



**Illinois Department  
of Transportation**

**Local Public Agency  
Formal Contract**

PROPOSAL SUBMITTED BY		
<b>R.A. CULLINAN &amp; SON</b>		
Contractor's Name		
166		
Street	P.O. Box	
TREMONT	IL	61568
City	State	Zip Code

**STATE OF ILLINOIS**

COUNTY Peoria

City of Peoria

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

FOR THE IMPROVEMENT OF

STREET NAME OR ROUTE FORREST HILL AVENUE (FAU 6653)

SECTION NO. 12-00362-00-PV

TYPES OF FUNDS MFT

SPECIFICATIONS (required)

PLANS (required)

CONTRACT BOND (when required)

**For Municipal Projects**

Submitted/Approved/Passed

Mayor  President of Board of Trustees  Municipal Official

Date

7/15/14

**Department of Transportation**

Concurrence in approval of award

**AGREEMENT  
OF UNDERSTANDING**

Date

**For County and Road District Projects**

Submitted/Approved

Highway Commissioner

Date

Submitted/Approved

County Engineer/Superintendent of Highways

Date

County	Peoria
Local Public Agency	City of Peoria
Section Number	12-00362-00-PV
Route	Forrest Hill

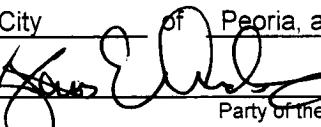
1. THIS AGREEMENT, made and concluded the \_\_\_\_\_ day of July, 2014 \_\_\_\_\_, Month and Year, between the City of Peoria \_\_\_\_\_ of Peoria, Illinois \_\_\_\_\_, acting by and through its City Manager \_\_\_\_\_ known as the party of the first part, and RA Cullinan & Son, a Division of UCM Inc \_\_\_\_\_ his/their executors, administrators, successors or assigns, known as the party of the second part.
2. Witnesseth: That for and in consideration of the payments and agreements mentioned in the Proposal hereto attached, to be made and performed by the party of the first part, and according to the terms expressed in the Bond referring to these presents, the party of the second part agrees with said party of the first part at his/their own proper cost and expense to do all the work, furnish all materials and all labor necessary to complete the work in accordance with the plans and specifications hereinafter described, and in full compliance with all of the terms of this agreement and the requirements of the Engineer under it.
3. And it is also understood and agreed that the LPA Formal Contract Proposal, Special Provisions, Affidavit of Illinois Business Office, Apprenticeship or Training Program Certification, and Contract Bond hereto attached, and the Plans for Section 12-00362-00-PV \_\_\_\_\_, in the City of Peoria \_\_\_\_\_, approved by the Illinois Department of Transportation on June 18, 2014 \_\_\_\_\_, are essential documents of this contract and are a part hereof.

4. IN WITNESS WHEREOF, The said parties have executed these presents on the date above mentioned.

Attest:

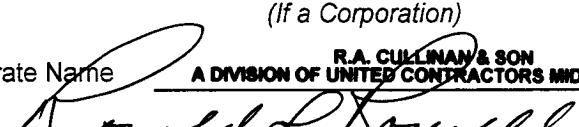
Beth Ball

Clerk

The City of Peoria, an IL Municipal Corp  
By   
Party of the First Part

(Seal)

Donald B. Scott  
Peoria Corp. Counsel

Corporate Name R.A. CULLINAN & SON  
A DIVISION OF UNITED CONTRACTORS MIDWEST, INC  
By   
Vice President  
Party of the Second Part

Attest:

John

Secretary

Asst

(If a Co-Partnership)

Partners doing Business under the firm name of \_\_\_\_\_

Party of the Second Part

(If an individual)

Party of the Second Part



**Illinois Department  
of Transportation**

Bond # 106130123

**Contract Bond**

Route	<u>FAU 6653 For Hill</u>
County	<u>Peoria</u>
Local Agency	<u>City of Peoria</u>
Section	<u>12-00362-00-PV</u>

We, RA Cullinan & Son, a Division of UCM, Inc.

a/an)  Individual  Co-partnership  Corporation organized under the laws of the State of Delaware

as PRINCIPAL, and Travelers Casualty & Surety Company of America

as SURETY,

are held and firmly bound unto the above Local Agency (hereafter referred to as "LA") in the penal sum of  
TWO MILLION FOUR HUNDRED THIRTY ONE THOUSAND FOUR HUