat and moisture) is acceptable and shall be accomplished by the method specified in Article 504.06(c)(6).
- 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, with a maximum curing period of three days.
- 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(e)(1).
- 17/ When Article 1020.13(e)(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(e)(1).
- 18/ For culverts having a waterway opening of 1 sq m (10 sq ft) or less, the culverts may be protected according to Article 1020.13(e)(3).
- 19/ The seven day protection period in the first paragraph of Article 1020.13(e)(2) shall not apply. The protection period shall end when curing is finished. For the third paragraph of Article 1020.13(e)(2), the decrease in temperature shall be according to Article 504.06(c)(6)."

Add the following to Article 1020.13(a) of the Standard Specifications:

“(5) Wetted Cotton Mat Method. After the surface of concrete has been textured or finished, it shall be covered immediately with dry 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 1.2 m (4 ft) 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).”

Revise the first paragraph of Article 1020.13(c) of the Standard Specifications to read:

“Protection of Portland Cement Concrete, Other Than Structures, From Low Air Temperatures. When the official National Weather Service forecast for the construction area predicts a low of 0 °C (32 °F), or lower, or if the actual temperature drops to 0 °C (32 °F), or lower, concrete less than 72 hours old shall be provided at least the following protection.”

Delete Article 1020.13(d) and Articles 1020.13(d)(1),(2),(3),(4) of the Standard Specifications.

Revise the first five paragraphs of Article 1020.13(e) of the Standard Specifications to read:

“Protection of Portland Cement Concrete Structures From Low Air Temperatures. When the official National Weather Service Forecast for the construction area predicts a low below 7 °C (45 °F), or if the actual temperature drops below 7 °C (45 °F), 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. If winter construction is specified, the Contractor shall proceed with the construction, including concrete, excavation, pile driving, 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 by the Contractor at his/her own expense.”

Add the following at the end of the third paragraph of Article 1020.13(e)(1) of the Standard Specifications:

“The Contractor shall provide means for checking the temperature of the surface of the concrete during the protection period.”

Revise the second sentence of the first paragraph of Article 1020.13(e)(2) of the Standard Specifications to read:

“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.”

Delete the last sentence of the first paragraph of Article 1020.13(e)(3) of the Standard Specifications.

Add the following Article to Section 1022 of the Standard Specifications:

“1022.06 Cotton Mats. Cotton mats shall consist of a cotton fill material, minimum 400 g/sq m (11.8 oz/sq yd), covered with unsized cloth or burlap, minimum 200 g/sq m (5.9 oz/sq yd), and be tufted or stitched to maintain stability.

Cotton mats shall be in a condition satisfactory to the Engineer. Any tears or holes in the mats shall be repaired.

Add the following Article to Section 1022 of the Standard Specifications:

“1022.07 Linseed Oil Emulsion Curing Compound. Linseed oil emulsion curing compound shall be composed of a blend of boiled linseed oil and high viscosity, heavy bodied linseed oil emulsified in a water solution. The curing compound shall meet the requirements of a Type I, II, or III according to Article 1022.01, except the drying time requirement will be waived. The oil phase shall be 50 ± 4 percent by volume. The oil phase shall consist of 80 percent by mass (weight) boiled linseed oil and 20 percent by mass (weight) Z-8 viscosity linseed oil. The water phase shall be 50 ± 4 percent by volume.”

Revise Article 1020.14 of the Standard Specifications to read:

“1020.14 Temperature Control for Placement. Temperature control for concrete placement shall conform to the following requirements:

- (a) Temperature Control other than Structures. The temperature of concrete immediately before placing, shall be not less than 10 °C (50 °F) nor more than 32 °C (90 °F). Aggregates and/or water shall be heated or cooled as necessary to produce concrete within these temperature limits.

When the temperature of the plastic concrete reaches 30 °C (85 °F), an approved retarding admixture shall be used or the approved water reducing admixture in use shall have its dosage increased by 50 percent over the dosage recommended on the Department’s Approved List of Concrete Admixtures for the temperature experienced.

The amount of retarding admixture to be used will be determined by the Engineer. This requirement may be waived by the Engineer when fly ash compensated mixtures are used.

Plastic concrete temperatures up to 35 °C (96 °F), as placed, may be permitted provided job site conditions permit placement and finishing without excessive use of water on and/or overworking of the surface. The occurrence within 24 hours of unusual surface distress shall be cause to revert to a maximum 32 °C (90 °F) plastic concrete temperature.

Concrete shall not be placed when the air temperature is below 5 °C (40 °F) and falling or below 2 °C (35 °F), without permission of the Engineer. When placing of concrete is authorized during cold weather, the Engineer may require the water and/or the aggregates to be heated to not less than 20 °C (70 °F) nor more than 65 °C (150 °F). The aggregates may be heated by either steam or dry heat prior to being placed in the mixer. The apparatus used shall heat the mass uniformly and shall be so arranged as to preclude the possible occurrence of overheated areas which might damage the materials. No frozen aggregates shall be used in the concrete.

For pavement patching, refer to Article 442.06(e) for additional information on temperature control for placement.

- (b) Temperature Control for Structures. The temperature of concrete as placed in the forms shall be not less than 10 °C (50 °F) nor more than 32 °C (90 °F). Aggregates and/or water shall be heated or cooled as necessary to produce concrete within these temperature limits. When insulated forms are used, the temperature of the concrete mixture shall not exceed 25 °C (80 °F). If the Engineer determines that heat of hydration might cause excessive temperatures in the concrete, the concrete shall be placed at a temperature between 10 °C (50 °F) and 15 °C (60 °F), per the Engineer's instructions. When concrete is placed in contact with previously placed concrete, the temperature of the concrete may be increased as required to offset anticipated heat loss.

Concrete shall not be placed when the air temperature is below 7 °C (45 °F) and falling or below 4 °C (40 °F), without permission of the Engineer. When placing of concrete is authorized during cold weather, the Engineer may require the water and/or the aggregates to be heated to not less than 20 °C (70 °F) nor more than 65 °C (150 °F). The aggregates may be heated by either steam or dry heat prior to being placed in the mixer. The apparatus used shall heat the mass uniformly and shall be so arranged as to preclude the possible occurrence of overheated areas which might damage the materials. No frozen aggregates shall be used in the concrete.

When the temperature of the plastic concrete reaches 30 °C (85 °F), an approved retarding admixture shall be used or the approved water reducing admixture in use shall have its dosage increased by 50 percent over the dosage recommended on the Department's Approved List of Concrete Admixtures for the temperature experienced. The amount of retarding admixture to be used will be determined by the Engineer. This requirement may be waived by the Engineer when fly ash compensated mixtures are used.

- (c) Temperature. The concrete temperature shall be determined according to ASTM C 1064."

DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION (BDE)

Effective: September 1, 2000

Revised: June 1, 2004

FEDERAL OBLIGATION. The Department of Transportation, as a recipient of federal financial assistance, is required to take all necessary and reasonable steps to ensure nondiscrimination in the award and administration of contracts. Consequently, the federal regulatory provisions of 49 CFR part 26 apply to this contract concerning the utilization of disadvantaged business enterprises. This Special Provision will also be used by the Department to satisfy the requirements of the Business Enterprise for Minorities, Females, and Persons with Disabilities Act, 30 ILCS 575. For the purposes of this Special Provision, a disadvantaged business enterprise (DBE) means a business certified by the Department in accordance with the requirements of 49 CFR part 26 and listed in the DBE Directory or most recent addendum.

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

The contractor, subrecipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR part 26 in the award and administration of federally-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate.

OVERALL GOAL SET FOR THE DEPARTMENT. As a requirement of compliance with 49 CFR part 26, the Department has set an overall goal for DBE participation in its federally assisted contracts. That goal applies to all federal-aid funds the Department will expend in its federally assisted contracts for the subject reporting fiscal year. The Department is required to make a good faith effort to achieve the overall goal. The dollar amount paid to all approved DBE firms performing work called for in this contract is eligible to be credited toward fulfillment of the Department's overall goal.

CONTRACT GOAL TO BE ACHIEVED BY THE CONTRACTOR. This contract includes a specific DBE utilization goal established by the Department. The goal has been included because the Department has determined that the work of this contract has subcontracting opportunities that may be suitable for performance by DBE companies. This determination is based on an assessment of the type of work, the location of the work, and the availability of DBE companies to do a part of the work. The assessment indicates that, in the absence of unlawful discrimination, and in an arena of fair and open competition, DBE companies can be expected to perform 23.00% of the work. This percentage is set as the DBE participation goal for this contract. Consequently, in addition to the other award criteria established for this contract, the Department will award this contract to a bidder who makes a good faith effort to meet this goal of DBE participation in the performance of the work. A bidder makes a good faith effort for award consideration if either of the following is done in accordance with the procedures set forth in this Special Provision:

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

DBE LOCATOR REFERENCES. Bidders may consult the DBE Directory as a reference source for DBE companies certified by the Department. In addition, the Department maintains a letting and item specific DBE locator information system whereby DBE companies can register their interest in providing quotes on particular bid items advertised for letting. Information concerning DBE companies willing to quote work for particular contracts may be obtained by contacting the Department's Bureau of Small Business Enterprises at telephone number (217)785-4611, or by visiting the Department's web site at www.dot.state.il.us.

BIDDING PROCEDURES. Compliance with the bidding procedures of this Special Provision is required prior to the award of the contract and the failure of the as-read low bidder to comply will render the bid nonresponsive.

- (a) In order to assure the timely award of the contract, the as-read low bidder must submit a Disadvantaged Business Utilization Plan on Department form SBE 2026 within seven (7) working days after the date of letting. To meet the seven (7) day requirement, the bidder may send the Plan by certified mail or delivery service within the seven (7) working day period. If a question arises concerning the mailing date of a Plan, the mailing date will be established by the U.S. Postal Service postmark on the original certified mail receipt from the U.S. Postal Service or the receipt issued by a delivery service. It is the responsibility of the as-read low bidder to ensure that the postmark or receipt date is affixed within the seven (7) working days if the bidder intends to rely upon mailing or delivery to satisfy the submission day requirement. The Plan is to be submitted to the Department of Transportation, Bureau of Small Business Enterprises, Contract Compliance Section, 2300 South Dirksen Parkway, Room 319, Springfield, Illinois 62764 (Telefax: (217)785-1524). It is the responsibility of the bidder to obtain confirmation of telefax delivery. The Department will not accept a Utilization Plan if it does not meet the seven (7) day submittal requirement, and the bid will be declared nonresponsive. In the event the bid is declared nonresponsive due to a failure to submit a Plan or failure to comply with the bidding procedures set forth herein, the Department may elect to cause the forfeiture of the penal sum of the bidder's proposal guaranty, and may deny authorization to bid the project if re-advertised for bids. The Department reserves the right to invite any other bidder to submit a Utilization Plan at any time for award consideration or to extend the time for award.
- (b) The Utilization Plan shall indicate that the bidder either has obtained sufficient DBE participation commitments to meet the contract goal or has not obtained enough DBE participation commitments in spite of a good faith effort to meet the goal. The Utilization Plan shall further provide the name, telephone number and telefax number of a responsible official of the bidder designated for purposes of notification of plan approval or disapproval under the procedures of this Special Provision.
- (c) The Utilization Plan shall include a DBE Participation Commitment Statement, Department form SBE 2025, for each DBE proposed for the performance of work to achieve the contract goal. The signatures on these forms must be original signatures. All elements of information indicated on the said form shall be provided, including but not limited to the following:
 - (1) The name and address of each DBE to be used;
 - (2) A description, including pay item numbers, of the commercially useful work to be done by each DBE;

- (3) The price to be paid to each DBE for the identified work specifically stating the quantity, unit price and total subcontract price for the work to be completed by the DBE. If partial pay items are to be performed by the DBE, indicate the portion of each item, a unit price where appropriate and the subcontract price amount;
 - (4) A commitment statement signed by the bidder and each DBE evidencing availability and intent to perform commercially useful work on the project; and
 - (5) If the bidder is a joint venture comprised of DBE firms and non-DBE firms, the plan must also include a clear identification of the portion of the work to be performed by the DBE partner(s).
- (d) The contract will not be awarded until the Utilization Plan submitted by the bidder is approved. The Utilization Plan will be approved by the Department if the Plan commits sufficient commercially useful DBE work performance to meet the contract goal. The Utilization Plan will not be approved by the Department if the Plan does not commit sufficient DBE performance to meet the contract goal unless the bidder documents that it made a good faith effort to meet the goal. The good faith procedures of Section VIII of this special provision apply. If the Utilization Plan is not approved because it is deficient in a technical matter, unless waived by the Department, the bidder will be notified and will be allowed no less than a five (5) working day period in order to cure the deficiency.

CALCULATING DBE PARTICIPATION. The Utilization Plan values represent work anticipated to be performed and paid for upon satisfactory completion. The Department is only able to count toward the achievement of the overall goal and the contract goal the value of payments made for the work actually performed by DBE companies. In addition, a DBE must perform a commercially useful function on the contract to be counted. A commercially useful function is generally performed when the DBE is responsible for the work and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. The Department and Contractor are governed by the provisions of 49 CFR part 26.55(c) on questions of commercially useful functions as it affects the work. Specific counting guidelines are provided in 49 CFR part 26.55, the provisions of which govern over the summary contained herein.

- (a) DBE as the Contractor: 100% goal credit for that portion of the work performed by the DBE's own forces, including the cost of materials and supplies. Work that a DBE subcontracts to a non-DBE firm does not count toward the DBE goals.
- (b) DBE as a joint venture Contractor: 100% goal credit for that portion of the total dollar value of the contract equal to the distinct, clearly defined portion of the work performed by the DBE's own forces.
- (c) DBE as a subcontractor: 100% goal credit for the work of the subcontract performed by the DBE's own forces, including the cost of materials and supplies, excluding the purchase of materials and supplies or the lease of equipment by the DBE subcontractor from the prime contractor or its affiliates. Work that a DBE subcontractor in turn subcontracts to a non-DBE firm does not count toward the DBE goal.
- (d) DBE as a trucker: 100% goal credit for trucking participation provided the DBE is responsible for the management and supervision of the entire trucking operation for which it is responsible. At least one truck owned, operated, licensed and insured by the

DBE must be used on the contact. Credit will be given for the full value of all such DBE trucks operated using DBE employed drivers. Goal credit will be limited to the value of the reasonable fee or commission received by the DBE if trucks are leased from a non-DBE company.

(e) DBE as a material supplier:

- (1) 60% goal credit for the cost of the materials or supplies purchased from a DBE regular dealer.
- (2) 100% goal credit for the cost of materials or supplies obtained from a DBE manufacturer.
- (3) 100% credit for the value of reasonable fees and commissions for the procurement of materials and supplies if not a regular dealer or manufacturer.

GOOD FAITH EFFORT PROCEDURES. If the bidder cannot obtain sufficient DBE commitments to meet the contract goal, the bidder must document in the Utilization Plan the good faith efforts made in the attempt to meet the goal. This means that the bidder must show that all necessary and reasonable steps were taken to achieve the contract goal. Necessary and reasonable steps are those which could reasonably be expected to obtain sufficient DBE participation. The Department will consider the quality, quantity and intensity of the kinds of efforts that the bidder has made. Mere *pro forma* efforts are not good faith efforts; rather, the bidder is expected to have taken those efforts that would be reasonably expected of a bidder actively and aggressively trying to obtain DBE participation sufficient to meet the contract goal.

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

- (1) Soliciting through all reasonable and available means (e.g. attendance at pre-bid meetings, advertising and/or written notices) the interest of all certified DBE companies that have the capability to perform the work of the contract. The bidder must solicit this interest within sufficient time to allow the DBE companies to respond to the solicitation. The bidder must determine with certainty if the DBE companies are interested by taking appropriate steps to follow up initial solicitations.
- (2) Selecting portions of the work to be performed by DBE companies in order to increase the likelihood that the DBE goals will be achieved. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate DBE participation, even when the prime contractor might otherwise prefer to perform these work items with its own forces.
- (3) Providing interested DBE companies with adequate information about the plans, specifications, and requirements of the contract in a timely manner to assist them in responding to a solicitation.
- (4) a. Negotiating in good faith with interested DBE companies. It is the bidder's responsibility to make a portion of the work available to DBE subcontractors and suppliers and to select those portions of the work or material needs consistent

with the available DBE subcontractors and suppliers, so as to facilitate DBE participation. Evidence of such negotiation includes the names, addresses, and telephone numbers of DBE companies that were considered; a description of the information provided regarding the plans and specifications for the work selected for subcontracting; and evidence as to why additional agreements could not be reached for DBE companies to perform the work.

- b. A bidder using good business judgment would consider a number of factors in negotiating with subcontractors, including DBE subcontractors, and would take a firm's price and capabilities as well as contract goals into consideration. However, the fact that there may be some additional costs involved in finding and using DBE companies is not in itself sufficient reason for a bidder's failure to meet the contract DBE goal, as long as such costs are reasonable. Also, the ability or desire of a prime contractor to perform the work of a contract with its own organization does not relieve the bidder of the responsibility to make good faith efforts. Prime contractors are not, however, required to accept higher quotes from DBE companies if the price difference is excessive or unreasonable.
- (5) Not rejecting DBE companies as being unqualified without sound reasons based on a thorough investigation of their capabilities. The contractor's standing within its industry, membership in specific groups, organizations, or associations and political or social affiliations (for example union vs. non-union employee status) are not legitimate causes for the rejection or non-solicitation of bids in the contractor's efforts to meet the project goal.
 - (6) Making efforts to assist interested DBE companies in obtaining bonding, lines of credit, or insurance as required by the recipient or contractor.
 - (7) Making efforts to assist interested DBE companies in obtaining necessary equipment, supplies, materials, or related assistance or services.
 - (8) Effectively using the services of available minority/women community organizations; minority/women contractors' groups; local, state, and Federal minority/women business assistance offices; and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and placement of DBE companies.
- (b) If the Department determines that the Contractor has made a good faith effort to secure the work commitment of DBE companies to meet the contract goal, the Department will award the contract provided that it is otherwise eligible for award. If the Department determines that a good faith effort has not been made, the Department will notify the bidder of that preliminary determination by contacting the responsible company official designated in the Utilization Plan. The preliminary determination shall include a statement of reasons why good faith efforts have not been found, and may include additional good faith efforts that the bidder could take. The notification will designate a five (5) working day period during which the bidder shall take additional efforts. The bidder is not limited by a statement of additional efforts, but may take other action beyond any stated additional efforts in order to obtain additional DBE commitments. The bidder shall submit an amended Utilization Plan if additional DBE commitments to meet the contract goal are secured. If additional DBE commitments sufficient to meet the contract goal are not secured, the bidder shall report the final good faith efforts made in the time allotted. All additional efforts taken by the bidder will be considered as part of

the bidder's good faith efforts. If the bidder is not able to meet the goal after taking additional efforts, the Department will make a pre-final determination of the good faith efforts of the bidder and will notify the designated responsible company official of the reasons for an adverse determination.

- (c) The bidder may request administrative reconsideration of a pre-final determination adverse to the bidder within the five (5) working days after the notification date of the determination by delivering the request to the Department of Transportation, Bureau of Small Business Enterprises, Contract Compliance Section, 2300 South Dirksen Parkway, Room 319, Springfield, Illinois 62764 (Telefax: (217)785-1524). Deposit of the request in the United States mail on or before the fifth business day shall not be deemed delivery. The pre-final determination shall become final if a request is not made and delivered. A request may provide additional written documentation and/or argument concerning the issue of whether an adequate good faith effort was made to meet the contract goal. In addition, the request shall be considered a consent by the bidder to extend the time for award. The request will be forwarded to the Department's Reconsideration Officer. The Reconsideration Officer will extend an opportunity to the bidder to meet in person in order to consider all issues of whether the bidder made a good faith effort to meet the goal. After the review by the Reconsideration Officer, the bidder will be sent a written decision within ten (10) working days after receipt of the request for reconsideration, explaining the basis for finding that the bidder did or did not meet the goal or make adequate good faith efforts to do so. A final decision by the Reconsideration Officer that a good faith effort was made shall approve the Utilization Plan submitted by the bidder and shall clear the contract for award. A final decision that a good faith effort was not made shall render the bid nonresponsive.

CONTRACT COMPLIANCE. Compliance with this Special Provision is an essential part of the contract. The Department is prohibited by federal regulations from crediting the participation of a DBE included in the Utilization Plan toward either the contract goal or the Department's overall goal until the amount to be applied toward the goals has been paid to the DBE. The following administrative procedures and remedies govern the compliance by the Contractor with the contractual obligations established by the Utilization Plan. After approval of the Plan and award of the contract, the Utilization Plan and individual DBE Participation Statements become part of the contract. If the contractor did not succeed in obtaining enough DBE participation to achieve the advertised contract goal, and the Utilization Plan was approved and contract awarded based upon a determination of good faith, the total dollar value of DBE work calculated in the approved Utilization Plan as a percentage of the awarded contract value shall become the amended contract goal.

- (a) No amendment to the Utilization Plan may be made without prior written approval from the Department's Bureau of Small Business Enterprises. All requests for amendment to the Utilization Plan shall be submitted to the Department of Transportation, Bureau of Small Business Enterprises, Contract Compliance Section, 2300 South Dirksen Parkway, Room 319, Springfield, Illinois 62764. Telephone number (217) 785-4611. Telefax number (217) 785-1524.
- (b) All work indicated for performance by an approved DBE shall be performed, managed and supervised by the DBE executing the Participation Statement. The Contractor shall not terminate for convenience a DBE listed in the Utilization Plan and then perform the work of the terminated DBE with its own forces, those of an affiliate or those of another subcontractor, whether DBE or not, without first obtaining the written consent of the

Bureau of Small Business Enterprises to amend the Utilization Plan. If a DBE listed in the Utilization Plan is terminated for reasons other than convenience, or fails to complete its work on the contract for any reason, the Contractor shall make good faith efforts to find another DBE to substitute for the terminated DBE. The good faith efforts shall be directed at finding another DBE to perform at least the same amount of work under the contract as the DBE that was terminated, but only to the extent needed to meet the contract goal or the amended contract goal. The Contractor shall notify the Bureau of Small Business Enterprises of any termination for reasons other than convenience, and shall obtain approval for inclusion of the substitute DBE in the Utilization Plan. If good faith efforts following a termination of a DBE for cause are not successful, the Contractor shall contact the Bureau and provide a full accounting of the efforts undertaken to obtain substitute DBE participation. The Bureau will evaluate the good faith efforts in light of all circumstances surrounding the performance status of the contract, and determine whether the contract goal should be amended.

- (c) The Contractor shall maintain a record of payments for work performed to the DBE participants. The records shall be made available to the Department for inspection upon request. After the performance of the final item of work or delivery of material by a DBE and final payment therefor to the DBE by the Contractor, but not later than thirty (30) calendar days after payment has been made by the Department to the Contractor for such work or material, the Contractor shall submit a DBE Payment Report on Department form SBE 2115 to the District Engineer. If full and final payment has not been made to the DBE, the Report shall indicate whether a disagreement as to the payment required exists between the Contractor and the DBE or if the Contractor believes that the work has not been satisfactorily completed. If the Contractor does not have the full amount of work indicated in the Utilization Plan performed by the DBE companies indicated in the Plan, the Department will deduct from contract payments to the Contractor the amount of the goal not achieved as liquidated and ascertained damages.
- (d) The Department reserves the right to withhold payment to the Contractor to enforce the provisions of this Special Provision. Final payment shall not be made on the contract until such time as the Contractor submits sufficient documentation demonstrating achievement of the goal in accordance with this Special Provision or after liquidated damages have been determined and collected.

EPOXY COATINGS FOR STEEL REINFORCEMENT (BDE)

Effective: April 1, 2003

Revise Article 1006.10(b)(2) of the Standard Specifications to read:

- “(2) Epoxy Coated Reinforcement Bars. Epoxy coated reinforcement bars shall conform to the requirements of AASHTO M 284M (M 284), except:
 - a. The maximum thickness of epoxy coating on spiral reinforcement, coated after fabrication, shall be 0.5 mm (20 mils).
 - b. No more than eight of the holidays permitted shall be in any 300 mm (1 ft) of length for continuity of coating.

The epoxy coating applicator shall be certified under the Concrete Reinforcing Steel Institute's (CRSI) Epoxy Plant Certification Program.

The epoxy coater shall provide access for the Engineer at any time during production or shipping. Random bars may be checked at the epoxy coater's facility or the jobsite for coating uniformity, thickness and discontinuity; cracks on the bends; and other damaged areas. Upon request, the coater shall provide samples for testing by the Engineer.

Bars may be sheared or sawn to length after coating, provided end damage to coating does not extend more than 15 mm (1/2 in.) back and the cut end is patched before any visible oxidation appears. Flame cutting will not be permitted."

Add the following paragraph after the first paragraph of Article 1006.11(b) of the Standard Specifications:

"The epoxy coating applicator shall be certified under the Concrete Reinforcing Steel Institute's (CRSI) Epoxy Plant Certification Program."

EROSION AND SEDIMENT CONTROL DEFICIENCY DEDUCTION (BDE)

Effective: August 1, 2001

Revised: November 1, 2001

When the Engineer is notified or determines an erosion and/or sediment control deficiency(s) exists, he/she will direct the Contractor in writing to correct the deficiency. The Contractor shall then correct the deficiency within 24 hours. The deficiency may be any lack of repair, maintenance, or implementation of erosion and/or sediment control devices included in the contract, or any failure to comply with the conditions of the National Pollutant Discharge Elimination System (NPDES) Storm Water Permit for Construction Site Activities.

If the Contractor fails to correct the deficiency(s) within 24 hours, a daily monetary deduction will be imposed for each calendar day or fraction thereof the deficiency exists. The time period will begin with the initial written notification to the Contractor and end with the Engineer's acceptance of the corrected work. The per calendar day deduction will be either \$1000.00 or 0.05 percent of the awarded contract value, whichever is greater.

If the Contractor fails to respond, the Engineer may correct the deficiencies and deduct the cost from monies due or which may become due the Contractor. This corrective action shall in no way relieve the Contractor of his/her contractual requirements or responsibilities.

FLAGGER VESTS (BDE)

Effective: April 1, 2003

Revise the first sentence of Article 701.04(c)(1) of the Standard Specifications to read:

“The flagger shall be stationed to the satisfaction of the Engineer and be equipped with a fluorescent orange, fluorescent yellow/green or a combination of fluorescent orange and fluorescent yellow/green vest meeting the requirements of the American National Standards Institute specification ANSI/ISEA 107-1999 for Conspicuity Class 2 garments and approved flagger traffic control signs conforming to Standard 702001 and Article 702.05(e).”

Revise Article 701.04(c)(6) of the Standard Specifications to read:

“(6) Nighttime Flagging. The flagger station shall be lit by additional overhead lighting other than streetlights. The flagger shall be equipped with a fluorescent orange or fluorescent orange and fluorescent yellow/green garment meeting the requirements of the American National Standards Institute specification ANSI/ISEA 107-1999 for Conspicuity Class 2 garments.”

FREEZE-THAW RATING (BDE)

Effective: November 1, 2002

Revise the first sentence of Article 1004.02(f) of the Standard Specifications to read:

“When coarse aggregate is used to produce portland cement concrete for base course, base course widening, pavement, driveway pavement, sidewalk, shoulders, curb, gutter, combination curb and gutter, median, paved ditch or their repair using concrete, the gradation permitted will be determined from the results of the Department’s Freeze-Thaw Test.”

HAND VIBRATOR (BDE)

Effective: November 1, 2003

Add the following paragraph to Article 1103.17(a) of the Standard Specifications:

“The vibrator shall have a non-metallic head for areas containing epoxy coated reinforcement. The head shall be coated by the manufacturer. The hardness of the non-metallic head shall be less than the epoxy coated reinforcement, resulting in no damage to the epoxy coating. Slip-on covers will not be allowed.”

IMPACT ATTENUATORS, TEMPORARY (BDE)

Effective: November 1, 2003

Revised: April 1, 2004

Description. This work shall consist of furnishing, installing, maintaining, and removing temporary impact attenuators of the category and test level specified.

Materials. Materials shall meet the requirements of the impact attenuator manufacturer and the following:

| Item | Article/Section |
|--|---------------------------|
| (a) Fine Aggregate (Note 1)..... | 1003.01 |
| (b) Steel Posts, Structural Shapes, and Plates | 1006.04 |
| (c) Rail Elements, End Section Plates, and Splice Plates | 1006.25 |
| (d) Bolts, Nuts, Washers and Hardware | 1006.25 |
| (e) Hollow Structural Tubing | 1006.27(b) |
| (f) Wood Posts and Wood Blockouts..... | 1007.01, 1007.02, 1007.06 |
| (g) Preservative Treatment..... | 1007.12 |
| (h) Rapid Set Mortar (Note 2) | |

Note 1. Fine aggregate shall be FA-1 or FA-2, Class A quality. The sand shall be unbagged and shall have a maximum moisture content of five percent.

Note 2. Rapid set mortar shall be obtained from the Department's approved list of Packaged, Dry, Rapid Hardening Cementitious Materials for Concrete Repairs. For a rapid set mortar mixture, one part packaged rapid set cement shall be combined with two parts fine aggregate, by volume or a packaged rapid set mortar shall be used. Mixing of the rapid set mortar shall be according to the manufacturer's instructions.

CONSTRUCTION REQUIREMENTS

General. Impact Attenuators shall meet the testing criteria contained in National Cooperative Highway Research Program (NCHRP) Report 350 for the test level specified and shall be on the Department's approved list.

Installation. Regrading of slopes or approaches for the installation shall be as shown on the plans.

Attenuator bases, when required by the manufacturer, shall be constructed on a prepared subgrade according to the manufacturer's specifications. The surface of the base shall be slightly sloped or crowned to facilitate drainage.

Impact attenuators shall be installed according to the manufacturer's specifications and include all necessary transitions between the impact attenuator and the item to which it is attached.

When water filled attenuators are used between November 1 and April 15, they shall contain anti-freeze according to the manufacturer's recommendations.

Markings. Sand module impact attenuators shall be striped with alternating reflectorized Type AA or Type AP fluorescent orange and reflectorized white horizontal, circumferential stripes. There shall be at least two of each stripe on each module.

Other types of impact attenuators shall have a terminal marker applied to their nose and reflectors along their sides.

Maintenance. All maintenance of the impact attenuators shall be the responsibility of the Contractor until removal is directed by the Engineer.

Relocate. When relocation of temporary impact attenuators is specified, they shall be removed, relocated and reinstalled at the new location. The reinstallation requirements shall be the same as those for a new installation.

Removal. When the Engineer determines the temporary impact attenuators are no longer required, the installation shall be dismantled with all hardware becoming the property of the Contractor.

Surplus material shall be disposed of according to Article 202.03. Anti-freeze, when present, shall be disposed of/recycled according to local ordinances.

When impact attenuators have been anchored to the pavement, the anchor holes shall be repaired with rapid set mortar. Only enough water to permit placement and consolidation by rodding shall be used and the material shall be struck-off flush.

Method of Measurement. This work will be measured for payment as each, where each is defined as one complete installation.

Basis of Payment. This work will be paid for at the contract unit price per each for IMPACT ATTENUATORS, TEMPORARY (FULLY REDIRECTIVE, NARROW); IMPACT ATTENUATORS, TEMPORARY (FULLY REDIRECTIVE, WIDE); IMPACT ATTENUATORS, TEMPORARY (SEVERE USE, NARROW); IMPACT ATTENUATORS, TEMPORARY (SEVERE USE, WIDE); or IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE) of the test level specified.

Relocation of the devices will be paid for at the contract unit price per each for IMPACT ATTENUATORS, RELOCATE (FULLY REDIRECTIVE); IMPACT ATTENUATORS, RELOCATE (SEVERE USE); or IMPACT ATTENUATORS, RELOCATE (NON-REDIRECTIVE); of the test level specified.

Regrading of slopes or approaches will be paid for according to Section 202 and/or Section 204 of the Standard Specifications.

INLET FILTERS (BDE)

Effective: August 1, 2003

Add the following to Article 280.02 of the Standard Specifications:

“(k) Inlet Filters..... 1081.15(h)”

Add the following paragraph after the first paragraph of Article 280.04(c) of the Standard Specifications:

“When specified, drainage structures shall be protected with inlet filters. Inlet filters shall be installed either directly on the drainage structure or under the grate of the drainage structure resting on the lip of the frame. The fabric bag shall hang down into the drainage structure. Prior to ordering materials, the Contractor shall determine the size and shape of the various drainage structures being protected.”

Revise Article 280.07(d) of the Standard Specifications to read:

“(d) Inlet and Pipe Protection. This work will be paid for at the contract unit price per each for INLET AND PIPE PROTECTION.

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

Add the following to Article 1081.15 of the Standard Specifications:

“(h) Inlet Filters. An inlet filter shall consist of a steel frame with a two piece geotextile fabric bag attached with a stainless steel band and locking cap that is suspended from the frame. A clean, used bag and a used steel frame in good condition meeting the approval of the Engineer may be substituted for new materials. Materials for the inlet filter assembly shall conform to the following requirements:

(1) Frame Construction. Steel shall conform to Article 1006.04.

Frames designed to fit under a grate shall include an overflow feature that is welded to the frame’s ring. The overflow feature shall be designed to allow full flow of water into the structure when the filter bag is full. The dimensions of the frame shall allow the drainage structure grate to fit into the inlet filter assembly frame opening. The assembly frame shall rest on the inside lip of the drainage structure frame for the full variety of existing and proposed drainage structure frames that are present on this contract. The inlet filter assembly frame shall not cause the drainage structure grate to extend higher than 6 mm (1/4 in.) above the drainage structure frame.

(2) Grate Lock. When the inlet is located in a traffic lane, a grate lock shall be used to secure the grate to the frame. The grate lock shall conform to the manufacturer’s requirements for materials and installation.

(3) Geotextile Fabric Bag. The sediment bag shall be constructed of an inner filter bag and an outer reinforcement bag.

a. Inner Filter Bag. The inner filter bag shall be constructed of a polypropylene geotextile fabric with a minimum silt and debris capacity of 0.06 cu m (2.0 cu ft). The bag shall conform to the following requirements:

| Inner Filter Bag | | |
|-------------------------|-------------|-------------------------------|
| Material Property | Test Method | Minimum Avg. Roll Value |
| Grab Tensile Strength | ASTM D 4632 | 45 kg (100 lb) |
| Grab Tensile Elongation | ASTM D 4632 | 50% |
| Puncture Strength | ASTM D 4833 | 29 kg (65 lb) |
| Trapezoidal Tear | ASTM D 4533 | 20 kg (45 lb) |
| UV Resistance | ASTM D 4355 | 70% at 500 hours |
| Actual Open Size | ASTM D 1420 | 212 µm (No. 70 sieve US) |
| Permittivity | ASTM D 4491 | 2.0/sec |
| Water Flow Rate | ASTM D 4491 | 5900 Lpm/sq m (145 gpm/sq ft) |

b. Outer Reinforcement Bag. The outer reinforcement bag shall be constructed of polyester mesh material that conforms to the following requirements:

| Outer Reinforcement Bag | | |
|-------------------------|-------------|----------------------------------|
| Material Property | Test Method | Value |
| Content | ASTM D 629 | Polyester |
| Weight | ASTM D 3776 | 155 g/sq m (4.55 oz/sq yd) ±15% |
| Whales (holes) | ASTM D 3887 | 7.5 ± 2 holes/25 mm (1 in.) |
| Chorses (holes) | ASTM D 3887 | 15.5 ± 2holes/25 mm (1 in.) |
| Instronball Burst | ASTM D 3887 | 830 kPa (120 psi) min. |
| Thickness | ASTM D 1777 | 1.0 ± 0.1 mm (0.040 ± 0.005 in.) |

- (4) Certification. The manufacturer shall furnish a certification with each shipment of inlet filters, stating the amount of product furnished, and that the material complies with these requirements.”

MINIMUM LANE WIDTH WITH LANE CLOSURE (BDE)

Effective: January 1, 2005

Add the following paragraph after the eighth paragraph of Article 701.04(a) of the Standard Specifications.

“The minimum lane width adjacent to a closed lane during paving, patching, and other moving operations on freeways and expressways shall be a minimum of 3 m (10 ft). The 3 m (10 ft) shall be clear, unobstructed, and free of channelizing devices or other obstacles.”

PARTIAL PAYMENTS (BDE)

Effective: September 1, 2003

Revise Article 109.07 of the Standard Specifications to read:

“**109.07 Partial Payments.** Partial payments will be made as follows:

- (a) Progress Payments. At least once each month, the Engineer will make a written estimate of the amount of work performed in accordance with the contract, and the value thereof at the contract unit prices. The amount of the estimate approved as due for payment will be vouchered by the Department and presented to the State Comptroller for payment. No amount less than \$1000.00 will be approved for payment other than the final payment.

The failure to perform any requirement, obligation, or term of the contract by the Contractor shall be reason for withholding any progress payments until the Department determines that compliance has been achieved. Furthermore, progress payments may be reduced by liens filed pursuant to Section 23(c) of the Mechanics Lien Act, 770 ILCS 60/23(c).

- (b) Material Allowances. At the discretion of the Department, payment may be made for materials, prior to their use in the work, when satisfactory evidence is presented by the Contractor. Satisfactory evidence includes justification for the allowance (to expedite the work, meet project schedules, regional or national material shortages, etc.),

documentation of material and transportation costs, and evidence that such material is properly stored on the project or at a secure location acceptable and accessible to the Department.

Material allowances will be considered only for nonperishable materials when the cost, including transportation, exceeds \$10,000 and such materials are not expected to be utilized within 60 days of the request for the allowance. For contracts valued under \$500,000, the minimum \$10,000 requirement may be met by combining the principal (material) product of no more than two contract items. An exception to this two item limitation may be considered for any contract regardless of value for items in which material (products) are similar except for type and/or size.

Material allowances shall not exceed the value of the contract items in which used and shall not include the cost of installation or related markups. Amounts paid by the Department for material allowances will be deducted from estimates due the Contractor as the material is used. Two-sided copies of the Contractor's cancelled checks for materials and transportation must be furnished to the Department within 60 days of payment of the allowances or the amounts will be reclaimed by the Department."

PAYMENTS TO SUBCONTRACTORS (BDE)

Effective: June 1, 2000

Revised: September 1, 2003

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 no later than 30 days from the receipt of each payment made to the Contractor.

State law addresses the timing of payments to be made to subcontractors. Section 7 of the Prompt Payment Act, 30 ILCS 540/7, generally requires that when a Contractor receives any payment from the Department, the Contractor is required to make corresponding, proportional payments to each subcontractor performing work within 15 calendar days after receipt of the state payment. Section 7 of the State Prompt Payment Act further provides that interest in the amount of 2% per month, in addition to the payment due, shall be paid to any subcontractor 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 throughout the contracting chain.

This Special Provision establishes the required federal contract clause, and adopts the 15 calendar day requirement of the Act for purposes of compliance with the federal regulation regarding payments to subcontractors. This contract is subject to the following payment obligations.

As progress payments are made to the Contractor in accordance with Article 109.07 of the Standard Specifications for Road and Bridge Construction, the Contractor shall make a corresponding partial payment within 15 calendar days to each subcontractor in proportion to the work satisfactorily completed by each subcontractor. The proportionate amount of partial payment due to each subcontractor 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 shall be paid in full within 15 calendar days after the subcontractor's work has been satisfactorily completed. The Contractor shall hold no retainage from the subcontractors.

This Special Provision does not create any rights in favor of any subcontractor against the State of Illinois or authorize any cause of action against the State of Illinois on account of any payment, nonpayment, delayed payment or interest claimed by application of the State Prompt Payment Act. The Department will neither determine the reasonableness of any cause for delay of payment nor enforce any claim to payment, including interest. Moreover, the Department will not approve any delay or postponement of the 15 day requirement. State law creates 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 in accordance with the Public Construction Bond Act, 30 ILCS 550.

PERSONAL PROTECTIVE EQUIPMENT (BDE)

Effective: July 1, 2004

All personnel, excluding flaggers, working outside of a vehicle (car or truck) within 7.6 m (25 ft) of pavement open to traffic shall wear a fluorescent orange, fluorescent yellow/green or a combination of fluorescent orange and fluorescent yellow/green vest meeting the requirements of the American National Standards Institute specification ANSI/ISEA 107-1999 for Conspicuity Class 2 garments. Other types of garments may be substituted for the vest as long as the garments have manufacturers tags identifying them as meeting the ANSI Class 2 requirement.

POLYUREA PAVEMENT MARKING (BDE)

Effective: April 1, 2004

Description. This work shall consist of furnishing and applying pavement marking lines.

The type of polyurea pavement marking applied will be determined by the type of reflective media used. Polyurea Pavement Marking Type I shall use glass beads as a reflective media. Polyurea Pavement Marking Type II shall use a combination of composite reflective elements and glass beads as a reflective media.

Polyurea-based liquid pavement markings shall only be applied by Contractors on the list of Approved Polyurea Contractors maintained by the Engineer of Operations and in effect on the date of advertisement for bids.

Materials. Materials shall meet the following requirements:

- (a) Polyurea Pavement Marking. The polyurea pavement marking material shall consist of 100 percent solid two part system formulated and designed to provide a simple volumetric mixing ratio of two components (must be two or three volumes of Part A to one volume of Part B). No volatile or polluting solvents or fillers will be allowed.
- (b) Pigmentation. The pigment content by weight of component A shall be determined by low temperature ashing according to ASTM D 3723. The pigment content shall not vary more than \pm two percent from the pigment content of the original qualified paint.

White Pigment shall be Titanium Dioxide meeting ASTM D 476 Type II, Rutile.

Yellow Pigment shall be an Organic Yellow and contain no heavy metals.

- (c) Environmental. Upon heating to application temperature, the material shall not exude fumes which are toxic or injurious to persons or property.
- (d) Daylight Reflectance. The daylight directional reflectance of the cured polyurea material (without reflective media) shall be a minimum of 80 percent (white) and 50 percent (yellow) relative to magnesium oxide when tested using a color spectrophotometer with a 45 degrees circumferential /zero degrees geometry, illuminant C, and two degrees observer angle. The color instrument shall measure the visible spectrum from 380 to 720 nm with a wavelength measurement interval and spectral bandpass of 10 nm. In addition, the color of the yellow polyurea shall visually match Color Number 33538 of Federal Standard 595a with chromaticity limits as follows:

| | | | | |
|---|-------|-------|-------|-------|
| X | 0.490 | 0.475 | 0.485 | 0.539 |
| Y | 0.470 | 0.438 | 0.425 | 0.456 |

- (e) Weathering Resistance. The polyurea marking material, when mixed in the proper ratio and applied at 0.35 to 0.41 mm (14 to 16 mils) wet film thickness to an aluminum alloy panel (Federal Test Std. No. 141, Method 2013) and allowed to cure for 72 hours at room temperature, shall be subjected to accelerated weathering for 75 hours. The accelerated weathering shall be completed by using the light and water exposure apparatus (fluorescent UV - condensation type) and tested according to ASTM G 53.

The cycle shall consist of four hours UV exposure at 50 °C (122 °F) and four hours of condensation at 40 °C (104 °F). UVB 313 bulbs shall be used. At the end of the exposure period, the material shall show no substantial change in color or gloss.

- (f) Dry Time. The polyurea pavement marking material, when mixed in the proper ratio and applied at 0.35 to 0.41 mm (14 to 16 mils) wet film thickness and with the proper saturation of reflective media, shall exhibit a no-tracking time of ten minutes or less when tested according to ASTM D 711.
- (g) Adhesion. The catalyzed polyurea pavement marking materials when applied to a 100 x 100 x 50 mm (4 x 4 x 2 in.) concrete block, shall have a degree of adhesion which results in a 100 percent concrete failure in the performance of this test.

The concrete block shall be brushed on one side and have a minimum strength of 24,100 kPa (3500 psi). A 50 mm (2 in.) square film of the mixed polyurea shall be applied to the brushed surface and allowed to cure for 72 hours at room temperature. A 50 mm (2 in.) square cube shall be affixed to the surface of the polyurea by means of an epoxy glue. After the glue has cured for 24 hours, the polyurea specimen shall be placed on a dynamic testing machine in such a fashion so that the specimen block is in a fixed position and the 50 mm (2 in.) cube (glued to the polyurea surface) is attached to the dynamometer head. Direct upward pressure shall be slowly applied until the polyurea system fails. The location of the break and the amount of concrete failure shall be recorded.

- (h) Hardness. The polyurea pavement marking materials when tested according to ASTM D 2240, shall have a shore D hardness of between 70 and 100. Films shall be cast on a rigid substrate at 0.35 to 0.41 mm (14 to 16 mils) in thickness and allowed to cure at room temperature for 72 hours before testing.

(i) Abrasion. The abrasion resistance shall be evaluated according to ASTM D 4060 using a Taber Abrader with a 1,000 gram load and CS 17 wheels. The duration of the test shall be 1,000 cycles. The loss shall be calculated by difference and be less than 120 mgs. The tests shall be run on cured samples of polyurea material which have been applied at a film thickness of 0.35 to 0.41 mm (14 to 16 mils) to code S-16 stainless steel plates. The films shall be allowed to cure at room temperature for at least 72 hours and not more than 96 hours before testing.

(j) Reflective Media. The reflective media shall meet the following requirements:

(1) Type I - The glass beads shall meet the requirements of Article 1095.07 of the Standard Specifications and the following requirements:

a. First Drop Glass Beads The first drop glass beads shall be tested by the standard visual method of large glass spheres adopted by the Department. The beads shall have a silane coating and meet the following sieve requirements:

| Sieve Size | U.S. Standard Sieve Number | % Passing (By Weight) |
|------------|----------------------------|-----------------------|
| 1.70 mm | 12 | 95-100 |
| 1.40 mm | 14 | 75-95 |
| 1.18 mm | 16 | 10-47 |
| 1.00 mm | 18 | 0-7 |
| 850 µm | 20 | 0-5 |

b. Second Drop Glass Beads. The second drop glass beads shall meet the requirements of Article 1095.07 of the Standard Specifications for Type B.

(2) Type II - The combination of microcrystalline ceramic elements and glass beads shall meet the following requirements:

a. First Drop Glass Beads. The first drop glass beads shall meet the following requirements:

1. Composition. The elements shall be composed of a titania opacified ceramic core having clear and or yellow tinted microcrystalline ceramic beads embedded to the outer surface.
2. Index of Refraction. All microcrystalline reflective elements embedded to the outer surface shall have an index of refraction of 1.8 when tested by the immersion method.
3. Acid Resistance. A sample of microcrystalline ceramic beads supplied by the manufacturer, shall show resistance to corrosion of their surface after exposure to a one percent solution (by weight) of sulfuric acid. Adding 5.7 ml (0.2 oz) of concentrated acid into the water shall make the one percent acid solution. This test shall be performed by taking a 25 x 50 mm (1 x 2 in.) sample and adhering it to the bottom of a glass tray and placing just enough acid solution to completely immerse the sample. The tray shall be covered with a piece of glass to prevent evaporation and allow the sample to be exposed for 24 hours under these conditions. The acid solution shall be decanted (do not rinse, touch, or otherwise disturb the bead surfaces) and the sample dried while

adhered to the glass tray in a 66 °C (150 °F) oven for approximately 15 minutes. Microscope examination (20X) shall show no white (corroded) layer on the entire surface.

b. Second Drop Glass Beads. The second drop glass beads shall meet the requirements of Article 1095.07 of the Standard Specifications for Type B or the following manufacturer's specification:

1. Sieve Analysis. The glass beads shall meet the following sieve requirements:

| Sieve Size | U.S. Standard Sieve Number | % Passing (By Weight) |
|------------|----------------------------|-----------------------|
| 850 μm | 20 | 100 |
| 600 μm | 30 | 75-95 |
| 300 μm | 50 | 15-35 |
| 150 μm | 100 | 0-5 |

The manufacturer of the glass beads shall certify that the treatment of the glass beads meets the requirements of the polyurea manufacturer.

2. Imperfections. The surface of the glass beads shall be free of pits and scratches. The glass beads shall be spherical in shape and shall contain a maximum of 20 percent by weight of irregular shapes when tested by the standard method using a vibratile inclined glass plate as adopted by the Department.

3. Index of Refraction. The index of refraction of the glass beads shall be a minimum of 1.50 when tested by the immersion method at 25 °C (77 °F).

(k) Packaging. Microcrystalline ceramic reflective elements and glass beads shall be delivered in approved moisture proof bags or weather resistant bulk boxes. Each carton shall be legibly marked with the manufacturer, specifications and type, lot number, and the month and year the microcrystalline ceramic reflective elements and/or glass beads were packaged. The letters and numbers used in the stencils shall be a minimum of 12.7 mm (1/2 in.) in height.

(1) Moisture Proof Bags. Moisture proof bags shall consist of at least five ply paper construction unless otherwise specified. Each bag shall contain 22.7 kg (50 lb) net.

(2) Bulk Weather Resistance Boxes. Bulk weather resistance boxes shall conform to Federal Specification PPP-8-640D Class II or latest revision. Boxes are to be weather resistant, triple wall, fluted, corrugated-fiber board. Cartons shall be strapped with two metal straps. Straps shall surround the outside perimeter of the carton. The first strap shall be located approximately 50 mm (2 in.) from the bottom of the carton and the second strap shall be placed approximately in the middle of the carton. All cartons shall be shrink wrapped for protection from moisture. Cartons shall be lined with a minimum 4 mil polyester bag and meet Interstate Commerce Commission requirements. Cartons shall be approximately 1 x 1 m (38 x 38 in.), contain 910 kg (2000 lb) of microcrystalline ceramic reflective elements and/or glass beads and be supported on a wooden pallet with fiber straps.

- (l) Packaging. The material shall be shipped to the job site in substantial containers and shall be plainly marked with the manufacturer's name and address, the name and color of the material, date of manufacture, and batch number.
- (m) Verification. Prior to approval and use of the polyurea pavement marking materials, the manufacturer shall submit a notarized certification of an independent laboratory, together with the results of all tests, stating these materials meet the requirements as set forth herein. The certification test report shall state the lot tested, manufacturer's name, brand name of polyurea and date of manufacture. The certification shall be accompanied by one 1/2 L (1 pt) samples each of Part A and Part B. Samples shall be sent in the appropriate volumes for complete mixing of Part A and Part B.
- After approval by the Department, certification by the polyurea manufacturer shall be submitted for each batch used. New independent laboratory certified test results and samples for testing by the Department shall be submitted any time the manufacturing process or paint formulation is changed. All costs of testing (other than tests conducted by the Department) shall be borne by the manufacturer.
- (n) Acceptance samples. Acceptance samples shall consist of one 1/2 L (1 pt) samples of Part A and Part B, of each lot of paint. Samples shall be sent in the appropriate volumes for complete mixing of Part A and Part B. The samples shall be submitted to the Department for testing, together with a manufacturer's certification. The certification shall state the formulation for the lot represented is essentially identical to that used for qualification testing. All, acceptance samples will be taken by a representative of the Department. The polyurea pavement marking materials shall not be used until tests are completed and they have met the requirements as set forth herein.
- (o) Material Retainage. The manufacturer shall retain the test sample for a minimum of 18 months.

Equipment. The polyurea pavement marking compounds shall be applied through equipment specifically designed to apply two component liquid materials, glass beads and/or reflective elements in a continuous and skip-line pattern. The two-component liquid materials shall be applied after being accurately metered and then mixed with a static mix tube or airless impingement mixing guns. The static mixing tube or impingement mixing guns shall accommodate plural component material systems that have a volumetric ratio of 2 to 1 or 3 to 1. This equipment shall produce the required amount of heat at the mixing head and gun tip and maintain those temperatures within the tolerances specified. The guns shall have the capacity to deliver materials from approximately 5.7 to 11.4 L/min (1.5 to 3 gal/min) to compensate for a typical range of application speeds of 10 to 13 km/h (6 to 8 mph). The accessories such as spray tip, mix chamber, and rod diameter shall be selected according to the manufacturer's specifications to achieve proper mixing and an acceptable spray pattern. The application equipment shall be maneuverable to the extent that straight lines can be followed and normal curves can be made in a true arc. This equipment shall also have as an integral part of the gun carriage, a high pressure air spray capable of cleaning the pavement immediately prior to making application.

The equipment shall be capable of spraying both yellow and white polyurea, according to the manufacturer's recommended proportions and be mounted on a truck of sufficient size and stability with an adequate power source to produce lines of uniform dimensions and prevent application failure. The truck shall have at least two polyurea tanks each of 415 L (110 gal)

minimum capacity and be equipped with hydraulic systems and agitators. It shall be capable of placing stripes on the left and right sides and placing two lines on a three-line system simultaneously with either line in a solid or intermittent pattern, in yellow or white, and applying the appropriate reflective media according to manufacturer's recommendations. All guns shall be in full view of operations at all times. The equipment shall have a metering device to register the accumulated installed quantities for each gun, each day. Each vehicle shall include at least one operator who shall be a technical expert in equipment operations and polyurea application techniques. Certification of equipment shall be provided at the pre-construction conference.

The mobile applicator shall include the following features:

- (a) Material Reservoirs. The applicator shall provide individual material reservoirs, or space for the storage of Part A and Part B of the resin composition.
- (b) Heating Equipment. The applicator shall be equipped with heating equipment of sufficient capacity to maintain the individual resin components at the manufacturer's recommended temperature of ± 2.8 °C (± 5 °F) for spray application.
- (c) Dispensing Equipment. The applicator shall be equipped with glass bead and/or reflective element dispensing equipment. The applicator shall be capable of applying the glass beads and/or reflective elements at a rate and combination indicated by the manufacturer.
- (d) Volumetric Usage. The applicator shall be equipped with metering devices or pressure gauges on the proportioning pumps as well as stroke counters to monitor volumetric usage. Metering devices or pressure gauges and stroke counters shall be visible to the Engineer.
- (e) Pavement Marking Placement. The applicator shall be equipped with all the necessary spray equipment, mixers, compressors and other appurtenances to allow for the placement of reflectorized pavement markings in a simultaneous sequence of operations.

The Contractor shall provide an accurate temperature-measuring device(s) that shall be capable of measuring the pavement temperature prior to application of the material, the material temperature at the gun tip and the material temperature prior to mixing.

CONSTRUCTION REQUIREMENTS

General. The pavement shall be cleaned by a method approved by the Engineer to remove all dirt, grease, glaze or any other material that would reduce the adhesion of the markings with minimum or no damage to the pavement surface. New PCC pavements shall be air-blast-cleaned to remove all latents.

Widths, lengths, and shapes of the cleaned surface shall be of sufficient size to include the full area of the specified pavement marking to be placed.

The cleaning operation shall be a continuous moving operation process with minimum interruption to traffic.

Markings shall be applied to the cleaned surfaces on the same calendar day. If this cannot be accomplished, the surface shall be re-cleaned prior to applying the markings. No markings shall be applied until the Engineer approves the cleaning.

The pavement markings shall be applied to the cleaned road surface, during conditions of dry weather and subsequently dry pavement surfaces at a minimum uniform wet thickness of 0.4 mm (15 mils) according to the manufacturer's installation instructions. On new bituminous course surfaces the pavement markings shall be applied at a minimum uniform wet thickness of 0.5 mm (20 mils). The application of and combination of reflective media (glass beads and/or reflective elements) shall be applied at a rate specified by the manufacturer. At the time of installation the pavement surface temperature and the ambient temperature shall be above 4 °C (40 °F) and rising. The pavement markings shall not be applied if the pavement shows any visible signs of moisture or it is anticipated that damage causing moisture, such as rain showers, may occur during the installation and set periods. The Engineer will determine the atmospheric conditions and pavement surface conditions that produce satisfactory results.

Using the application equipment, the pavement markings shall be applied in the following manner, as a simultaneous operation:

- (a) The surface shall be air-blasted to remove any dirt and residue.
- (b) The resin shall be mixed and heated according to manufacturer's recommendations and sprayed onto the pavement surface.

The edge of the center line or lane line shall be offset a minimum distance of 50 mm (2 in.) from a longitudinal crack or joint. Edge lines shall be approximately 50 mm (2 in.) from the edge of pavement. The finished center and lane lines shall be straight, with the lateral deviation of any 3 m (10 ft) line not to exceed 25 mm (1 in.).

Notification. The Contractor shall notify the Engineer 72 hours prior to the placement of the markings in order that he/she can be present during the operation. At the time of notification, the Contractor shall provide the Engineer the manufacturer and lot numbers of polyurea and reflective media that will be used.

Inspection. The polyurea pavement markings will be inspected following installation according to Article 780.10 of the Standard Specifications, except, no later than December 15, and inspected following a winter performance period that extends 180 days from December 15.

Method of Measurement. This work will be measured for payment in place, in meters (feet). Double yellow lines will be measured as two separate lines.

Basis of Payment. This work will be paid for at the contract unit price per meter (foot) for POLYUREA PAVEMENT MARKING TYPE I – LINE of the line width specified or for POLYUREA PAVEMENT MARKING TYPE II – LINE of the line width specified.

PORTABLE CHANGEABLE MESSAGE SIGNS (BDE)

Effective: November 1, 1993

Revised: April 2, 2004

Description. This work shall consist of furnishing, placing, and maintaining changeable message sign(s) at the locations(s) shown on the plans or as directed by the Engineer.

The sign(s) shall be trailer mounted. The message panel shall be at least 2.1 m (7 ft) above the pavement, present a level appearance, and be capable of displaying up to eight characters in each of three lines at a time. Character height shall be 450 mm (18 in.).

The message panel shall be of either a bulb matrix or disc matrix design controlled by an onboard computer capable of storing a minimum of 99 programmed messages for instant recall. The computer shall be capable of being programmed to accept messages created by the operator via an alpha-numeric keyboard and able to flash any six messages in sequence. The message panel shall also be capable of being controlled by a computer from a remote location via a cellular linkage. The Contractor shall supply the modem, the cellular phone, and the necessary software to run the sign from a remote computer at a location designated by the Engineer. The Contractor shall promptly program and/or reprogram the computer to provide the messages as directed by the Engineer.

The message panel shall be visible from 400 m (1/4 mile) under both day and night conditions. The letters shall be legible from 250 m (750 ft).

The sign shall include automatic dimming for nighttime operation and a power supply capable of providing 24 hours of uninterrupted service.

The Contractor shall provide all preventive maintenance efforts s(he) deems necessary to achieve uninterrupted service. If service is interrupted for any cause and not restored within 24 hours, the Engineer will cause such work to be performed as may be necessary to provide this service. The cost of such work shall be borne by the Contractor or deducted from current or future compensation due the Contractor.

When the sign(s) are displaying messages, they shall be considered a traffic control device. At all times when no message is displayed, they shall be considered equipment.

Basis of Payment. When portable changeable message signs are shown on the Standard, this work will not be paid for separately but shall be considered as included in the cost of the Standard.

For all other portable changeable message signs, this work will be paid for at the contract unit price per calendar month for each sign as CHANGEABLE MESSAGE SIGN.

PORTLAND CEMENT (BDE)

Effective: January 1, 2005

Replace the first sentence of the second paragraph of Article 1001.01 of the Standard Specifications with the following:

“For portland cement according to ASTM C 150, the addition of up to 5.0 percent limestone by mass (weight) to the cement will not be permitted. Also, the total of all organic processing additions shall not exceed 1.0 percent by mass (weight) of the cement and the total of all inorganic processing additions shall not exceed 4.0 percent by mass (weight) of the cement.”

PORTLAND CEMENT CONCRETE (BDE)

Effective: November 1, 2002

Add the following paragraph after the fourth paragraph of Article 1103.01(b) of the Standard Specifications:

“The truck mixer shall be approved before use according to the Bureau of Materials and Physical Research’s Policy Memorandum, “Approval of Concrete Plants and Delivery Trucks”.”

Add the following paragraph after the first paragraph of Article 1103.01(c) of the Standard Specifications:

“The truck agitator shall be approved before use according to the Bureau of Materials and Physical Research’s Policy Memorandum, “Approval of Concrete Plants and Delivery Trucks”.”

Add the following paragraph after the first paragraph of Article 1103.01(d) of the Standard Specifications:

“The nonagitator truck shall be approved before use according to the Bureau of Materials and Physical Research’s Policy Memorandum, “Approval of Concrete Plants and Delivery Trucks”.”

Revise the first sentence of the first paragraph of Article 1103.02 of the Standard Specifications to read:

“The plant shall be approved before production begins according to the Bureau of Materials and Physical Research’s Policy Memorandum, “Approval of Concrete Plants and Delivery Trucks”.”

PRECAST CONCRETE PRODUCTS (BDE)

Effective: July 1, 1999

Revised: November 1, 2004

Product Approval. Precast concrete products shall be produced according to the Department’s current Policy Memorandum, “Quality Control/Quality Assurance Program for Precast Concrete Products”. The Policy Memorandum applies to precast concrete products listed under the Products Key of the “Approved List of Certified Precast Concrete Producers”.

Precast Concrete Box Culverts. Add the following sentence to the end of the fourth paragraph of Article 540.06:

“After installation, the interior and exterior joint gap between precast concrete box culvert sections shall not exceed 38 mm (1 1/2 in.)”

Portland Cement Replacement. For precast concrete products using Class PC concrete or other mixtures, portland cement replacement with fly ash or ground granulated blast-furnace (GGBF) slag shall be governed by the AASHTO or ASTM standard specification referenced in the Standard Specifications.

For all other precast concrete products using Class PC concrete or other mixtures, portland cement replacement with fly ash or GGBF slag shall be approved by the Engineer. Class F fly ash shall not exceed 15 percent by mass (weight) of the total portland cement and Class F fly ash. Class C fly ash shall not exceed 20 percent by mass (weight) of the total portland cement and Class C fly ash. GGBF slag shall not exceed 25 percent by mass (weight) of the total portland cement and GGBF slag.

Concrete mix designs, for precast concrete products, shall not consist of portland cement, fly ash and GGBF slag.

Ready-Mixed Concrete. Delete the last paragraph of Article 1020.11(a) of the Standard Specifications.

Shipping. When a precast concrete product has attained the specified strength, the earliest the product may be loaded, shipped, and used is on the fifth calendar day. The first calendar day shall be the date casting was completed.

Acceptance. Products which have been lot or piece inspected and approved by the Department prior to July 1, 1999, will be accepted for use on this contract.

PREFORMED RECYCLED RUBBER JOINT FILLER (BDE)

Effective: November 1, 2002

Revise Article 503.02(c) of the Standard Specifications to read:

“(c) Prefomed Expansion Joint Filler 1051”

Revise Article 637.02(d) of the Standard Specifications to read:

“(d) Prefomed Expansion Joint Filler 1051”

Add the following Article to Section 1051 of the Standard Specifications:

“1051.10 Prefomed Recycled Rubber Joint Filler. Prefomed recycled rubber joint filler shall consist of ground tire rubber, free of steel and fabric, combined with ground scrap or waste polyethylene. It shall not have a strong hydrocarbon or rancid odor and shall meet the physical property requirements of ASTM D 1752. Water absorption by volume shall not exceed 5.0 percent.”

RAP FOR USE IN BITUMINOUS CONCRETE MIXTURES (BDE)

Effective: January 1, 2000

Revised: April 1, 2002

Revise Article 1004.07 to read:

“**1004.07 RAP Materials.** RAP is reclaimed asphalt pavement resulting from cold milling or crushing of an existing dense graded hot-mix asphalt pavement. RAP must originate from routes or airfields under federal, state or local agency jurisdiction. The Contractor shall supply documentation that the RAP meets these requirements.

(a) Stockpiles. The Contractor shall construct individual, sealed RAP stockpiles meeting one of the following definitions. No additional RAP will be allowed on top of the pile after the pile has been sealed.

(1) Homogeneous. Homogeneous RAP stockpiles shall consist of RAP from Class I/ Superpave, or equivalent mixtures only and represent the same aggregate quality, but shall be at least C quality or better, the same type of crushed aggregate (either

crushed natural aggregate, ACBF slag, or steel slag), similar gradation and similar AC content. If approved by the Engineer, combined single pass surface/binder millings may be considered "homogenous", with a quality rating dictated by the lowest coarse aggregate quality present in the mixture. Homogenous stockpiles shall meet the requirements of Article 1004.07(d). Homogeneous RAP stockpiles not meeting these requirements may be processed (crushing and screening) and retested.

- (2) Conglomerate. Conglomerate RAP stockpiles shall consist of RAP from Class I/ Superpave, or equivalent mixtures only. The coarse aggregate in this RAP shall be crushed aggregate only and may represent more than one aggregate type and/or quality but shall be at least C quality or better. This RAP may have an inconsistent gradation and/or asphalt cement content prior to processing. All conglomerate RAP shall be processed prior to testing by crushing to where all RAP shall pass the 16 mm (5/8 in.) or smaller screen. Conglomerate RAP stockpiles shall not contain steel slag or other expansive material as determined by the Department. Conglomerate RAP stockpiles shall meet the requirements of Article 1004.07(d).
- (3) Conglomerate "D" Quality (DQ). Conglomerate DQ RAP stockpiles shall consist of RAP containing coarse aggregate (crushed or round) that is at least D quality or better. This RAP may have an inconsistent gradation and/or asphalt content. Conglomerate DQ RAP stockpiles shall not contain steel slag or other expansive material as determined by the Department. Conglomerate DQ RAP shall meet the requirements of Article 1004.07(d).

Reclaimed Superpave Low ESAL IL-9.5L surface mixtures shall only be placed in conglomerate DQ RAP stockpiles due to the potential for rounded aggregate.

- (4) Other. RAP stockpiles that do not meet the requirements of the stockpile categories listed above shall be classified as "Other". "Other" RAP stockpiles shall not be used in any of the Department's bituminous mixtures.
- (b) Use. The allowable use of a RAP stockpile shall be set by the lowest quality of coarse aggregate in the RAP stockpile. Class I/Superpave surface mixtures are designated as containing Class B quality coarse aggregate only. Superpave Low ESAL IL-19.0L binder and IL-9.5L surface mixtures are designated as Class C quality coarse aggregate only. Class I/Superpave binder mixtures, bituminous base course mixtures, and bituminous base course widening mixtures are designated as containing Class C quality coarse aggregate only. Bituminous stabilized subbase and BAM shoulders are designated as containing Class D quality coarse aggregate only. Any mixture not listed above shall have the designated quality determined by the Department.

RAP containing steel slag or other expansive material, as determined by the Department, shall be homogeneous and will be approved for use in Class I/Superpave (including Low ESAL) surface mixtures only. RAP stockpiles for use in Class I/Superpave mixtures (including Low ESAL), base course, base course widening and Class B mixtures shall be either homogeneous or conglomerate RAP stockpiles except conglomerate RAP stockpiles shall not be used in Superpave surface mixture Ndesign 50 or greater. RAP for use in bituminous aggregate mixtures (BAM) shoulders and BAM stabilized subbase shall be from homogeneous, conglomerate, or conglomerate DQ stockpiles.

Additionally, RAP used in Class I/Superpave surface mixtures shall originate from milled or crushed mixtures only, in which the coarse aggregate is of Class B quality or better. RAP stockpiles for use in Class I/Superpave (including Low ESAL) binder mixes as well as base course, base course widening and Class B mixtures shall originate from milled or processed surface mixture, binder mixture, or a combination of both mixtures uniformly blended to the satisfaction of the Engineer, in which the coarse aggregate is of Class C quality or better.

- (c) Contaminants. RAP containing contaminants, such as earth, brick, sand, concrete, sheet asphalt, bituminous surface treatment (i.e. chip seal), pavement fabric, etc., will be unacceptable unless the contaminants are removed to the satisfaction of the Engineer. Sheet asphalt shall be stockpiled separately.
- (d) Testing. All RAP shall be sampled and tested either during or after stockpiling.

For testing during stockpiling, washed extraction samples shall be run at the minimum frequency of one sample per 450 metric tons (500 tons) for the first 1800 metric tons (2,000 tons) and one sample per 1800 metric tons (2,000 tons) thereafter. A minimum of five tests shall be required for stockpiles less than 3600 metric tons (4,000 tons).

For testing existing stockpiles, the Contractor shall submit a plan for approval to the District proposing a satisfactory method of sampling and testing the RAP pile either in-situ or by restockpiling. The sampling plan shall meet the minimum frequency required above and detail the procedure used to extract representative samples throughout the pile for testing.

Before extraction, each field sample shall be split to 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.

All of the extraction results shall be compiled and averaged for asphalt content and gradation. Individual extraction test results, when compared to the averages, will be accepted if within the tolerances listed below.

| Parameter | Homogeneous / Conglomerate | Conglomerate "D" Quality |
|-------------------|----------------------------|--------------------------|
| 25 mm (1 in.) | | ± 5% |
| 12.5 mm (1/2 in.) | ± 8% | ± 15% |
| 4.75 mm (No. 4) | ± 6% | ± 13% |
| 2.36 mm (No. 8) | ± 5% | |
| 1.18 mm (No. 16) | | ± 15% |
| 600 μm (No. 30) | ± 5% | |
| 75 μm (No. 200) | ± 2.0% | ± 4.0% |
| AC | ± 0.4% | ± 0.5% |

If more than 20 percent of the individual sieves are out of the gradation tolerances, or if more than 20 percent of the asphalt content test results fall outside the appropriate

tolerances, the RAP will not be allowed to be used in the Department's bituminous concrete mixtures unless the RAP representing the failing tests is removed from the stockpile to the satisfaction of the Engineer. 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)".

- (e) Designs. At the Contractor's option, bituminous concrete mixtures may be constructed utilizing RAP material meeting the above detailed requirements. The amount of RAP included in the mixture shall not exceed the percentages specified in the plans.

RAP designs shall be submitted for volumetric verification. If additional RAP stockpiles are tested and found that no more than 20 percent of the results, as defined under "Testing" herein, are outside of the control tolerances set for the original RAP stockpile and design, and meets all of the requirements herein, the additional RAP stockpiles may be used in the original mix design at the percent previously verified.

- (f) Production. The coarse aggregate in all RAP used shall be equal to or less than the nominal maximum size requirement for the bituminous mixture being produced.

To remove or reduce agglomerated material, a scalping screen, crushing unit or comparable sizing device approved by the Engineer shall be used in the RAP 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 RAP control tolerances or QC/QA test results require corrective action, the Contractor shall cease production of the mixture containing RAP and either switch to the virgin aggregate design or submit a new RAP design.

REMOVE AND RE-ERECT STEEL PLATE BEAM GUARDRAIL AND TRAFFIC BARRIER TERMINALS (BDE)

Effective: January 1, 2001

Revised: January 1, 2005

Description. This work shall consist of replacing existing steel block-outs with wood or plastic block-outs during the removal and re-erection of steel plate beam guardrail and traffic barrier terminals.

Wood block-outs shall be according to the current standard applicable to the type of guardrail or terminal section being re-erected. Plastic blockouts shall be on the Department's approved list.

The existing steel posts may be drilled to match the bolt pattern shown on standard 630001 for the block-out or a new steel post shall be provided.

All existing "C" posts shall be removed and new posts shall be provided.

Basis of Payment. This work will not be paid for separately but shall be included in the contract unit price per meter (foot) for REMOVE AND RE-ERECT STEEL PLATE BEAM GUARDRAIL, of the type specified, and at the contract unit price each for REMOVE AND RE-ERECT TRAFFIC BARRIER TERMINALS, of the type specified.

SEEDING AND SODDING (BDE)

Effective: July 1, 2004

Revised: November 1, 2004

Revise Class 1A and 2A seeding mixtures shown in Table 1 of Article 250.07 of the Standard Specifications to read:

| "Table 1 - SEEDING MIXTURES | | |
|---|------------------------|-------------------------|
| Class – Type | Seeds | kg/hectare (lb/acre) |
| 1A Salt Tolerant Lawn Mixture 7/ | Bluegrass | 70 (60) |
| | Perennial Ryegrass | 20 (20) |
| | Audubon Red Fescue | 20 (20) |
| | Rescue 911 Hard Fescue | 20 (20) |
| | Fults Salt Grass* | 70 (60) |
| 2A Salt Tolerant Roadside Mixture 7/ | Alta Fescue or Ky 31 | 70 (60) |
| | Perennial Ryegrass | 20 (20) |
| | Audubon Red Fescue | 20 (30) |
| | Rescue 911 Hard Fescue | 20 (30) |
| | Fults Salt Grass 1/ | 70 (60)" |

Revise Note 7 of Article 250.07 of the Standard Specifications to read:

"Note 7. In Districts 1 through 6, the planting times shall be April 1 to June 15 and August 1 to November 1. In Districts 7 through 9, the planting times shall be March 1 to June 1 and August 1 to November 15. Seeding may be performed outside these dates provided the Contractor guarantees a minimum of 75 percent coverage over the entire seeded area(s) after one growing season. The guarantee shall be submitted to the Engineer in writing prior to performing the work. After one growing season, areas not sustaining 75 percent growth shall be interseeded or reseeded, as determined by the Engineer, at the Contractor's expense."

Add the following sentence to Article 252.04 of the Standard Specifications:

"Sod shall not be placed during the months of July and August."

Revise the first paragraph of Article 252.08 of the Standard Specifications to read:

"252.08 Sod Watering. Within two hours after the sod has been placed, water shall be applied at a rate of 25 L/sq m (5 gal/sq yd). Additional water shall be applied every other day at a rate of 15 L/sq m (3 gal/sq yd) for a total of 15 additional waterings. During periods exceeding 26 °C (80 °F) or subnormal rainfall, the schedule of additional waterings may be altered with the approval of the Engineer."

Revise Article 252.09 of the Standard Specifications to read:

"252.09 Supplemental Watering. During periods exceeding 26 °C (80 °F) or subnormal rainfall, supplemental watering may be required after the initial and additional waterings. Supplemental watering shall be performed when directed by the Engineer. Water shall be applied at the rate specified by the Engineer within 24 hours of notice."

Revise the first and third paragraphs of Article 252.12 of the Standard Specifications to read:

“252.12 Method of Measurement. Sodding will be measured for payment in place and the area computed in square meters (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. When directed by the Engineer, any defective or unacceptable sod shall be removed, replaced and watered by the Contractor at his/her own expense.”

“Supplemental watering will be measured for payment in units of 1000 L (1000 gal) of water applied on the sodded areas. Waterings performed in addition to those required by Article 252.08 or after the 30 day establishment period will be considered as supplemental watering.”

Replace the first paragraph of Article 252.13 of the Standard Specifications with the following:

“252.13 Basis of Payment. Sodding will be paid for at the contract unit price per square meter (square yard) for SODDING or SODDING, SALT TOLERANT according to the following schedule.

- (a) Initial Payment. Upon placement of sod, 25 percent of the pay item will be paid.
- (b) Final Payment. Upon acceptance of sod, the remaining 75 percent of the pay item will be paid.”

Revise Article 1081.03(b) of the Standard Specifications to read:

“(b) Salt Tolerant Sod.

| Variety | Percent by Weight |
|----------------------------|-------------------|
| Buffalo Grass | 30% |
| Buchloe Dactyloides | |
| Amigo Fineleaf Tall Fescue | 20% |
| Audubon Red Fescue | 15% |
| Rescue 911 Hard Fescue | 15% |
| Rugby Kentucky Bluegrass | 5% |
| Fults Pucinnellia Distans | 15%” |

Revise Table II of Article 1081.04(c)(6) of the Standard Specifications to read:

| TABLE II | | | | | | |
|-----------------------------|---------------------------------|------------------------------|---------------------------------------|----------------------------|--|---------|
| Variety of Seeds | Hard Seed Percent Maximum | Purity Percent Minimum | Pure, Live Seed Percent Minimum | Weed Percent Maximum | Secondary Noxious Weeds No. per kg (oz) Max. Permitted* | Remarks |
| Alfalfa | 20 | 92 | 89 | 0.50 | 211 (6) | 1/ |
| Brome Grass | - | 90 | 75 | 0.50 | 175 (5) | - |
| Clover, Alsike | 15 | 92 | 87 | 0.30 | 211 (6) | 2/ |
| Clover, Crimson | 15 | 92 | 83 | 0.50 | 211 (6) | - |
| Clover, Ladino | 15 | 92 | 87 | 0.30 | 211 (6) | - |
| Clover, Red | 20 | 92 | 87 | 0.30 | 211 (6) | - |
| Clover, White Dutch | 30 | 92 | 87 | 0.30 | 211 (6) | 3/ |
| Audubon Red Fescue | 0 | 97 | 82 | 0.10 | 105 (3) | - |
| Fescue, Alta or Ky. 31 | - | 97 | 82 | 1.00 | 105 (3) | - |
| Fescue, Creeping Red | - | 97 | 82 | 1.00 | 105 (3) | - |
| Fults Salt Grass | 0 | 98 | 85 | 0.10 | 70 (2) | - |
| Kentucky Bluegrass | - | 97 | 80 | 0.30 | 247 (7) | 5/ |
| Lespedeza, Korean | 20 | 92 | 84 | 0.50 | 211 (6) | 3/ |
| Oats | - | 92 | 88 | 0.50 | 70 (2) | 4/ |
| Orchard Grass | - | 90 | 78 | 1.50 | 175 (5) | 4/ |
| Redtop | - | 90 | 78 | 1.80 | 175 (5) | 4/ |
| Ryegrass, Perennial, Annual | - | 97 | 85 | 0.30 | 175 (5) | 4/ |
| Rye, Grain, Winter | - | 92 | 83 | 0.50 | 70 (2) | 4/ |
| Rescue 911 Hard Fescue | 0 | 97 | 82 | 0.10 | 105 (3) | - |
| Timothy | - | 92 | 84 | 0.50 | 175 (5) | 4/ |
| Vetch, Crown | 30 | 92 | 67 | 1.00 | 211 (6) | 3/ & 6/ |
| Vetch, Spring | 30 | 92 | 88 | 1.00 | 70 (2) | 4/ |
| Vetch, Winter | 15 | 92 | 83 | 1.00 | 105 (3) | 4/ |
| Wheat, hard Red Winter | - | 92 | 89 | 0.50 | 70 (2) | 4/ |

SELF-CONSOLIDATING CONCRETE FOR PRECAST PRODUCTS (BDE)

Effective: July 1, 2004

Definition. Self-consolidating concrete is a flowable mixture that does not require mechanical vibration for consolidation.

Usage. Self-consolidating concrete may be used for precast concrete products. The design and testing of a self-consolidating concrete mixture shall be according to Section 1020 of the Standard Specifications except as modified herein.

Materials. Materials shall conform to the following requirements:

- (a) Self-Consolidating Admixtures. The self-consolidating admixture system shall consist of either a high range water-reducing admixture only or a high range water-reducing admixture combined with a separate viscosity modifying admixture. The one or two component admixture system shall be capable of producing a flowable concrete that does not require mechanical vibration.

The high range water-reducing admixture shall comply with the requirements of AASHTO M 194, Type F.

The viscosity modifying admixture will be evaluated according to the test methods and mix design proportions referenced in AASHTO M 194, except the following physical requirements shall be met:

- (1) For initial and final set times, the allowable deviation of the test concrete from the reference concrete shall not be more than 1.0 hour earlier or 1.5 hours later.
 - (2) For compressive and flexural strengths, the test concrete shall be a minimum of 90 percent of the reference concrete at 3, 7 and 28 days.
 - (3) The length change of the test concrete shall be a maximum 135 percent of the reference concrete. However, if the length change of the reference concrete is less than 0.030 percent, the length change of the test concrete shall be a maximum 0.010 percentage units greater than the reference concrete.
 - (4) The relative durability factor of the test concrete shall be a minimum 80 percent.
- (b) Fine Aggregate. A fine aggregate used alone in the mix design shall not have an expansion greater than 0.30 percent per ASTM C 1260. For a blend of two or more fine aggregates, the resulting blend shall not have an expansion greater than 0.30 percent.

The aggregate blend expansion will be calculated as follows:

$$\text{Aggregate Blend Expansion} = (a/100 \times A) + (b/100 \times B) + (c/100 \times C) + \dots \text{etc.}$$

Where: a, b, c, ... = percent of aggregate blend
A, B, C, ... = aggregate expansion according to ASTM C 1260

Mix Design Criteria. The slump requirements of Article 1020.04 of the Standard Specifications shall not apply. In addition, the allowable coarse aggregate gradations shall be CA 11, CA 13, CA 14, CA 16, or a blend of these gradations. The fine aggregate proportion shall be a maximum 50 percent by mass (weight) of the total aggregate used.

Trail Batch. A minimum 1 cu m (1 cu yd) trial batch shall be produced. The mixture will be evaluated for air content, slump flow, visual stability index, compressive strength, passing ability, and static/dynamic segregation resistance.

The trial batch shall be scheduled and performed in the presence of the Engineer. Testing shall be performed per the Department's test method or as approved by the Engineer.

For the trial batch, the air content shall be within the top half of the allowable specification range. The slump flow range shall be 510 mm (20 in.) minimum to 710 mm (28 in.) maximum. The visual stability index shall be a maximum of 1. Strength shall be determined at 28 days. At the Contractor's option, strength may be determined for additional days.

Passing ability and static/dynamic segregation resistance shall be determined by tests selected by the Contractor and approved by the Engineer. The visual stability index shall not be used as the sole criteria for evaluating static segregation resistance.

After an acceptable mixture has been batched and tested, the mixture shall also be evaluated for robustness. Robustness shall be evaluated by varying the dosage of the self-consolidating admixture system and water separately. Additional trial batches may be necessary to accomplish this.

When necessary, the trial batches shall be disposed of according to Article 202.03 of the Standard Specifications.

Quality Control. Once testing is completed and acceptable results have been attained, production test frequencies and allowable test ranges for slump flow, visual stability index, passing ability, and static/dynamic segregation resistance shall be proposed. The production test frequencies and allowable test ranges will be approved by the Engineer.

The slump flow range shall be ± 50 mm (± 2 in.) of the target value, and within the overall range of 510 mm (20 in.) minimum to 710 mm (28 in.) maximum. The visual stability index shall be a maximum of 1. The approved test ranges for passing ability and static/dynamic segregation resistance will be based on recommended guidelines determined by the Engineer.

SUBGRADE PREPARATION (BDE)

Effective: November 1, 2002

Revise the tenth paragraph of Article 301.03 of the Standard Specifications to read:

“Equipment of such weight, or used in such a way as to cause a rut in the finished subgrade of 13 mm (1/2 in.) or more in depth, shall be removed from the work or the rutting otherwise prevented.”

SUPERPAVE BITUMINOUS CONCRETE MIXTURE IL-4.75 (BDE)

Effective: November 1, 2004

Description. This work shall consist of constructing bituminous concrete surface course or leveling binder with a Superpave, IL-4.75 mixture. Work shall be according to Section 406 of the Standard Specifications and the special provision “Quality Control/Quality Assurance of Bituminous Concrete Mixtures”, except as modified herein.

Materials.

- (a) Fine Aggregate. The fine aggregate shall be at least 50 percent manufactured sand meeting FA 20 gradation. The manufactured sand shall be stone sand, slag sand, steel slag sand, or combinations thereof. When used as leveling binder, steel slag sand will not be permitted.

The fine aggregate quality shall be Class B. The total minus 75 μ m (No. 200) material in the mixture shall be free from organic impurities.

- (b) Reclaimed Asphalt Pavement (RAP). RAP will not be permitted.

- (c) Bituminous Material. The asphalt cement (AC) shall conform to Article 1009.05 of the Standard Specifications for SBS PG76-28 or SBR PG76-28, except the elastic recovery shall be a minimum of 80.

The AC shall be shipped, maintained, and stored at the mix plant according to the manufacturer’s requirements. It shall be placed in an empty tank and not blended with other asphalt cements.

- (d) Mineral Filler. Mineral filler shall conform to the requirements of Article 1011.01 of the Standard Specifications, except it shall not be collected dust.

Laboratory Equipment.

- (a) Superpave Gyrotory Compactor. The Superpave gyrotory compactor (SGC) shall be used for all laboratory mixture compaction.
- (b) Ignition Oven. The ignition oven shall be used for determination of AC content. The ignition oven shall also be used to recover aggregates for all required washed gradations.

The Engineer may waive the ignition oven requirement for AC content if the aggregates to be used are known to have ignition AC content calibration factors, which exceed 1.5 percent. If the calibration factor exceeds 1.5 percent other IDOT approved methods shall be utilized for determination of AC content.

Mixture Design. The Contractor shall submit mix designs for approval, for each required mixture. Mix designs shall be developed by Level III personnel who have successfully completed the course, "Superpave Mix Design Upgrade". Articles 406.10 and 406.13 of the Standard Specifications shall not apply. The mixtures shall be designed according to the respective Illinois Modified AASHTO references listed below.

| | |
|--------------|---|
| AASHTO MP 2 | Standard Specification for Superpave Volumetric Mix Design |
| AASHTO PP 2 | Standard Practice for Short and Long Term Aging of Hot Mix Asphalt (HMA) |
| AASHTO PP 19 | Standard Practice for Volumetric Analysis of Compacted Hot Mix Asphalt (HMA) |
| AASHTO PP 28 | Standard Practice for Designing Superpave HMA |
| AASHTO T 209 | Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures |
| AASHTO T 305 | Standard Method of Test for Determination of Draindown Characteristics in Uncompacted Asphalt Mixtures. |
| AASHTO T 308 | Determining the Asphalt Content of Hot Mix Asphalt (HMA) by the Ignition Method |
| AASHTO T 312 | Preparing and Determining the Density of Hot Mix Asphalt (HMA) Specimens by Means of the Superpave Gyrotory Compactor |

- (a) Mixture Composition. The job mix formula (JMF) shall conform to the following:

| Sieve | Percent Passing |
|-----------------------------|-----------------|
| 12.5 mm (1/2 in.) | 100 |
| 9.5 mm (3/8 in.) | 100 |
| 4.75 mm (No. 4) | 90-100 |
| 2.36 mm (No. 8) | 70-90 |
| 1.18 mm (No. 16) | 50-65 |
| 600 μm (No. 30) | 35-55 |
| 300 μm (No. 50) | 15-30 |
| 150 μm (No. 100) | 10-18 |
| 75 μm (No. 200) | 8-10 |
| | |
| AC Content | 8% to 10% |

(b) Volumetric Requirements.

| Volumetric Parameter | Requirement |
|--------------------------------------|---------------------|
| Design Air Voids | 2.5 % at Ndesign 50 |
| Voids in the Mineral Aggregate (VMA) | 19.0% minimum |
| Voids Filled with Asphalt (VFA) | 87-95% |
| Maximum Draindown | 0.3% |

(c) Determination of Need for Anti-Stripping Additive. The mixture designer shall determine if an additive is needed in the mix to prevent stripping. The determination shall be made on the basis of tests performed according to Illinois Modified T 283. To be considered acceptable by the Engineer as a mixture not susceptible to stripping, the ratio of conditioned to unconditioned split tensile strengths (TSRs) shall be equal to or greater than 0.75 for 4 in. specimens or 0.85 for 6 in. specimens. Mixtures having TSRs less than these, either with or without an additive, will be considered unacceptable.

When it is determined that an additive is required, the additive may be hydrated lime, slaked quicklime, or a liquid additive, at the Contractor's option. The liquid additive shall be selected from the Department's list of approved additives and may be limited to those, which have exhibited satisfactory performance in similar mixes.

Dry hydrated lime shall be added at a rate of 1.0 to 1.5 percent by weight of total dry aggregate. Slurry shall be added in such quantity as to provide the required amount of hydrated lime solids by weight of total dry aggregate. The exact rate of application for all anti-stripping additives will be determined by the Engineer. The method of application shall be according to Article 406.12 of the Standard Specifications.

Mixture Production. Plant modifications may be required to accommodate the addition of higher percentages of mineral filler as required by the JMF.

During production, mineral filler shall not be stored in the same silo as collected dust. This may require the wasting of any previously collected baghouse fines prior to production of the IL-4.75 mixture. Only dust collected during the production of IL-4.75 may be returned directly to the IL-4.75 mixture. Any additional minus 75 μm (No. 200) material needed to produce the IL-4.75 shall be mineral filler.

The mixture shall be produced within the temperature range recommended by the asphalt cement producer; but not less than 155 °C (310 °F).

The amount of moisture remaining in the finished mixture shall be less than 0.3 percent based on the weight of the test sample after drying.

Mixtures containing steel slag sand or aggregate having absorptions \geq 2.5 percent shall have a silo storage plus haul time of not less than 1.5 hours.

Control Charts/Limits. Control charts/limits and testing frequency shall be according to QC/QA requirements for Class I mixtures except as follows:

| Parameter | Individual Test | Moving Average |
|-------------------------|------------------------|------------------------|
| % Passing | | |
| 1.18 mm (No. 16) | \pm 4% | \pm 3% |
| 75 μ m mm (No. 200) | \pm 1.0% | \pm 0.8% |
| Asphalt Content | \pm 0.2% | \pm 0.1% |
| Air Voids | \pm 1.0% (of design) | \pm 0.8% (of design) |
| Density | 93.5 - 97.4% | |

CONSTRUCTION REQUIREMENTS

Placement. The mixture shall be placed on a dry, clean surface when the air temperature in the shade is 10 °C (50 °F) or above. The mixture temperature shall be 155 °C (310 °F) or above and shall be measured in the truck just prior to placement.

When used as leveling binder, the mixture shall be overlaid within five days of being placed.

Lift Thickness.

- (a) Surface Course. The minimum and maximum compacted lift thickness for the IL-4.75 mixture shall be 19 mm (3/4 in.) and 32 mm (1 1/4 in.) respectively.
- (b) Leveling Binder. Density requirements for IL-4.75 mixture shall apply when the nominal , compacted thickness is 19 mm (3/4 in.) or greater.

Compaction. The compaction operation shall start immediately after the mixture has been placed. The Contractor shall provide a minimum of two steel-wheeled tandem rollers for breakdown (T_B) and one finish steel-wheeled roller (T_F) meeting the requirements of Article 406.16(a) and 1101.01(e) of the Standard Specifications except the minimum compression for all of the rollers shall be 49 N/mm (280 lb/in.) of roller width. Pneumatic-tired and vibratory rollers will not be permitted.

Basis of Payment. This work will be paid for at the contract unit price per metric ton (ton) for POLYMERIZED LEVELING BINDER (MACHINE METHOD), SUPERPAVE, IL-4.75, N50; and POLYMERIZED BITUMINOUS CONCRETE SURFACE COURSE, SUPERPAVE, IL-4.75, N50.

SUPERPAVE BITUMINOUS CONCRETE MIXTURES (BDE)

Effective: January 1, 2000

Revised: April 1, 2004

Description. This work shall consist of designing, producing and constructing Superpave bituminous concrete mixtures using Illinois Modified Strategic Highway Research Program (SHRP) Superpave criteria. This work shall be according to Sections 406 and 407 of the Standard Specifications and the special provision, "Quality Control/Quality Assurance of Bituminous Concrete Mixtures", except as follows.

Materials.

- (a) Fine Aggregate Blend Requirement. The Contractor may be required to provide FA 20 manufactured sand to meet the design requirements. For mixtures with $N_{design} \geq 90$, at least 50 percent of the required fine aggregate fraction shall consist of either stone sand, slag sand, or steel slag sand meeting the FA/FM 20 gradation.
- (b) Reclaimed Asphalt Pavement (RAP). If the Contractor is allowed to use more than 15 percent RAP, as specified in the plans, a softer performance-graded binder may be required as determined by the Engineer.

RAP shall meet the requirements of the special provision, "RAP for Use in Bituminous Concrete Mixtures".

RAP will not be permitted in mixtures containing polymer modifiers.

RAP containing steel slag will be permitted for use in top-lift surface mixtures only.

- (c) Bituminous Material. The asphalt cement (AC) shall be performance-graded (PG) or polymer modified performance-graded (SBS-PG or SBR-PG) meeting the requirements of Article 1009.05 of the Standard Specifications for the grade specified on the plans.

The following additional guidelines shall be used if a polymer modified asphalt is specified:

- (1) The polymer modified asphalt cement shall be shipped, maintained, and stored at the mix plant according to the manufacturer's requirements. Polymer modified asphalt cement shall be placed in an empty tank and shall not be blended with other asphalt cements.
- (2) The mixture shall be designed using a mixing temperature of 163 ± 3 °C (325 ± 5 °F) and a gyratory compaction temperature of 152 ± 3 °C (305 ± 5 °F).
- (3) Pneumatic-tired rollers will not be allowed unless otherwise specified by the Engineer. A vibratory roller meeting the requirements of Article 406.16 of the Standard Specifications shall be required in the absence of the pneumatic-tired roller.

Laboratory Equipment.

- (a) Superpave Gyratory Compactor. The superpave gyratory compactor (SGC) shall be used for all QC/QA testing.

- (b) Ignition Oven. The ignition oven shall be used to determine the AC content. The ignition oven shall also be used to recover aggregates for all required washed gradations.

The Engineer may waive the ignition oven requirement for AC content if the aggregates to be used are known to have ignition AC 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 AC content.

Mixture Design. The Contractor shall submit mix designs, for approval, for each required mixture. Mix designs shall be developed by Level III personnel who have successfully completed the course, "Superpave Mix Design Upgrade". Articles 406.10 and 406.13 of the Standard Specifications shall not apply. The mixtures shall be designed according to the respective Illinois Modified AASHTO references listed below.

| | |
|--------------|---|
| AASHTO MP 2 | Standard Specification for Superpave Volumetric Mix Design |
| AASHTO R 30 | Standard Practice for Mixture Conditioning of Hot-Mix Asphalt (HMA) |
| AASHTO PP 28 | Standard Practice for Designing Superpave HMA |
| AASHTO T 209 | Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures |
| AASHTO T 312 | Preparing and Determining the Density of Hot Mix Asphalt (HMA) Specimens by Means of the Superpave Gyratory Compactor |
| AASHTO T 308 | Determining the Asphalt Content of Hot Mix Asphalt (HMA) by the Ignition Method |

- (a) Mixture Composition. The ingredients of the bituminous mixture shall be combined in such proportions as to produce a mixture conforming to the composition limits by weight. The gradation mixture specified on the plans shall produce a mixture falling within the limits specified in Table 1.

| TABLE 1. MIXTURE COMPOSITION (% PASSING) ^{1/} | | | | | | | | |
|--|------------|------------------|------------|------------------|--------------------------|------------------|-------------------------|------------------|
| Sieve Size | IL-25.0 mm | | IL-19.0 mm | | IL-12.5 mm ^{4/} | | IL-9.5 mm ^{4/} | |
| | min | max | min | max | Min | max | min | max |
| 37.5 mm (1 1/2 in.) | | 100 | | | | | | |
| 25 mm (1 in.) | 90 | 100 | | 100 | | | | |
| 19 mm (3/4 in.) | | 90 | 82 | 100 | | 100 | | |
| 12.5 mm (1/2 in.) | 45 | 75 | 50 | 85 | 90 | 100 | | 100 |
| 9.5 mm (3/8 in.) | | | | | | 89 | 90 | 100 |
| 4.75 mm (#4) | 24 | 42 ^{2/} | 24 | 50 ^{2/} | 28 | 65 | 28 | 65 |
| 2.36 mm (#8) | 16 | 31 | 20 | 36 | 28 | 48 ^{3/} | 28 | 48 ^{3/} |
| 1.18 mm (#16) | 10 | 22 | 10 | 25 | 10 | 32 | 10 | 32 |
| 600 μm (#30) | | | | | | | | |
| 300 μm (#50) | 4 | 12 | 4 | 12 | 4 | 15 | 4 | 15 |
| 150 μm (#100) | 3 | 9 | 3 | 9 | 3 | 10 | 3 | 10 |
| 75 μm (#200) | 3 | 6 | 3 | 6 | 4 | 6 | 4 | 6 |

- 1/ Based on percent of total aggregate weight.
- 2/ The mixture composition shall not exceed 40 percent passing the 4.75 mm (#4) sieve for binder courses with Ndesign ≥ 90.
- 3/ The mixture composition shall not exceed 40 percent passing the 2.36 mm (#8) sieve for surface courses with Ndesign ≥ 90.
- 4/ The mixture composition for surface courses shall be according to IL-12.5 mm or IL-9.5 mm, unless otherwise specified by the Engineer.

One of the above gradations shall be used for leveling binder as specified in the plans and according to Article 406.04 of the Standard Specifications.

It is recommended that the selected combined aggregate gradation not pass through the restricted zones specified in Illinois Modified AASHTO MP 2.

- (b) Dust/AC Ratio for Superpave. The ratio of material passing the 75 μm (#200) sieve to total asphalt cement shall not exceed 1.0 for mixture design (based on total weight of mixture).

- (c) Volumetric Requirements. The target value for the air voids of the hot mix asphalt (HMA) shall be 4.0 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 requirements listed in Table 2.

| TABLE 2. VOLUMETRIC REQUIREMENTS | | | | | |
|---|--|----------------|----------------|---------------|---|
| Ndesign | Voids in the Mineral Aggregate (VMA), % minimum | | | | Voids Filled with Asphalt (VFA), % |
| | IL-25.0 | IL-19.0 | IL-12.5 | IL-9.5 | |
| 50 | 12.0 | 13.0 | 14.0 | 15 | 65 - 78 |
| 70 | | | | | 65 - 75 |
| 90 | | | | | |
| 105 | | | | | |

- (d) Determination of Need for Anti-Stripping Additive. The mixture designer shall determine if an additive is needed in the mix to prevent stripping. The determination will be made on the basis of tests performed according to Illinois Modified T 283 using 4 in. Marshall bricks. To be considered acceptable by the Department as a mixture not susceptible to stripping, the ratio of conditioned to unconditioned split tensile strengths (TSRs) shall be equal to or greater than 0.75. Mixtures, either with or without an additive, with TSRs less than 0.75 will be considered unacceptable.

If it is determined that an additive is required, the additive may be hydrated lime, slaked quicklime, or a liquid additive, at the Contractor's option. The liquid additive shall be selected from the Department's list of approved additives and may be limited to those which have exhibited satisfactory performance in similar mixes.

Dry hydrated lime shall be added at a rate of 1.0 to 1.5 percent by weight of total dry aggregate. Slurry shall be added in such quantity as to provide the required amount of hydrated lime solids by weight of total dry aggregate. The exact rate of application for all anti-stripping additives will be determined by the Department. The method of application shall be according to Article 406.12 of the Standard Specifications.

Personnel. The QC Manager and Level I Technician shall have successfully completed the Department's "Superpave Field Control Course".

Required Plant Tests. Testing shall be conducted to control the production of the bituminous mixture. The Contractor shall use the test methods identified to perform the following mixture tests at a frequency not less than that indicated in Table 3.

| TABLE 3. REQUIRED PLANT TESTS for SUPERPAVE | | |
|---|---|--|
| Parameter | Frequency of Tests | Test Method |
| Aggregate Gradation Hot bins for batch and continuous plants Individual cold-feeds or combined belt-feed for drier drum plants. (% passing sieves: 12.5 mm (1/2 in.), 4.75 mm (No. 4), 2.36 mm (No. 8), 600 µm (No. 30), 75 µm (No. 200)) | 1 dry gradation per day of production (either morning or afternoon sample). And 1 washed ignition oven test on the mix per day of production (conduct in afternoon if dry gradation is conducted in the morning or vice versa). NOTE. The order in which the above tests are conducted shall alternate from the previous production day (example: a dry gradation conducted in the morning will be conducted in the afternoon on the next production day and so forth). The dry gradation and washed ignition oven test results shall be plotted on the same control chart. | Illinois Procedure (See Manual of Test Procedures for Materials). |
| Asphalt Content by Ignition Oven (Note 1.) | 1 per half day of production | Illinois Modified AASHTO T 308 |
| Air Voids | Bulk Specific Gravity of Gyratory Sample | 1 per half day of production for first 2 days and 1 per day thereafter (first sample of the day) |
| | Maximum Specific Gravity of Mixture | Illinois Modified AASHTO T 209 |

Note 1. The Engineer may waive the ignition oven requirement for AC content if the aggregates to be used are known to have ignition AC 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 AC content.

During production, the ratio of minus 75 µm (#200) sieve material to total asphalt cement shall be not less than 0.6 nor more than 1.2 and the moisture content of the mixture at discharge from the mixer shall not exceed 0.5 percent. If at any time the ratio of minus 75 µm (#200) material to asphalt or moisture content of the mixture falls outside the stated limits, production of the mix shall cease. The cause shall be determined and corrective action satisfactory to the Engineer shall be initiated prior to resuming production.

During production, mixtures containing an anti-stripping additive will be tested by the Department for stripping according to Illinois Modified T 283. If the mixture fails to meet the TSR criteria for acceptance, no further mixture will be accepted until the Contractor takes such action as is necessary to furnish a mixture meeting the criteria.

Construction Requirements

Lift Thickness.

- (a) Binder and Surface Courses. The minimum compacted lift thickness for constructing bituminous concrete binder and surface courses shall be according to Table 4:

| TABLE 4 – MINIMUM COMPACTED LIFT THICKNESS | |
|---|---------------------|
| Mixture | Thickness, mm (in.) |
| IL-9.5 | 32 (1 1/4) |
| IL-12.5 | 38 (1 1/2) |
| IL-19.0 | 57 (2 1/4) |
| IL-25.0 | 76 (3) |

- (b) Leveling Binder. Mixtures used for leveling binder shall be as follows:

| TABLE 5 – LEVELING BINDER | |
|---|-------------------|
| Nominal, Compacted, Leveling Binder Thickness, mm (in.) | Mixture |
| ≤ 32 (1 1/4) | IL-9.5 |
| 32 (1 1/4) to 50 (2) | IL 9.5 or IL-12.5 |

Density requirements shall apply for leveling binder when the nominal, compacted thickness is 32 mm (1 1/4 in.) or greater for IL-9.5 mixtures and 38 mm (1 1/2 in.) or greater for IL-12.5 mixtures.

- (c) Full-Depth Pavement. The compacted thickness of the initial lift of binder course shall be 100 mm (4 in.). The compacted thickness of succeeding lifts shall meet the minimums specified in Table 4 but not exceed 100 mm (4 in.).

If a vibratory roller is used for breakdown, the compacted thickness of the binder lifts, excluding the top lift, may be increased to 150 mm (6 in.) provided the required density is obtained.

- (d) Bituminous Patching. The minimum compacted lift thickness for constructing bituminous patches shall be according to Table 4.

Control Charts/Limits. Control charts/limits shall be according to QC/QA Class I requirements, except density shall be plotted on the control charts within the following control limits:

| TABLE 6. DENSITY CONTROL LIMITS | | |
|--|--------------|-----------------|
| Mixture | Parameter | Individual Test |
| 12.5 mm / 9.5 mm | Ndesign ≥ 90 | 92.0 – 96.0% |
| 12.5 mm / 9.5 mm | Ndesign < 90 | 92.5 – 97.4% |
| 19.0 mm / 25.0 mm | Ndesign ≥ 90 | 93.0 – 96.0% |
| 19.0 mm / 25.0 mm | Ndesign < 90 | 93.0 – 97.4% |

Basis of Payment. On resurfacing projects, this work will be paid for at the contract unit price per metric ton (ton) for BITUMINOUS CONCRETE SURFACE COURSE, SUPERPAVE, of the friction aggregate mixture and Ndesign specified, LEVELING BINDER (HAND METHOD),

SUPERPAVE, of the Ndesign specified, LEVELING BINDER (MACHINE METHOD), SUPERPAVE, of the Ndesign specified, and BITUMINOUS CONCRETE BINDER COURSE, SUPERPAVE, of the mixture composition and Ndesign specified.

On resurfacing projects in which polymer modifiers are required, this work will be paid for at the contract unit price per metric ton (ton) for POLYMERIZED BITUMINOUS CONCRETE SURFACE COURSE, SUPERPAVE, of the friction aggregate mixture and Ndesign specified, POLYMERIZED LEVELING BINDER (HAND METHOD), SUPERPAVE, of the Ndesign specified, POLYMERIZED LEVELING BINDER (MACHINE METHOD), SUPERPAVE, of the Ndesign specified, and POLYMERIZED BITUMINOUS CONCRETE BINDER COURSE, SUPERPAVE, of the mixture composition and Ndesign specified.

On full-depth pavement projects, this work will be paid for at the contract unit price per square meter (square yard) for BITUMINOUS CONCRETE PAVEMENT, (FULL-DEPTH), SUPERPAVE, of the thickness specified.

On projects where widening is constructed and the entire pavement is then resurfaced, the binder for the widening will be paid for at the contract unit price per square meter (square yard) for BITUMINOUS CONCRETE BINDER COURSE, SUPERPAVE, of the mixture composition, Ndesign, and thickness specified. The surface and binder used to resurface the entire pavement will be paid for according to the paragraphs above for resurfacing projects.

TEMPORARY CONCRETE BARRIER (BDE)

Effective: October 1, 2002

Revised: November 1, 2003

Revise Section 704 of the Standard Specifications to read:

“SECTION 704. TEMPORARY CONCRETE BARRIER

704.01 Description. This work shall consist of furnishing, placing, maintaining, relocating and removing precast concrete barrier at temporary locations as shown on the plans or as directed by the Engineer.

704.02 Materials. Materials shall meet the requirements of the following Articles of Section 1000 - Materials:

| Item | Article/Section |
|---|-----------------|
| (a) Portland Cement Concrete..... | 1020 |
| (b) Reinforcement Bars (Note 1) | 1006.10(a)(b) |
| (c) Connecting Pins and Anchoring Pins..... | 1006.09 |
| (d) Connecting Loop Bars (Note 2) | |
| (e) Rapid Set Mortar (Note 3) | |

Note 1. Reinforcement bars shall be Grade 400 (Grade 60).

Note 2. Connecting loop bars shall be smooth bars conforming to the requirements of ASTM A 36.

Note 3. Rapid set materials shall be obtained from the Department’s approved list of Packaged, Dry, Rapid Hardening Cementitious Materials for Concrete Repairs. For a

rapid set mortar mixture, one part packaged rapid set cement shall be combined with two parts fine aggregate, by volume or a packaged rapid set mortar shall be used. Mixing of the rapid set mortar shall be according to the manufacturer's instructions.

CONSTRUCTION REQUIREMENTS

704.03 General. Precast concrete barrier produced after October 1, 2002 shall meet National Cooperative Highway Research Program (NCHRP) Report 350, Category 3, Test Level 3 requirements and have the F shape. Precast concrete barrier shall be constructed according to the Bureau of Materials and Physical Research's Policy Memorandum "Quality Control/Quality Assurance Program for Precast Concrete Products", applicable portions of Sections 504 and 1020, and to the details shown on the plans.

Precast units shall not be removed from the casting beds until a flexural strength of 2,000 kPa (300 psi) or a compressive strength of 10,000 kPa (1400 psi) is attained. When the concrete has attained a compressive strength according to Article 1020.04, and not prior to four days after casting, the units may be loaded, shipped and used.

704.04 Installation. F shape barrier units shall be seated on bare, clean pavement or paved shoulder and pinned together in a smooth, continuous line at the exact locations provided by the Engineer. The barrier unit at each end of the installation shall be secured to the pavement or paved shoulder using six anchoring pins and protected with an impact attenuator as shown on the plans.

F shape and New Jersey shape barrier units shall not be mixed in the same run.

Barrier units or attachments damaged during transportation or handling, or by traffic during the life of the installation, shall be repaired or replaced by the Contractor at his/her expense. The Engineer will be the sole judge in determining which units or attachments require repair or replacement.

The temporary barriers shall be removed when no longer required by the contract. After removal, all anchoring holes in the pavement or paved shoulder shall be filled with a rapid set mortar. Only enough water to permit placement and consolidation by rodding shall be used and the material shall be struck-off flush.

704.05 New Jersey Shape Barrier. New Jersey shape barrier produced prior to October 1, 2002 according to earlier Department standards, may be used until January 1, 2008.

Barrier units or attachments damaged during transportation or handling, or by traffic during the life of the installation, shall be repaired or replaced by the Contractor at his/her expense. The Engineer will be the sole judge in determining which units or attachments require repair or replacement.

F shape and New Jersey shape barrier units shall not be mixed in the same run.

The barrier unit at each end of the installation shall be secured to the pavement or paved shoulder using six dowel bars and protected with an impact attenuator as shown on the plans.

The temporary barriers shall be removed when no longer required by the contract. After removal, all anchoring holes in the pavement or paved shoulder shall be filled with a rapid set

mortar. Only enough water to permit placement and consolidation by rodding shall be used and the material shall be struck-off flush.

704.06 Method of Measurement. Temporary concrete barrier will be measured for payment in meters (feet) in place along the centerline of the barrier. When temporary concrete barrier is relocated within the limits of the jobsite, the relocated barrier will be measured for payment in meters (feet) in place along the centerline of the barrier.

704.07 Basis of Payment. When the Contractor furnishes the barrier units, this work will be paid for at the contract unit price per meter (foot) for TEMPORARY CONCRETE BARRIER or RELOCATE TEMPORARY CONCRETE BARRIER.

When the Department furnishes the barrier units, this work will be paid for at the contract unit price per meter (foot) for TEMPORARY CONCRETE BARRIER, STATE OWNED or RELOCATE TEMPORARY CONCRETE BARRIER, STATE OWNED.

Impact attenuators will be paid for separately.”

TRAFFIC CONTROL DEFICIENCY DEDUCTION (BDE)

Effective: April 1, 1992

Revised: January 1, 2005

To ensure a prompt response to incidents involving the integrity of work zone traffic control, the Contractor shall provide a telephone number where a responsible individual can be contacted 24 hours-a-day.

When the Engineer is notified, or determines a traffic control deficiency exists, he/she will notify and direct the Contractor to correct the deficiency within a specified time. The specified time, which begins upon notification to the Contractor, will be from 1/2 hour to 12 hours based upon the urgency of the situation and the nature of the deficiency. The Engineer shall be the sole judge.

A deficiency may be any lack of repair, maintenance, or non-compliance with the traffic control plan. A deficiency may also be applied to situations where corrective action is not an option such as the use of non-certified flaggers for short term operations; working with lane closures beyond the time allowed in the contract; or failure to perform required contract obligations such as traffic control surveillance.

If the Contractor fails to correct a deficiency within the specified time, a daily monetary deduction will be imposed for each calendar day or fraction thereof the deficiency exists. The calendar day(s) will begin with notification to the Contractor and end with the Engineer's acceptance of the correction. The daily monetary deduction will be either \$1,000 or 0.05 percent of the awarded contract value, whichever is greater. For those deficiencies where corrective action was not an option this monetary deduction will be immediate.

In addition, if the Contractor fails to respond, the Engineer may correct the deficiency and the cost thereof will be deducted from monies due or which may become due the Contractor. This corrective action will in no way relieve the Contractor of his/her contractual requirements or responsibilities.

TRAINING SPECIAL PROVISIONS

This Training Special Provision supersedes Section 7b of the Special Provision entitled "Specific Equal Employment Opportunity Responsibilities," and is in implementation of 23 U.S.C. 140(a).

As part of the contractor's equal employment opportunity affirmative action program, training shall be provided as follows:

The contractor shall provide on-the-job training aimed at developing full journeyman in the type of trade or job classification involved. The number of trainees to be trained under this contract will be 2. In the event the contractor subcontracts a portion of the contract work, he shall determine how many, if any, of the trainees are to be trained by the subcontractor, provided however, that the contractor shall retain the primary responsibility for meeting the training requirements imposed by this special provision. The contractor shall also insure that this Training Special Provision is made applicable to such subcontract. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training.

The number of trainees shall be distributed among the work classifications on the basis of the contractor's needs and the availability of journeymen in the various classifications within the reasonable area of recruitment. Prior to commencing construction, the contractor shall submit to the Illinois Department of Transportation for approval the number of trainees to be trained in each selected classification and training program to be used. Furthermore, the contractor shall specify the starting time for training in each of the classifications. The contractor will be credited for each trainee employed by him on the contract work who is currently enrolled or becomes enrolled in an approved program and will be reimbursed for such trainees as provided hereinafter.

Training and upgrading of minorities and women toward journeyman status is a primary objective of this Training Special Provision. Accordingly, the contractor shall make every effort to enroll minority trainees and women (e.g. by conducting systematic and direct recruitment through public and private sources likely to yield minority and women trainees) to the extent such persons are available within a reasonable area of recruitment. The contractor will be responsible for demonstrating the steps that he has taken in pursuance thereof, prior to a determination as to whether the contractor is in compliance with this Training Special Provision. This training commitment is not intended, and shall not be used, to discriminate against any applicant for training, whether a member of a minority group or not.

No employee shall be employed as a trainee in any classification in which he has successfully completed a training course leading to journeyman status or in which he has been employed as a journeyman. The contractor should satisfy this requirement by including appropriate questions in the employee application or by other suitable means. Regardless of the method used the contractor's records should document the findings in each case.

The minimum length and type of training for each classification will be as established in the training program selected by the contractor and approved by the Illinois Department of Transportation and the Federal Highway Administration. The Illinois Department of Transportation and the Federal Highway Administration shall approve a program, if it is reasonably calculated to meet the equal employment opportunity obligations of the contractor and to qualify the average trainee for journeyman status in the classification concerned by the end of the training period. Furthermore, apprenticeship programs registered with the U.S.

Department of Labor, Bureau of Apprenticeship and Training, or with a State apprenticeship agency recognized by the Bureau and training programs approved by not necessarily sponsored by the U.S. Department of Labor, Manpower Administration, Bureau of Apprenticeship and Training shall also be considered acceptable provided it is being administered in a manner consistent with the equal employment obligations of Federal-aid highway construction contracts. Approval or acceptance of a training program shall be obtained from the State prior to commencing work on the classification covered by the program. It is the intention of these provisions that training is to be provided in the construction crafts rather than clerk-typists or secretarial-type positions. Training is permissible in lower level management positions such as office engineers, estimators, timekeepers, etc., where the training is oriented toward construction applications. Training in the laborer classification may be permitted provided that significant and meaningful training is provided and approved by the Illinois Department of Transportation and the Federal Highway Administration. Some offsite training is permissible as long as the training is an integral part of an approved training program and does not comprise a significant part of the overall training.

Except as otherwise noted below, the contractor will be reimbursed 80 cents per hour of training given an employee on this contract in accordance with an approved training program. As approved by the Engineer, reimbursement will be made for training of persons in excess of the number specified herein. This reimbursement will be made even though the contractor receives additional training program funds from other sources, provided such other source does not specifically prohibit the contractor from receiving other reimbursement. Reimbursement for offsite training indicated above may only be made to the contractor where he does one or more of the following and the trainees are concurrently employed on a Federal-aid project; contributes to the cost of the training, provides the instruction to the trainee or pays the trainee's wages during the offsite training period.

No payment shall be made to the contractor if either the failure to provide the required training, or the failure to hire the trainee as a journeyman, is caused by the contractor and evidences a lack of good faith on the part of the contractor in meeting the requirement of this Training Special Provision. It is normally expected that a trainee will begin his training on the project as soon as feasible after start of work utilizing the skill involved and remain on the project as long as training opportunities exist in his work classification or until he has completed his training program.

It is not required that all trainees be on board for the entire length of the contract. A contractor will have fulfilled his responsibilities under this Training Special Provision if he has provided acceptable training to the number of trainees specified. The number trained shall be determined on the basis of the total number enrolled on the contract for a significant period.

Trainees will be paid at least 60 percent of the appropriate minimum journeyman's rate specified in the contract for the first half of the training period, 75 percent for the third quarter of the training period, and 90 percent for the last quarter of the training period, unless apprentices or trainees in an approved existing program are enrolled as trainees on this project. In that case, the appropriate rates approved by the Departments of Labor or Transportation in connection with the existing program shall apply to all trainees being trained for the same classification who are covered by this Training Special Provision.

The contractor shall furnish the trainee a copy of the program he will follow in providing the training. The contractor shall provide each trainee with a certification showing the type and length of training satisfactorily complete.

The contractor will provide for the maintenance of records and furnish periodic reports documenting his performance under this Training Special Provision.

METHOD OF MEASUREMENT The unit of measurement is in hours.

BASIS OF PAYMENT This work will be paid for at the contract unit price of 80 cents per hour for TRAINEES. The estimated total number of hours, unit price and total price have been included in the schedule of prices.

TRUCK BED RELEASE AGENT (BDE)

Effective: April 1, 2004

Add the following sentence after the third sentence of the first paragraph of Article 406.14 of the Standard Specifications.

“In addition to the release agent, the Contractor may use a light scatter of manufactured sand (FA 20 or FA 21) evenly distributed over the bed of the vehicle.”

WEIGHT CONTROL DEFICIENCY DEDUCTION

Effective: April 1, 2001

Revised: August 1, 2002

The Contractor shall provide accurate weights of materials delivered to the contract for incorporation into the work (whether temporary or permanent) and for which the basis of payment is by weight. These weights shall be documented on delivery tickets which shall identify the source of the material, type of material, the date and time the material was loaded, the contract number, the net weight, the tare weight when applicable and the identification of the transporting vehicle. For aggregates, the Contractor shall have the driver of the vehicle furnish or establish an acceptable alternative to provide the contract number and a copy of the material order to the source for each load. The source is defined as that facility that produces the final material product that is to be incorporated into the contract pay items.

The Department will conduct random, independent vehicle weight checks for material sources according to the procedures outlined in the Documentation Section Policy Statement of the Department's Construction Manual and hereby incorporated by reference. The results of the independent weight checks shall be applicable to all contracts containing this Special Provision. Should the vehicle weight check for a source result in the net weight of material on the vehicle exceeding the net weight of material shown on the delivery ticket by 0.50% (0.70% for aggregates) or more, the Engineer will document the independent vehicle weight check and immediately furnish a copy of the results to the Contractor. No adjustment in pay quantity will be made. Should the vehicle weight check for a source result in the net weight of material shown on the delivery ticket exceeding the net weight of material on the vehicle by 0.50% (0.70% for aggregates) or more, the Engineer will document the independent vehicle weight check and immediately furnish a copy of the results to the Contractor. The Engineer will adjust the net weight shown on the delivery ticket to the checked delivered net weight as determined by the independent vehicle weight check.

The Engineer will also adjust the method of measurement for all contracts for subsequent deliveries of all materials from the source based on the independent weight check. The net

weight of all materials delivered to all contracts containing this Special Provision from this source, for which the basis of payment is by weight, will be adjusted by applying a correction factor "A" as determined by the following formula:

$$A = 1.0 - \left(\frac{B - C}{B} \right); \text{ Where } A \leq 1.0; \left(\frac{B - C}{C} \right) > 0.50\% \text{ (0.70\% for aggregates)}$$

Where A = Adjustment factor
B = Net weight shown on delivery ticket
C = Net weight determined from independent weight check

The adjustment factor will be applied as follows:

$$\text{Adjusted Net Weight} = A \times \text{Delivery Ticket Net Weight}$$

The adjustment factor will be imposed until the cause of the deficient weight is identified and corrected by the Contractor to the satisfaction of the Engineer. If the cause of the deficient weight is not identified and corrected within seven (7) calendar days, the source shall cease delivery of all materials to all contracts containing this Special Provision for which the basis of payment is by weight.

Should the Contractor elect to challenge the results of the independent weight check, the Engineer will continue to document the weight of material for which the adjustment factor would be applied. However, provided the Contractor furnishes the Engineer with written documentation that the source scale has been calibrated within seven (7) calendar days after the date of the independent weight check, adjustments in the weight of material paid for will not be applied unless the scale calibration demonstrates that the source scale was not within the specified Department of Agriculture tolerance.

At the Contractor's option, the vehicle may be weighed on a second independent Department of Agriculture certified scale to verify the accuracy of the scale used for the independent weight check.

WORK ZONE PUBLIC INFORMATION SIGNS (BDE)

Effective: September 1, 2002

Revised: January 1, 2005

Description. This work shall consist of furnishing, erecting, maintaining, and removing work zone public information signs.

Camera-ready artwork for the signs will be provided to sign manufacturing companies upon request by contacting the Central Bureau of Operations at 217-782-2076. The sign number is W21-I116-6048.

Freeways/Expressways. These signs are required on freeways and expressways. The signs shall be erected as shown on Highway Standard 701400 and according to Article 702.05(a) of the Standard Specifications.

All Other Routes. These signs shall be used on other routes when specified on the plans. They shall be erected in pairs midway between the first and second warning signs.

Basis of Payment. This work will not be paid for separately but shall be considered as included in the cost of the Standard.

WORK ZONE SPEED LIMIT SIGNS (BDE)

Effective: April 2, 2004

Revised: April 15, 2004

Delete Article 702.05(c).

Revise Article 702.05(d) to read:

“(d) Work Zone Speed Limit Signs. Work zone speed limit sign assemblies shall be provided and located as shown on the plans. Two additional assemblies shall be placed 150 m (500 ft) beyond the last entrance ramp for each interchange. The individual signs that make up an assembly may be combined on a single panel. The sheeting for the signs shall be reflective and conform to the requirements of Article 1084.02.

All permanent “SPEED LIMIT” signs located within the work zone shall be removed or covered. This work shall be coordinated with the lane closure(s) by promptly establishing a reduced posted speed zone when the lane closure(s) are put into effect and promptly reinstating the posted speed zone when the lane closure(s) are removed.

The work zone speed limit signs and end work zone speed limit signs shown in advance of and at the end of the lane closure(s) shall be used for the entire duration of the closure(s).

The work zone speed limit signs shown within the lane closure(s) shall only be used when workers are present in the closed lane adjacent to traffic; at all other times, the signs shall be promptly removed or covered. The sign assemblies shown within the lane closure(s) will not be required when the worker(s) are located behind a concrete barrier wall.

WORK ZONE TRAFFIC CONTROL DEVICES (BDE)

Effective: January 1, 2003

Revised: November 1, 2004

Add the following to Article 702.01 of the Standard Specifications:

“All devices and combinations of devices shall meet the requirements of the National Cooperative Highway Research Program (NCHRP) Report 350 for their respective categories. The categories are as follows:

Category 1 includes small, lightweight, channelizing and delineating devices that have been in common use for many years and are known to be crashworthy by crash testing of similar devices or years of demonstrable safe performance. These include cones, tubular markers, flexible delineators and plastic drums with no attachments. Category 1 devices shall be crash tested and accepted or may be self-certified by the manufacturer.

Category 2 includes devices that are not expected to produce significant vehicular velocity change but may otherwise be hazardous. These include drums and vertical panels with lights, barricades and portable sign supports. Category 2 devices shall be crash tested and accepted for Test Level 3.

Category 3 includes devices that are expected to cause significant velocity changes or other potentially harmful reactions to impacting vehicles. These include crash cushions, truck mounted attenuators and other devices not meeting the definitions of Category 1 or 2. Category 3 devices shall be crash tested and accepted for either Test Level 3 or the test level specified.

Category 4 includes portable or trailer-mounted devices such as arrow boards, changeable message signs, temporary traffic signals and area lighting supports. Currently, there is no implementation date set for this category and it is exempt from the NCHRP 350 compliance requirement.

The Contractor shall provide a manufacturer's self-certification letter for each Category 1 device and an FHWA acceptance letter for each Category 2 and Category 3 device used on the contract. The letters shall state the device meets the NCHRP 350 requirements for its respective category and test level, and shall include a detail drawing of the device."

Delete the third, fourth and fifth paragraphs of Article 702.03(b) of the Standard Specifications.

Delete the third sentence of the first paragraph of Article 702.03(c) of the Standard Specifications.

Revise the first sentence of the first paragraph of Article 702.03(e) of the Standard Specifications to read:

"Drums shall be nonmetallic and have alternating reflectorized Type AA or Type AP fluorescent orange and reflectorized white horizontal, circumferential stripes."

Add the following to Article 702.03 of the Standard Specifications:

"(h) Vertical Barricades. Vertical barricades may be used in lieu of cones, drums or Type II barricades to channelize traffic."

Delete the fourth paragraph of Article 702.05(a) of the Standard Specifications.

Revise the sixth paragraph of Article 702.05(a) of the Standard Specifications to read:

"When the work operations exceed four days, all signs shall be post mounted unless the signs are located on the pavement or define a moving or intermittent operation. When approved by the Engineer, a temporary sign stand may be used to support a sign at 1.2 m (5 ft) minimum where posts are impractical. Longitudinal dimensions shown on the plans for the placement of signs may be increased up to 30 m (100 ft) to avoid obstacles, hazards or to improve sight distance, when approved by the Engineer. "ROAD CONSTRUCTION AHEAD" signs will also be required on side roads located within the limits of the mainline "ROAD CONSTRUCTION AHEAD" signs."

Delete all references to "Type 1A barricades" and "wing barricades" throughout Section 702 of the Standard Specifications.

STEEL COST ADJUSTMENT (BDE)

Effective: April 2, 2004

Revised: July 1, 2004

Description. At the bidder's option, a steel cost adjustment will be made to provide additional compensation to the Contractor or a credit to the Department for fluctuations in steel prices.

The bidder must indicate on the attached form whether or not steel cost adjustments will be part of this contract. This attached form shall be submitted with the bid. Failure to submit the form shall make this contract exempt of steel cost adjustments.

Types of Steel Products. An adjustment will be made for fluctuations in the cost of steel used in the manufacture of the following items:

Metal Piling (excluding temporary sheet piling)
Structural Steel
Reinforcing Steel

Other steel materials such as dowel bars, tie bars, mesh reinforcement, guardrail, steel traffic signal and light poles, towers and mast arms, metal railings (excluding wire fence), frames and grates, and other miscellaneous items will be subject to a steel cost adjustment when the pay item they are used in has a contract value of \$10,000 or greater.

Documentation. Sufficient documentation shall be furnished to the Engineer to verify the following:

- (a) Evidence that increased or decreased steel costs have been passed on to the Contractor.
- (b) The dates and quantity of steel, in kg (lb), shipped from the mill to the fabricator.
- (c) The quantity of steel, in kg (lb), incorporated into the various items of work covered by this special provision. The Department reserves the right to verify submitted quantities.

Method of Adjustment. Steel cost adjustments will be computed as follows:

$$SCA = Q \times D$$

Where: SCA = steel cost adjustment, in dollars
Q = quantity of steel incorporated into the work, in kg (lb)
D = price factor, in dollars per kg (lb)

$$D = CBP_M - CBP_L$$

Where: CBP_M = The average of the Consumer Buying Price indices for Shredded Auto Scrap (Chicago) and No. 1 Heavy Melt (Chicago) as published by the American Metal Market (AMM) for the day the steel is shipped from the mill. The indices will be converted from dollars per ton to dollars per kg (lb).

CBP_L = The average of the Consumer Buying Price indices for Shredded Auto Scrap (Chicago) and No. 1 Heavy Melt (Chicago) as published by the AMM for the day the contract is let. The indices will be converted from dollars per ton to dollars per kg (lb).

The unit masses (weights) of steel that will be used to calculate the steel cost adjustment for the various items are shown in the attached table.

No steel cost adjustment will be made for any products manufactured from steel having a mill shipping date prior to the letting date.

If the Contractor fails to provide the required documentation, the method of adjustment will be calculated as described above; however, the CBP_M will be based on the date the steel arrives at the job site. In this case, an adjustment will only be made when there is a decrease in steel costs.

Basis of Payment. Steel cost adjustments may be positive or negative but will only be made when there is a difference between the CBP_L and CBP_M in excess of five percent, as calculated by:

$$\text{Percent Difference} = \{(CBP_L - CBP_M) \div CBP_L\} \times 100$$

Steel cost adjustments will be calculated by the Engineer and will be paid or deducted when all other contract requirements for the steel items are satisfied. Adjustments will only be made for fluctuations in the cost of the steel as described herein. No adjustment will be made for changes in the cost of manufacturing, fabrication, shipping, storage, etc.

Attachment

| Item | Unit Mass (Weight) |
|---|-------------------------------|
| Metal Piling (excluding temporary sheet piling) | |
| Furnishing Metal Pile Shells 305 mm (12 in.), 3.80 mm (0.179 in.) wall thickness) | 34 kg/m (23 lb/ft) |
| Furnishing Metal Pile Shells 305 mm (12 in.), 6.35 mm (0.250 in.) wall thickness) | 48 kg/m (32 lb/ft) |
| Furnishing Metal Pile Shells 356 mm (14 in.), 6.35 mm (0.250 in.) wall thickness) | 55 kg/m (37 lb/ft) |
| Other piling | See plans |
| Structural Steel | See plans for weights |
| Reinforcing Steel | See plans for weights |
| Dowel Bars and Tie Bars | 3 kg (6 lb) each |
| Mesh Reinforcement | 310 kg/sq m (63 lb/100 sq ft) |
| Guardrail | |
| Steel Plate Beam Guardrail, Type A w/steel posts | 30 kg/m (20 lb/ft) |
| Steel Plate Beam Guardrail, Type B w/steel posts | 45 kg/m (30 lb/ft) |
| Steel Plate Beam Guardrail, Types A and B w/wood posts | 12 kg/m (8 lb/ft) |
| Steel Plate Beam Guardrail, Type 2 | 140 kg (305 lb) each |
| Steel Plate Beam Guardrail, Type 6 | 570 kg (1260 lb) each |
| Traffic Barrier Terminal, Type 1 Special (Tangent) | 330 kg (730 lb) each |
| Traffic Barrier Terminal, Type 1 Special (Flared) | 185 kg (410 lb) each |
| Steel Traffic Signal and Light Poles, Towers and Mast Arms | |
| Traffic Signal Post | 16 kg/m (11 lb/ft) |
| Light Pole, Tenon Mount and Twin Mount, 9 m – 12 m (30 - 40 ft) | 21 kg/m (14 lb/ft) |
| Light Pole, Tenon Mount and Twin Mount, 13.5 m – 16.5 m (45 - 55 ft) | 31 kg/m (21 lb/ft) |
| Light Pole w/Mast Arm, 9 m – 15.2 m (30 - 50 ft) | 19 kg/m (13 lb/ft) |
| Light Pole w/Mast Arm, 16.5 m – 18 m (55 - 60 ft) | 28 kg/m (19 lb/ft) |
| Light Tower w/Luminaire Mount, 24 m – 33.5 m (80 - 110 ft) | 46 kg/m (31 lb/ft) |
| Light Tower w/Luminaire Mount, 36.5 m – 42.5 m (120 - 140 ft) | 97 kg/m (65 lb/ft) |
| Light Tower w/Luminaire Mount, 45.5 m – 48.5 m (150 - 160 ft) | 119 kg/m (80 lb/ft) |
| Metal Railings (excluding wire fence) | |
| Steel Railing, Type SM | 95 kg/m (64 lb/ft) |
| Steel Railing, Type S-1 | 58 kg/m (39 lb/ft) |
| Steel Railing, Type T-1 | 79 kg/m (53 lb/ft) |
| Steel Bridge Rail | 77 kg/m (52 lb/ft) |
| Frames and Grates | |
| Frame | 115 kg (250 lb) |
| Lids and Grates | 70 kg (150 lb) |

RETURN WITH BID

**ILLINOIS DEPARTMENT
OF TRANSPORTATION**

**OPTION FOR
STEEL COST ADJUSTMENT**

The bidder shall submit this form with his/her bid. Failure to submit the form shall make this contract exempt of steel cost adjustments. After award, this form, when submitted shall become part of the contract.

Contract No.: _____

Company Name: _____

Contractor's Option:

Is your company opting to include this special provision as part of the contract plans?

Yes No

Signature: _____ **Date:** _____

80127



Storm Water Pollution Prevention Plan

Route I-90/94 Dan Ryan Expressway Marked Dan Ryan Expressway
I-57 at Illinois Route 1 (Halsted St) &
I-90 at MLK to 31st Street

Section See individual contract Project No. Various Contract Numbers –
Refer to Attachment

County Cook, IL

This plan has been prepared to comply with the provisions of the MSY-Phase II NPDES Permit Number ILR40, issued by the Illinois Environmental Protection Agency for storm water discharges.

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 managed 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.

John P. Kern
Signature

August 5, 2003
Date

District Engineer
Title

1 Site Description

- a. The following is a description of the construction activity which is the subject of this plan (use additional pages, as necessary):

The project is located at Interstate 94 (the Dan Ryan Expressway) from the I-57 interchange to Illinois 1 (Halsted Street) to the west and Martin Luther King (MLK) Drive to the east, and continues in a northerly direction to 31st Street.

Construction Descriptions

The Dan Ryan Expressway project consists of roadway improvements including added lanes, mainline and shoulder reconstruction, construction of retaining walls, new collector-distributor roadways, new and relocated exit and entrance ramps, lighting, drainage, signing, and surveillance improvements.

The Dan Ryan Expressway reconstruction project was designed in three segments in Phase I. The three segments are described from south to north.

The segment from 95th to 67th Streets (U.S. Route 20 / 45), the improvement includes reconstruction of the eight traffic lanes of the existing Dan Ryan Expressway pavement, the addition of a through travel lane in each direction, and modifications to entrance and exit ramps. The improvement involves the addition of a through travel lane along both northbound and southbound Dan Ryan onto Interstate 57 to the interchange with Halsted Street (Illinois Route 1). There are intersection improvements at 79th Street.

The segment from 95th to 67th Streets (U.S. Route 20 / 45), the improvement includes reconstruction of the eight traffic lanes of the existing Dan Ryan Expressway pavement, the addition of a through travel lane in each direction, and modifications to entrance and exit ramps. The improvement involves the addition of a through travel lane along both northbound and southbound Dan Ryan onto Interstate 57 to the interchange with Halsted Street (Illinois Route 1). There are intersection improvements at 79th Street.

The segment from 67th to 47th Street includes reconstruction of the existing northbound and southbound express lanes (four lanes in each direction) and local lanes (two lanes in each direction). The improvement will also provide for an additional through travel lane in each direction to the local traffic lanes, and modifications to all entrance and exit ramps. There are intersection improvements at 67th Street. Frontage roads will be reconstructed both northbound and southbound from 63rd to 47th Streets. Additional work will involve bridge construction and reconfiguration of the Chicago Skyway / Dan Ryan Expressway interchange to provide an additional entrance ramp from the Chicago Skyway to connect directly to the northbound Dan Ryan Expressway express lanes.

The scope of the roadway work between 47th and 31st Streets will include reconstruction of the existing northbound and southbound express lanes (four lanes in each direction) and local lanes (three lanes in each direction) to the Dan Ryan Expressway pavement, and the reconstruction and/or reconfiguration of entrance and exit ramps. The Root Street structure (41st Street) will be removed.

The drainage work consists of removing or abandoning the existing collector storm sewer system and surface water collection system and constructing a new collector storm sewer and surface water collection system. The existing main drain will remain in place and remain functional, with new connections for the proposed storm sewer system. New collector sewers to drain the area directly tributary to the Dan Ryan Expressway (CTA tracks, local lanes, and adjacent ramps and grass areas), and overflows from offsite tributary areas (frontage roads) are planned. Separate collector sewers are required to drain the northbound and southbound lanes of the Dan Ryan Expressway. These proposed collector sewers are to be designed to convey the 50-year storm event.

The work will include the construction of new retaining walls and the rehabilitation, and/or modifications of several existing retaining walls and any roadway and traffic signal improvements required at cross streets and alternate routes.

In addition, other improvements include:

- A new highway lighting system (110 foot towers with lights on 11-foot mounting rings).
- New expressway signing (provides four new and upgrade three changeable message signs).
- Replacement of traffic surveillance equipment with upgraded technology.
- Closed circuit television for traffic conditions and crash incident monitoring.
- Accident investigation sites.
- Other incidental work as required completing the reconstruction of this segment of the expressway to AASHTO and IDOT criteria.

The improvement will also consolidate several points of access and improve the unsafe weaving conditions created by the existing substandard weaving distances. Currently, ramps are spaced evenly at one-half mile increments, resulting in weaving distances in the range of 300 feet. This is a major safety concern and suspected cause for the high incidence of sideswipe collisions in the ramp influence areas. The proposed access consolidation plan improves many of the mainline weaving movements while minimally influencing the local access to the Dan Ryan Expressway through the addition of collector-distributor roadways and both entrance and exit ramp removals. The presence of parallel city street frontage roads facilitates local access without substantive changes in through and local travel patterns. The proposals for ramp closure are:

- Northbound (NB) exit and southbound (SB) entrance at 76th Street (2 ramps)
- Northbound (NB) and southbound (SB) exits and entrances at 59th Street (4 ramps)
- Northbound (NB) and southbound (SB) exits and entrances at 51st Street (4 ramps)
- Northbound (NB) exit and southbound (SB) entrance at 43rd Street (2 ramps)

Capacity analyses indicate unsatisfactory conditions at the intersections of 55th Street (Garfield Boulevard) / Wells Street and 55th Street (Garfield Boulevard) / Wentworth Avenue. The improvements necessary to make this interchange operate effectively require right-of-way acquisition from three separate parcels. The parcels on the southwest quadrant of 55th Street (Garfield Boulevard) / Wells Street is occupied by a "Mobil Service Station" in which a portion of each of the two parcels must be acquired to construct an eastbound to southbound right turn lane. In addition, dual right turn lanes are proposed for the northbound to eastbound movement at the intersection of 55th Street (Garfield Boulevard) / Wentworth Avenue. These right turn lanes require securing property, the portion of the parcel that is currently vacant.

To construct the proposed two-lane, left-hand exit to the Chicago Skyway from the southbound lanes on the Dan Ryan Expressway, Wells Street needs to be relocated from 64th Street to 65th Street. The improvement requires reconstruction of an 18 foot high retaining wall adjacent to the mainline and the

full replacement of the frontage road (Wells Street) pavement. The realignment shifts the centerline of the road approximately 10 feet west. A relocation and reconstruction of the west sidewalk bordering Wells Street does encroach into a parcel currently owned by the Chicago Housing Authority for the "Yale Street Apartment". The corner parcel would facilitate the relocation and reconstruction of the 5 foot sidewalk and modifications to the bituminous parking lot.

The right-of-way uses are summarized in the tabulation below:

| Right-of-Way Acquisition | Acres | Number of Parcels |
|--|--------------|--------------------------|
| SW Corner of 55 th / Wells Street | 0.05 | 6 |
| SE Corner of 55 th / Wentworth Avenue | 0.10 | 1 |
| NE Corner of 57 th / Wentworth Avenue | 0.12 | 2 |
| SE Corner of 57 th / Wentworth Avenue | 0.24 | 1 |
| NE Corner of 59 th / Wentworth Avenue | 0.007 | 1 |
| SE Corner of 59 th / Wentworth Avenue | 0.014 | 1 |
| NW Corner of 63 rd / Wells Street | 0.05 | 1 |
| Along West edge of Wells Street From 65th Street to 64th Street | 0.11 | 1 |
| Temporary Construction Easement | Acres | Number of Parcels |
| Along west edge of Wells Street From 65 th Street to 64 th Street | 0.07 | 1 |

The Total Acquired Right-of-Way (ROW) is 0.691 acres involving eight parcels, with a Temporary Construction Easement (TCE) of 0.07 acres involving one parcel.

Environmental Descriptions

Special waste for the Dan Ryan project has **HIGH** risk for the occurrence of regulated substances or natural hazards at twelve sites. A Preliminary Environmental Site Assessment (PESA #1106) with stipulations for excavation depths varies for twelve high risk locations. Depth stipulations can be met at Sites: 808-10A, 1106-17B, 1106-25B, 1106-44A, and 1106-51. A request for Preliminary Site Investigation (PSI) will be required for Sites: 1106-2B, 1106-4A, 1106-6A, and 1106-9, 1106-33B, 1106-47, and 1106-52.

Besides special waste, there are no ecologically sensitive areas in the Dan Ryan project area. The Environmental Survey Request Form (ESRF) on 10/15/99 requested only biological and special waste survey because all of the ground had been previously disturbed and no new right-of-way is to be involved with areas not previously occupied, excavated, or disturbed. The project, as described on the ESRF, does not require biological or wetland surveys. The Illinois Department of Natural Resources (IDNR) Natural Heritage Database has no records of listed species, natural areas or nature preserves within the Dan Ryan

project corridor (IDNR Agency Action Report dated September 20, 1999). By agreement, no coordination with the Illinois Department of Natural Resources (IDNR) and the U.S. Fish and Wildlife Service (USFWS) are necessary.

No streams or rivers are involved with this project. There is no water resources in the area involved with the project. A closed drainage system for storm water and urban roadway cross section, including pavement and shoulder, will continue.

The project will result in the disturbance of 0.4 or more hectares (1.0 acre). Permit coverage for the project is secured either under the IEPA Phase II General Permit for Storm-water Discharges (NPDES Permit No. ILR40) or under an individual NPDES permit. Requirements applicable for a permit will be followed, including the preparation of a Storm-water Pollution Prevention Plan. The plan shall identify potential sources of pollution that may reasonably be expected to affect the quality of storm water discharges from the construction site. The plan shall describe and ensure the implementation of practices that will reduce the pollutants in discharges associated with construction site activity and assure compliance with terms of the permits.

Although there may be a remote possibility (not likely) of a potable water well within 200 feet (60 meters) of the centerline, this threshold is only relevant for routes and sources of groundwater pollution. Since this project will not introduce any new routes of groundwater pollution (dry wells, "French drains", or borrow pits) or sources (bulk road oil or deicing storage facilities), then there will be no violation of the wellhead setback requirements.

According to the National Flood Insurance Rate Maps (FIRM), there are no flood plains involved within this project limits.

From field inspection by project team environmental and wetland specialists, and their review of the available and published National Wetlands Inventory (NWI) maps, and the most recent available aerial photography of the area, determined wetlands are not involved. The project is within the existing rights-of-way, and no wetlands are located within or adjacent to the required parcels, which include: west edge of Wells Street from 65th to 64th Street; 63rd Street and South Wells Street, 59th Street and Wentworth Avenue; 57th Street and Wentworth Avenue; 55th Street and South Wentworth Avenue, and 55th Street and South Wells Street.

There is no use or proposed use of protected Section 4(f), Section 6f lands, or lands that have OSLAD funds involved with their purchase and/or development.

- b. The following is a description of the intended sequence of major activities for the reconstruction of the Dan Ryan Expressway. The construction year, contract number, description, duration of construction, and highlights of work to be completed follow.

Contract # – Name/Description

Contract Duration

- Major Activities

Construction Year 2003

62573 – Shoulder Repair and Median Cross-Over

August 18 – October 31, 2003

- Reconstruction of the 65th to 47th Street local lane inside shoulder

62591 – Storm Sewer Jacking

November 15, 2003 – June 4, 2004

- Storm sewer jacking from 95th to 67th Streets

Construction Year 2004 to 2005

62594 – 83rd to 79th Street C-D System and Ramps

March 1 – October 31, 2004

- Reconstruction and reconfiguration of the collector-distributor (C-D) ramps between 83rd and 79th Streets
- Replacement of the storm sewer
- Retaining wall construction

62691 – Reconstruct Watermain Crossing under the Dan Ryan from 32nd Street to 63rd Street

May 3, 2004 – June 20, 2005

62590 – 71st to 67th Street C-D System and Ramps

June 21, 2004 – August 15, 2005

- Reconstruction of the collector-distributor (C-D) ramps between 71st and 67th Street
- Improvements to 67th Street / State Street intersection
- Retaining wall construction
- Reconstruction of the 67th Street bridge

62587 – Wentworth Avenue Overpass and Wells Street Realignment

June 21, 2004 – June 30, 2005

- Reconstruction of Wells Street from 67th to 63rd Street
- Reconstruction of Wentworth Avenue bridge

62589 – Skyway Interchange Bridges and Local Lanes Wentworth Avenue to 67th Street

June 21, 2004 – August 15, 2005

- Dan Ryan / Skyway interchange
- Reconstruction of local lanes from 67th to 63rd Street

- Retaining wall construction
- 62586** – 57th Street Bridge, Retaining Walls, Ramps and Frontage Roads 63rd to 47th Streets
August 1, 2004 – October 31, 2005
- Reconstruction of the frontage roads, Wells Street and Wentworth Avenue, between 63rd and 47th Street
 - Construction of eight (8) new ramps between 63rd and 47th Street
 - Construction of the new 57th Street bridge over the Dan Ryan
 - Retaining walls
- 62585** – Reconstruct SB Ramps between 39th and 31st Street and Shoulder Reconstruction
September 13, 2004 – November 30, 2005
- Reconstruction of the SB ramps between 39th and 31st Street
- 62584** – Reconstruct NB Ramps between 39th and 31st Street and Shoulder Reconstruction
September 13, 2004 – November 30, 2004
- Reconstruction of the NB ramps between 39th and 31st Street
- 62692** – Reconstruct Watermain Crossings under the Dan Ryan from 75th Street to the I-57 Interchange
September 27, 2004 – July 1, 2005
- TBA** – Reconstruct I-57 Bridge over WB Cross Connection from I-94 and Tunnel over SB I-94
December 21, 2004 – July 4, 2005
- 62694** – NB Retaining Walls and Ramps from 71st to I-57 and 71st to 75th Street C-D System
February 28, 2005 – December 30, 2005
- 62695** – SB Retaining Walls and Ramps from 71st Street to I-57 and 71st to 75th Street C-D System
February 28, 2005 – December 30, 2005

Construction Year 2006

- 62592** – NB Outside Lanes (4, 5, and Shoulder), 71st to I-57 and Miscellaneous Ramps
March 6 – October 27, 2006
- Reconstruction of the local lanes 4, 5, and the outside shoulder for the Dan Ryan I-57 interchange
 - Replacement of the storm sewer

- Retaining wall construction

62593 – SB Outside Lanes (4, 5, and Shoulder), 71st to I-57 and Miscellaneous Ramps

March 6 – October 27, 2006

- Reconstruction of the local lanes 4, 5, and the outside shoulder for the Dan Ryan I-57 interchange
- Replacement of the storm sewer
- Retaining wall construction

62302 – SB Express Lanes 71st to 47th Streets

March 6 – October 27, 2006

- Reconstruction of the express lanes between 67th and 47th Street
- Construction of lanes 4 & 5 between 71st and 67th Street

62300 – NB Express Lanes 71st to 31st Streets

March 6 – October 27, 2006

- Reconstruction of the NB and SB express lanes between 71st to 31st Street

Construction Year 2007

62304 – NB Inside Lanes (1, 2 and 3, shoulder and barrier wall) from 71st Street and the I-57 Interchange and Miscellaneous Ramps

March – November 2007

- Reconstruction of the NB local lane 3
- Reconstruction of the I-57 interchange
- Replacement of the storm sewer
- Reconstruction of NB Dan Ryan inside Lanes 1 and 2
- Reconstruction of CTA wall

62305 – SB Inside Lanes (1, 2 and 3, shoulder and barrier wall) from 71st Street and the I-57 Interchange and Miscellaneous Ramps

March – November 2007

- Reconstruction of the SB local lanes 3
- Reconstruction of the I-57 interchange
- Replacement of the storm sewer
- Reconstruction of SB Dan Ryan inside Lanes 1 and 2
- Reconstruction of CTA wall

62303 – SB Local Lanes 71st to 31st Streets and Miscellaneous Ramps

March – November 2007

- Reconstruction of the local lanes between 67th and 47th Street
- Reconstruction of the local lanes 1, 2, and 3 between 71st and 67th Street
- Construction of the WB Skyway ramp to NB Dan Ryan Local

62301 – NB Local Lanes 71st to 31st Streets and Miscellaneous Ramps
March 7 – November 2007

- Reconstruction of the NB and SB local lanes between 47th to 31st Street

c. The total area of the construction site is estimated to be 612 acres.

The total area of the site that it is estimated will be disturbed by excavation, grading or other activities is acres 433.

- d. The estimated runoff coefficients of the various areas of the site after construction activities are completed are contained in the project drainage study, which is hereby incorporated by reference in this plan. Information describing the soils at the site is contained in individual Soils Reports for each construction contract.
- e. The design/project report, hydraulic report, or plan documents, hereby incorporated by reference, contain site map(s) indicating drainage patterns and approximate slopes anticipated after major grading activities, areas of major soil disturbance, the location of major structural and nonstructural 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 a surface water.
- f. The names of receiving water(s) and areal extent of wetland acreage at the site are in the design/project report or plan documents, which are incorporated by reference as a part of this plan.

2. Controls

This section of the plan addresses the various controls that will be implemented for each of the major construction activities described in 1.b. above. For each measure discussed, the contractor that will be responsible for its implementation is indicated. Each such contractor has signed the required certification on forms which are attached to, and a part of, this plan:

a. Erosion and Sediment Controls

- (i) Stabilization Practices. Provided below is a description of interim and permanent stabilization practices, including site-specific scheduling of the implementation of the practices. Site plans will ensure that existing vegetation is preserved where attainable and disturbed portions of the site will be stabilized. Stabilization practices may include: temporary seeding, permanent seeding, mulching, geotextiles, sod stabilization, vegetative buffer strips, protection of trees, preservation of mature vegetation, and other appropriate measures. Except as provided in 2.a.(i).(A) and 2.b., 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 14 days after the construction activity in that portion of the site has temporarily or permanently

ceased on all disturbed portions of the site where construction activity will not occur for a period of 21 or more calendar days.

- (A) Where the initiation of stabilization measures by the 14th day after construction activity temporarily or permanently ceases is precluded by snow cover, stabilization measures shall be initiated as soon as practicable thereafter.

Description of Stabilization Practices:

1. Temporary Erosion Control Seeding shall be applied in accordance with the Special Provision. Seed mixture will depend on the time of year it is applied. Oats will be applied from January 1 to July 31 and Hard Red Winter Wheat from August 1 to December 31.
2. Short Term Seeding - Seeding Class 2A shall be used to protect bare earth from more than just one or two summer-winter cycles. Due to the length and complexity of this project, it is necessary that short term, final graded slopes be short term seeded as directed by the Engineer.
3. Stone Riprap - Class A4 stone riprap with filter fabric will be used as protection at the discharge end of most storm sewer and culvert end sections to prevent scouring at the end of pipes and to prevent downstream erosion.
4. Temporary Tree Protection - Shall consist of items "temporary fencing" and "tree trunk protection" as directed by the engineer and in accordance with Article 201.05 of the Illinois Department of Transportation's Standard Specifications for Road and Bridge Construction.
5. Permanent Stabilization - All areas disturbed by construction will be stabilized as soon as permitted with permanent seeding following the finished grading, but always within seven days with Temporary Erosion Control Seeding. Erosion Blankets will be installed over fill slopes, which have been brought to final grade and have been seeded to protect the slopes from rill and gully erosion and allow seeds to germinate properly.
6. Erosion Control Blankets and Mulching - Erosion control blankets will be installed over fill slopes and in high velocity areas that have been brought to final grade and seeded to protect slopes from erosion and allow seeds to germinate. Mulch will be applied in relatively flat areas to prevent further erosion.

- (ii) 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 silt fences, earth dikes, drainage swales, sediment traps, check dams, 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.

Description of Structural Practices:

1. Sediment Control, Stabilized Construction Access - Coarse aggregate overlaying a geotextile fabric will be placed in locations necessary for contractor access. The aggregate surface of the access points will capture soil debris, reducing the amount of soil deposits placed on to the roadway by vehicles leaving the work zones.
2. Inlet Filters - Inlet and Pipe Protection will be provided for storm sewers. These filters will be placed in every inlet, catch basin or manhole with an open lid, which will drain water during at least a 10-year storm event. The Erosion Control Plan will identify the structures requiring Inlet filters.
3. Sediment Control, Silt Fence - A silt fence will be placed adjacent to the areas of construction to intercept waterborne silt and prevent it from leaving the site. These areas are marked on the erosion control plans in each contract.
4. Sediment Control, Temporary Ditch Checks - Rolled excelsior ditch checks will be placed in swales at the rate of one for every 0.3 meters in vertical drop, or as directed by the Engineer, in order to prevent downstream erosion.
5. Sediment Control, Temporary Stream Crossing - Coarse aggregate overlaying a geotextile fabric will be placed in locations necessary for contractor access over water channels. The aggregate surface of the crossing will reduce the amount of soil disturbance in the streams.
6. Sediment Control, Temporary Pipe Slope Drain - This item consists of a pipe with flared end sections, placed daily, along with anchor devices in conjunction with temporary berms that direct runoff down an unstabilized slope.

7. Sediment Control, Dewatering Basins will be provided at wherever the contractor is removing and discharging water from excavated areas and the water is not being routed through a sediment trap or basin.
8. Stone riprap will be provided at several storm and culvert outlets as a measure for erosion and sediment control where needed during and after the project.
9. Bridges will be designed to reduce the potential for scouring.
10. Underdrains will be used to minimize potential erosion caused by surface water flows by reducing the subsurface water which can cause failed pavements, unstable shoulders and other disturbed areas.
11. Covers will be placed on open ends of pipes in trenches.

The structural practices indicated above may not be used in every contract. The Erosion Control Plans included in every contract will indicate which structural practices are required for that contract.

b. 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.

- (i) Such practices may include: storm water detention structures (including wet ponds); storm water retention structures; flow attenuation by use of open vegetated swales and natural depressions; infiltration of runoff on site; and sequential systems (which combine several practices). **The practices selected for implementation were determined on the basis of the technical guidance in Section 10-300 (Design Considerations) in Chapter 10 (Erosion and Sedimentation Control) of the Illinois Department of Transportation Drainage Manual. If practices other than those discussed in Section 10-300 are selected for implementation or if practices are applied to situations different from those covered in Section 10-300, the technical basis for such decisions will be explained below.**
- (ii) 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).

- (iii) The Department proposes to remove vegetation within the project limits as necessary for construction. The Department proposes to revegetate according to the City of Chicago Landscape Framework Plan.

c. Other Controls

- (i) Waste Disposal. No solid materials, including building materials, shall be discharged into Waters of the State, except as authorized by a Section 404 permit.
- (ii) The provisions of this plan shall ensure and demonstrate compliance with applicable State and/or local waste disposal, sanitary sewer or septic system regulations.

d. Approved State or Local Plans

The management practices, controls and provisions contained in this plan will be in accordance with IDOT specifications, which are at least as protective as the requirements contained in the Illinois Environmental Protection Agency's Illinois Urban Manual, 1995. Procedures and requirements specified in applicable sediment and erosion site plans or storm water management plans approved by local officials shall be described or incorporated by reference in the space provided below. Requirements specified in sediment and erosion site plans or site permits or storm water management site plans or site permits approved by local officials that are applicable to protecting surface water resources are, upon submittal of an NOI to be authorized to discharge under permit ILR40 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: See Landscape Design and Erosion Control for further details. In addition, Guidance Memorandums #02-14 and #02-22 leading up to the ILR40NPDES Permit Requirements IDOT Strategies of Storm Water Management will be complied with along with Construction Memorandum 02-60.

3. Maintenance

The following is a description of procedures that will be used to maintain, in good and effective operating conditions, vegetation, erosion and sediment control measures and other protective measures identified in this plan:

Construction equipment shall be stored and fueled only at designated locations. All necessary measures shall be taken to contain any fuel or pollution runoff in compliance with environmental law and EPA Water Quality Regulations. Leaking equipment or supplies shall be immediately repaired or removed from the site. The construction field engineer on

a weekly basis shall inspect the project to determine that erosion controls efforts are in place and effective and if other control is necessary. Sediment collected during construction by the various temporary erosion systems shall be disposed on the site on a regular basis as directed by the Engineer.

All erosion and sediment control measures will be checked weekly and after each significant rainfall (13 mm (0.5 inch) or greater in a 24 hour period). The following items will be checked:

1. Seeding - all erodable bare earth areas will be temporarily seeded and inspected on a weekly basis to minimize the amount of erodable surface within the contract limits.
2. Silt Filter Fence, all types
3. Erosion Control Blanket
4. Tree Protection
5. Ditch Checks
6. Temporary slope drains
7. Sediment/dewatering basins
8. Stabilized construction entrances

All maintenance of the erosion control systems will be the responsibility of the contractor. All locations where vehicles enter and exit the construction site and all other areas subject to erosion should also be inspected periodically. Inspection of these areas shall be made at least once every seven days and within 24 hours of the end of each 13 mm (0.5 inch) or greater rainfall, or an equivalent snowfall.

4. Inspections

Qualified personnel shall inspect disturbed areas of the construction site, which have not been finally stabilized, structural control measures, and locations where vehicles enter or exit the site. Such inspections shall be conducted at least once every seven (7)-calendar days and within 24 hours of the end of a storm that is 0.5 inches or greater or equivalent snowfall.

- a. Disturbed areas and areas used for storage of materials that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the drainage system. Erosion and sediment control measures identified in the plan shall be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters. Locations where vehicles enter or exit the site shall be inspected for evidence of off site sediment tracking.
- b. Based on the results of the inspection, the description of potential pollutant sources identified in section 1 above and pollution prevention measures identified in section 2 above shall be revised as appropriate as soon as practicable after such inspection. Any

changes to this plan resulting from the required inspections shall be implemented within 7 calendar days following the inspection.

- c. A report summarizing the scope of the inspection, name(s) and qualifications of personnel making the inspection, the date(s) of the inspection, major observations relating to the implementation of this storm water pollution prevention plan, and actions taken in accordance with section 4.b. shall be made and retained as part of the plan for at least three (3) years after the date of the inspection. The report shall be signed in accordance with Part VI. G of the general permit.
- d. If any violation of the provisions of this plan is identified during the conduct of the construction work covered by this plan, the Resident Engineer or Resident Technician shall complete and file an "Incidence of Noncompliance" (ION) report for the identified violation. The Resident Engineer or Resident Technician shall use forms provided by the Illinois Environmental Protection Agency and shall include specific information on the cause of noncompliance, actions which were taken to prevent any further causes of noncompliance, and a statement detailing any environmental impact which may have resulted from the noncompliance. All reports of noncompliance shall be signed by a responsible authority in accordance with Part VI. G of the general permit.

The report of noncompliance 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

5. Non-Storm Water Discharges

Except for flows from fire fighting activities, sources of non-storm water that is combined with storm water discharges associated with the industrial activity addressed in this plan must be described below. Appropriate pollution prevention measures, as described below, will be implemented for the non-storm water component(s) of the discharge.

Dewatering activities for footing and pier construction of retaining walls and bridges will be a source of non-storm water discharge during construction. Contractors should discharge dewatering activities to a temporary settling basing surrounded by silt fence. The cutting of joints in PCC pavements or bridge deck grooving will result in slurry. This slurry must be contained on the deck/pavement and cleaned up.

An additional source of non-storm water discharge during construction is the slurry from washing out redi-mix concrete trucks. Redi-mix concrete trucks should wash out in

designated areas surrounded by silt fence. After all PCC items have been constructed, the dried concrete wash material should be cleaned up and properly disposed of. It will be the contractor's responsibility to secure these designated areas for the duration of their use. The Engineer must approve the locations.

On site maintenance of equipment must be performed in accordance with environmental law, such as proper storage and no dumping of old engine oil or other fluids on site.

Good Housekeeping

1. An effort will be made to store only enough product required to do the job.
2. All materials stored on site will be stored in a neat, orderly manner in their appropriate containers, and if possible, under a roof or other enclosure.
3. Products will be kept in their original containers with the original manufacturer's label.
4. Substances will not be mixed with one another unless recommended by the manufacturer.
5. The site superintendent will inspect daily to ensure proper use and disposal of materials on the site.
6. Whenever possible, all of a product will be used up before disposing of the container.
7. Follow manufacturer's recommended practices for use and disposal.



Contractor Certification Statement

This certification statement is a part of the Storm Water Pollution Prevention Plan for the project described below, in accordance with NPDES Permit No. ILR40, issued by the Illinois Environmental Protection Agency on _____, 2003.

Project Information:

| | | | |
|---------|------------------------------------|-------------|---|
| Route | <u>I-90/94 Dan Ryan Expressway</u> | Marked | <u>Dan Ryan Expressway I-57 at Illinois Route 1 (Halsted St) & I-90 at MLK to 31st Street</u> |
| Section | <u>See individual contract</u> | Project No. | <u>Various Contract Numbers – Refer to Attachment</u> |
| County | <u>Cook</u> | | |

I certify under penalty of law that I understand the terms of the general National Pollutant Discharge Elimination System (NPDES) permit (ILR 40) that authorizes the storm water discharges associated with industrial activity from the construction site identified as part of this certification.

Signature

Title

Name of Firm

Street Address

City

State

Zip Code

Telephone Number

Date

Storm Water Pollution Prevention Plan – Attachment

Project Limits: Dan Ryan Expressway I-57 at Illinois Route 1 (Halsted St) & I-90 at MLK to 31st Street

Attachment: Contract Numbers and Description. Note that the contract numbers are listed in numerical order.

| IDOT Contract No. | Description |
|-------------------|---|
| 62300 | Reconstruct NB Express Lanes from 31st Street to 71st Street |
| 62301 | Reconstruct NB Local Lanes from 31st St. to Wentworth Ave. and Misc. Ramps |
| 62302 | Reconstruct SB Express Lanes from 31st Street to 71st Street |
| 62303 | Reconstruct SB Local Lanes from 31st St. to Wentworth Ave. and Misc. Ramps |
| 62304 | Reconstruct NB Inside Lanes (1-3, shoulder and barrier wall) from 71st Street to I-57 Interchange |
| 62305 | Reconstruct SB Inside Lanes (1-3, shoulder and barrier wall) from 71st Street to I-57 Interchange |
| 62573 | Shoulder Rehabilitation from 47th St. to 71st St. |
| 62584 | Reconstruct NB ramps between 31st and 39th Street and Shoulder Rehabilitation |
| 62585 | Reconstruct SB ramps between 31st and 39th Street and Shoulder Rehabilitation |
| 62586 | Reconstruct 57th St. Bridge, and Frontage Rds., Retaining Walls, and Ramps between 47th and 59th. Streets |
| 62587 | Wentworth Avenue Overpass Reconstruction and Wells Street Realignments |
| 62589 | Skyway Interchange Bridges and Local Lanes from Wentworth Avenue to 67th Street |
| 62590 | Reconstruct 67th St. Bridge and NB and SB C-D System between 67th and 71st St. |
| 62591 | Storm Sewer Jacking & Collector Sewers from 67th Street to 95th Street. |
| 62592 | Reconstruct NB Outside Lanes (4, 5, shoulder) from 71st to I-57 Interchange |
| 62593 | reconstruct SB Outside Lanes (4, 5, shoulder) from 71st to I-57 Interchange |
| 62594 | Reconstruct NB and SB C-D System and Ramps between 79th and 83rd Streets |
| 62691 | Reconstruct Watermain crossings under Dan Ryan from 32nd to 63rd |
| 62692 | Reconstruct Watermain Crossings Under the Dan Ryan from 75th St. to I-57 Interchange |
| 62693 | Frontage Rds., Retaining Walls, and Ramps between 59th. and 63rd. |
| 62694 | Reconstruct NB Retaining Walls & Ramps from 71st to I-57 Interchange, and 71st to 75th C-D System |
| 62695 | Reconstruct SB Retaining Walls & Ramps from 71st to I-57 Interchange, and 71st to 75th C-D System |
| TBA | Reconstruct NB I-57 Bridge over WB cross connection from I-94 & tunnel over SB I-94 |

**REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS**

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ATTACHMENTS

- A. Employment Preference for Appalachian Contracts
(included in Appalachian contracts only)

I. GENERAL

1. These contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

2. Except as otherwise provided for in each section, the contractor shall insert in each subcontract all of the stipulations contained in these Required Contract Provisions, and further require their inclusion in any lower tier subcontract or purchase order that may in turn be made. The Required Contract Provisions shall not be incorporated by reference in any case. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with these Required Contract Provisions.

3. A breach of any of the stipulations contained in these Required Contract Provisions shall be sufficient grounds for termination of the contract.

4. A breach of the following clauses of the Required Contract Provisions may also be grounds for debarment as provided in 29 CFR 5.12:

- Section I, paragraph 2;
- Section IV, paragraphs 1, 2, 3, 4 and 7;
- Section V, paragraphs 1 and 2a through 2g.

5. Disputes arising out of the labor standards provisions of Section IV (except paragraph 5) and Section V of these Required Contract Provisions shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the U.S. Department of Labor (DOL) as set forth in 29 CFR 5, 6 and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the DOL, or the contractor's employees or their representatives.

6. Selection of Labor: During the performance of this contract, the contractor shall not:

- a. Discriminate against labor from any other State, possession, or territory of the United States (except for employment preference for Appalachian contracts, when applicable, as specified in Attachment A), or
- b. Employ convict labor for any purpose within the limits of the project unless it is labor performed by convicts who are on parole, supervised release, or probation.

II. NONDISCRIMINATION

1. Equal Employment Opportunity: Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630 and 41 CFR 60 (and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The Equal Opportunity Construction Contract Specifications set forth under 41 CFR 60-4.3 and the provisions of the American Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the State highway agency (SHA) and the Federal Government in carrying out EEO obligations and in their review of his/her activities under the contract.

b. The contractor will accept as his operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, preapprenticeship, and/or on-the-job-training."

2. EEO Officer: The contractor will designate and make known to the SHA contracting officers an EEO Officer who will have the responsibility for an must be capable of effectively administering and promoting an active contractor program of EEO and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above

agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minority group employees.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minority groups in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employees referral sources likely to yield qualified minority group applicants. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish which such identified sources procedures whereby minority group applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, he is expected to observe the provisions of that agreement to the extent that the system permits the contractor's compliance with EEO contract provisions. (The DOL has held that where implementation of such agreements have the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Executive Order 11246, as amended.)

c. The contractor will encourage his present employees to refer minority group applicants for employment. Information and procedures with regard to referring minority group applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any

evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with his obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of his avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minority group and women employees, and applicants for employment.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision.

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of minority group and women employees and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use his/her best efforts to obtain the cooperation of such unions to increase opportunities for minority groups and women within the unions, and to effect referrals by such unions of minority and female employees. Actions by the contractor either directly or through a contractor's association acting as agent will include the procedures set forth below:

a. The contractor will use best efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minority group members and women for membership in the unions and increasing the skills of minority group employees and women so that they may qualify for higher paying employment.

b. The contractor will use best efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to

the SHA and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of minority and women referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or quailifiable minority group persons and women. (The DOL has held that it shall be no excuse that the union with which the contractor has a collective bargaining agreement providing for exclusive referral failed to refer minority employees.) In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the SHA.

8. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment.

a. The contractor shall notify all potential subcontractors and suppliers of his/her EEO obligations under this contract.

b. Disadvantaged business enterprises (DBE), as defined in 49 CFR 23, shall have equal opportunity to compete for and perform subcontracts which the contractor enters into pursuant to this contract. The contractor will use his best efforts to solicit bids from and to utilize DBE subcontractors or subcontractors with meaningful minority group and female representation among their employees. Contractors shall obtain lists of DBE construction firms from SHA personnel.

c. The contractor will use his best efforts to ensure subcontractor compliance with their EEO obligations.

9. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following completion of the contract work and shall be available at reasonable times and places for inspection by authorized representatives of the SHA and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women;

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minority and female employees; and

(4) The progress and efforts being made in securing the services of DBE subcontractors or subcontractors with meaningful minority and female representation among their employees.

b. The contractors will submit an annual report to the SHA each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form FHWA-1391. If on-the-job training is being required by special provision, the contractor will be required to collect and report training data.

III. NONSEGREGATED FACILITIES

(Applicable to all Federal-aid construction contracts and to all related subcontracts of \$10,000 or more.)

a. By submission of this bid, the execution of this contract or subcontract, or the consummation of this material supply agreement or purchase order, as appropriate, the bidder, Federal-aid construction contractor, subcontractor, material supplier, or vendor, as appropriate, certifies that the firm does not maintain or provide for its employees any segregated facilities at any of its establishments, and that the firm does not permit its employees to perform their services at any location, under its control, where segregated facilities are maintained. The firm agrees that a breach of this certification is a violation of the EEO provisions of this contract. The firm further certifies that no employee will be denied access to adequate facilities on the basis of sex or disability.

b. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, restrooms and washrooms, restaurants and other eating areas, timeclocks, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive, or are, in fact, segregated on the basis of race, color, religion, national origin, age or disability, because of habit, local custom, or otherwise. The only exception will be for the disabled when the demands for accessibility override (e.g. disabled parking).

c. The contractor agrees that it has obtained or will obtain identical certification from proposed subcontractors or material suppliers prior to award of subcontracts or consummation of material supply agreements of \$10,000 or more and that it will retain such certifications in its files.

IV. PAYMENT OF PREDETERMINED MINIMUM WAGE

(Applicable to all Federal-aid construction contracts exceeding \$2,000 and to all related subcontracts, except for projects located on roadways classified as local roads or rural minor collectors, which are exempt.)

1. General:

a. All mechanics and laborers employed or working upon the site of the work will be paid unconditionally and not less often than once a week and without subsequent deduction or rebate on any account [except such payroll deductions as are permitted by regulations (29 CFR 3) issued by the Secretary of Labor under the Copeland Act (40 U.S.C. 276c)] the full amounts of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment. The payment shall be computed at wage rates not less than those contained in the wage determination of the Secretary of Labor (hereinafter "the wage determination") which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the

contractor or its subcontractors and such laborers and mechanics. The wage determination (including any additional classifications and wage rates conformed under paragraph 2 of this Section IV and the DOL poster (WH-1321) or Form FHWA-1495) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers. For the purpose of this Section, contributions made or costs reasonably anticipated for bona fide fringe benefits under Section 1(b)(2) of the Davis-Bacon Act (40 U.S.C. 276a) on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of Section IV, paragraph 3b, hereof. Also, for the purpose of this Section, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs, which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in paragraphs 4 and 5 of this Section IV.

b. Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein, provided, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed.

c. All rulings and interpretations of the Davis-Bacon Act and related acts contained in 29 CFR 1, 3, and 5 are herein incorporated by reference in this contract.

2. Classification:

a. The SHA contracting officer shall require that any class of laborers or mechanics employed under the contract, which is not listed in the wage determination, shall be classified in conformance with the wage determination.

b. The contracting officer shall approve an additional classification, wage rate and fringe benefits only when the following criteria have been met:

(1) the work to be performed by the additional classification requested is not performed by a classification in the wage determination;

(2) the additional classification is utilized in the area by the construction industry;

(3) the proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination; and

(4) with respect to helpers, when such a classification prevails in the area in which the work is performed.

c. If the contractor or subcontractors, as appropriate, the laborers and mechanics (if known) to be employed in the additional classification or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the DOL, Administrator of the Wage and Hour Division, Employment Standards Administration, Washington, D.C. 20210. The Wage and Hour Administrator, or an authorized representative, will approve, modify, or

disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

d. In the event the contractor or subcontractors, as appropriate, the laborers or mechanics to be employed in the additional classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the question, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. Said Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advised the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

e. The wage rate (including fringe benefits where appropriate) determined pursuant to paragraph 2c or 2d of this Section IV shall be paid to all workers performing work in the additional classification from the first day on which work is performed in the classification.

3. Payment of Fringe Benefits:

a. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor or subcontractors, as appropriate, shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly case equivalent thereof.

b. If the contractor or subcontractor, as appropriate, does not make payments to a trustee or other third person, he/she may consider as a part of the wages of any laborer or mechanic the amount of any cost reasonably anticipated in providing bona fide fringe benefits under a plan or program, provided that the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

4. Apprentices and Trainees (Programs of the U.S. DOL) and Helpers:

a. Apprentices:

(1) Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the DOL, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State apprenticeship agency recognized by the Bureau, or if a person is employed in his/her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State apprenticeship agency (where appropriate) to be eligible for probationary employment as an apprentice.

(2) The allowable ratio of apprentices to journeyman-level employees on the job site in any craft classification shall not

listed on the wage determination unless the Administrator of the

be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any employee listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate listed in the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor or subcontractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman-level hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

(3) Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeyman-level hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator for the Wage and Hour Division determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

(4) In the event the Bureau of Apprenticeship and Training, or a State apprenticeship agency recognized by the Bureau, withdraws approval of an apprenticeship program, the contractor or subcontractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the comparable work performed by regular employees until an acceptable program is approved.

b. Trainees:

(1) Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the DOL, Employment and Training Administration.

(2) The ratio of trainees to journeyman-level employees on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

(3) Every trainee must be paid at not less than the rate specified in the approved program for his/her level of progress, expressed as a percentage of the journeyman-level hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits

Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman-level wage rate on the wage determination which provides for less than full fringe benefits for apprentices, in which cases such trainees shall receive the same fringe benefits as apprentices.

(4) In the event the Employment and Training Administration withdraws approval of a training program, the contractor or subcontractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Helpers:

Helpers will be permitted to work on a project if the helper classification is specified and defined on the applicable wage determination or is approved pursuant to the conformance procedure set forth in Section IV. 2. Any worker listed on a payroll at a helper wage rate, who is not a helper under a approved definition, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed.

5. Apprentices and Trainees (Programs of the U.S. DOT):

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

6. Withholding:

The SHA shall upon its own action or upon written request of an authorized representative of the DOL withhold, or cause to be withheld, from the contractor or subcontractor under this contract or any other Federal contract with the same prime contractor or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements which is held by the same prime contractor, as much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainee's and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the SHA contracting officer may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

7. Overtime Requirements:

No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers, mechanics, watchmen, or guards (including apprentices, trainees, and helpers described in paragraphs 4 and 5 above) shall require or permit any laborer, mechanic, watchman, or guard in any workweek in which he/she is employed on such work, to work in excess of 40 hours in such workweek unless such laborer, mechanic, watchman, or guard receives compensation at a rate not less than one-and-one-half times his/her basic rate of pay for all hours worked in excess of 40 hours in such workweek.

8. Violation:

Liability for Unpaid Wages; Liquidated Damages: In the event of any violation of the clause set forth in paragraph 7 above, the contractor and any subcontractor responsible thereof shall be liable to the affected employee for his/her unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory) for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer, mechanic, watchman, or guard employed in violation of the clause set forth in paragraph 7, in the sum of \$10 for each calendar day on which such employee was required or permitted to work in excess of the standard work week of 40 hours without payment of the overtime wages required by the clause set forth in paragraph 7.

9. Withholding for Unpaid Wages and Liquidated Damages:

The SHA shall, upon its own action or upon written request of any authorized representative of the DOL withhold, or cause to be withheld, from any monies payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph 8 above.

V. STATEMENTS AND PAYROLLS

(Applicable to all Federal-aid construction contracts exceeding \$2,000 and to all related subcontracts, except for projects located on roadways classified as local roads or rural collectors, which are exempt.)

1. Compliance with Copeland Regulations (29 CFR 3):

The contractor shall comply with the Copeland Regulations of the Secretary of Labor which are herein incorporated by reference.

2. Payrolls and Payroll Records:

a. Payrolls and basic records relating thereto shall be maintained by the contractor and each subcontractor during the course of the work and preserved for a period of 3 years from the date of completion of the contract for all laborers, mechanics, apprentices, trainees, watchmen, helpers, and guards working at the site of the work.

b. The payroll records shall contain the name, social security number, and address of each such employee; his or her correct classification; hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalent thereof the types described in Section 1(b)(2)(B) of the Davis Bacon Act); daily and weekly number of hours worked; deductions made; and actual wages paid. In addition, for Appalachian contracts, the payroll records shall contain a notation indicating whether the employee does, or does not, normally reside in the labor area as defined in Attachment A, paragraph 1. Whenever the Secretary of Labor, pursuant to Section IV, paragraph 3b, has found that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan

or program described in Section 1(b)(2)(B) of the Davis Bacon Act, the contractor and each subcontractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, that the plan or program has been communicated in writing to the laborers or mechanics affected, and show the cost anticipated or the actual cost incurred in providing benefits. Contractors or subcontractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprentices and trainees, and ratios and wage rates prescribed in the applicable programs.

c. Each contractor and subcontractor shall furnish, each week in which any contract work is performed, to the SHA resident engineer a payroll of wages paid each of its employees (including apprentices trainees, and helpers, described in Section IV, paragraphs 4 and 5, and watchmen and guards engaged on work during the preceding weekly payroll period).

The payroll submitted shall set out accurately and completely all of the information required to be maintained under paragraph 2b of this Section V.

This information may be submitted in any form desired. Optional Form WH-347 is available for this purpose and may be purchased from the Superintendent of Documents (Federal stock number 029-005-0014-1), U.S. Government Printing Office, Washington, D.C. 20402. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors.

d. Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the Contractor or subcontractor or his/her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) that the payroll for the payroll period contains the information required to be maintained under paragraph 2b of this Section V and that such information is correct and complete;

(2) that such laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in the Regulations, 29 CFR 3;

(3) that each laborer or mechanic has been paid not less than the applicable wage rate and fringe benefits or cash equivalent for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

e. The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 2d of this Section V.

f. The falsification of any of the above certifications may subject the contractor to civil or criminal prosecution under 18 U/S. C. 1001 and 31 U.S.C. 231.

g. The contractor or subcontractor shall make the records required under paragraph 2b of this Section V available for

inspection, copying, or transcription by authorized representatives of the SHA, the FHWA, or the DOL, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the SHA, the FHWA, the DOL, or all may, after written notice to the contractor, sponsor, applicant, or owner, take such actions as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

VI. RECORD OF MATERIALS, SUPPLIES, AND LABOR

1. On all federal-aid contracts on the national highway system, except those which provide solely for the installation of protective devices at railroad grade crossings, those which are constructed on a force account or direct labor basis, highway beautification contracts, and contracts for which the total final construction cost for roadway and bridge is less than \$1,000,000 (23 CFR 635) the contractor shall:

a. Become familiar with the list of specific materials and supplies contained in Form FHWA-47, "Statement of Materials and Labor Used by Contractor of Highway Construction Involving Federal Funds," prior to the commencement of work under this contract.

b. Maintain a record of the total cost of all materials and supplies purchased for and incorporated in the work, and also of the quantities of those specific materials and supplies listed on Form FHWA-47, and in the units shown on Form FHWA-47.

c. Furnish, upon the completion of the contract, to the SHA resident engineer on Form FHWA-47 together with the data required in paragraph 1b relative to materials and supplies, a final labor summary of all contract work indicating the total hours worked and the total amount earned.

2. At the prime contractor's option, either a single report covering all contract work or separate reports for the contractor and for each subcontract shall be submitted.

VII. SUBLETTING OR ASSIGNING THE CONTRACT

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the State. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635).

a. "Its own organization" shall be construed to include only workers employed and paid directly by the prime contractor and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor, assignee, or agent of the prime contractor.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid on the contract as a

whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph 1 of Section VII is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the SHA contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the SHA contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract.

Written consent will be given only after the SHA has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

VIII. SAFETY: ACCIDENT PREVENTION

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the SHA contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 333).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 333).

IX. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification,

distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, the following notice shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

NOTICE TO ALL PERSONNEL ENGAGED ON FEDERAL-AID HIGHWAY PROJECTS

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined not more than \$10,000 or imprisoned not more than 5 years or both."

X. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

(Applicable to all Federal-aid construction contracts and to all related subcontracts of \$100,000 or more).

By submission of this bid or the execution of this contract, or subcontract, as appropriate, the bidder, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any facility that is or will be utilized in the performance of this contract, unless such contract is exempt under the Clean Air Act, as amended (42 U.S.C. 1857 et seq., as amended by Pub.L. 91-604), and under the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et seq., as amended by Pub.L. 92-500), Executive Order 11738, and regulations in implementation thereof (40 CFR 15) is not listed, on the date of contract award, on the U.S. Environmental Protection Agency (EPA) List of Violating Facilities pursuant to 40 CFR 15.20.

2. That the firm agrees to comply and remain in compliance with all the requirements of Section 114 of the Clean Air Act and Section 308 of the Federal Water Pollution Control Act and all regulations and guidelines listed thereunder.

3. That the firm shall promptly notify the SHA of the receipt of

any communication from the Director, Office of Federal Activities, EPA indicating that a facility that is or will be utilized for the contract is under consideration to be listed on the EPA List of Violating Facilities.

4. That the firm agrees to include or cause to be included the requirements of paragraph 1 through 4 of this Section X in every nonexempt subcontract, and further agrees to take such action as the government may direct as a means of enforcing such requirements.

XI. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

1. Instructions for Certification - Primary Covered Transactions:

(Applicable to all Federal-aid contracts - 49 CFR 29)

a. By signing and submitting this proposal, the prospective primary participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective primary participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the department or agency determined to enter into this transaction. If it is later determined that the prospective primary participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause of default.

d. The prospective primary participant shall provide immediate written notice to the department or agency to whom this proposal is submitted if any time the prospective primary participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the department or agency to which this proposal is submitted for assistance in obtaining a copy of those regulations.

f. The prospective primary participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

g. The prospective primary participant further agrees by submitting this proposal that it will include the clause titled

"Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," provided by the department or agency entering into this covered transaction, without modification in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the nonprocurement portion of the "Lists of Parties Excluded from Federal Procurement or Nonprocurement Programs" (Nonprocurement List) which is compiled by the General Services Administration.

i. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph f of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Primary Covered Transactions

1. The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:

- a. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
- b. Have not within a 3-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
- c. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph 1b of this certification; and
- d. Have not within a 3-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

2. Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

2. Instructions for Certification - Lower Tier Covered Transactions:

(Applicable to all subcontracts, purchase orders and other lower tier transactions of \$25,000 or more - 49 CFR 29)

- a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.
- b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.
- c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.
- d. The terms "covered transaction," "debarred," "suspended," "ineligible," "primary covered transaction," "participant," "person," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations.
- e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.
- f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.
- g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the Nonprocurement List.
- h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealing.
- i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily

excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

Certification Regarding Debarment, Suspension, Ineligibility And Voluntary Exclusion-Lower Tier Covered Transactions:

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

XII. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

(Applicable to all Federal-aid construction contracts and to all related subcontracts which exceed \$100,000 - 49 CFR 20)

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

3. The prospective participant also agrees by submitting his or her bid or proposal that he or she shall require that the language of this certification be included in all lower tier subcontracts, which exceed \$100,000 and that all such recipients shall certify and disclose accordingly.

MINIMUM WAGES FOR FEDERAL AND FEDERALLY ASSISTED CONSTRUCTION CONTRACTS

This project is funded, in part, with Federal-aid funds and, as such, is subject to the provisions of the Davis-Bacon Act of March 3, 1931, as amended (46 Sta. 1494, as amended, 40 U.S.C. 276a) and of other Federal statutes referred to in a 29 CFR Part 1, Appendix A, as well as such additional statutes as may from time to time be enacted containing provisions for the payment of wages determined to be prevailing by the Secretary of Labor in accordance with the Davis-Bacon Act and pursuant to the provisions of 29 CFR Part 1. The prevailing rates and fringe benefits shown in the General Wage Determination Decisions issued by the U.S. Department of Labor shall, in accordance with the provisions of the foregoing statutes, constitute the minimum wages payable on Federal and federally assisted construction projects to laborers and mechanics of the specified classes engaged on contract work of the character and in the localities described therein.

General Wage Determination Decisions, modifications and supersedes decisions thereto are to be used in accordance with the provisions of 29 CFR Parts 1 and 5. Accordingly, the applicable decision, together with any modifications issued, must be made a part of every contract for performance of the described work within the geographic area indicated as required by an applicable DBRA Federal prevailing wage law and 29 CFR Part 5. The wage rates and fringe benefits contained in the General Wage Determination Decision

NOTICE

The most current **General Wage Determination Decisions** (wage rates) are available on the IDOT web site. They are located on the Letting and Bidding page at <http://www.dot.il.gov/desenv/delett.html>.

In addition, ten (10) days prior to the letting, the applicable Federal wage rates will be e-mailed to subscribers. It is recommended that all contractors subscribe to the Federal Wage Rates List or the Contractor's Packet through IDOT's subscription service.

PLEASE NOTE: if you have already subscribed to the Contractor's Packet you will automatically receive the Federal Wage Rates.

The instructions for subscribing are at <http://www.dot.il.gov/desenv/subsc.html>.

If you have any questions concerning the wage rates, please contact IDOT's Chief Contract Official at 217-782-7806.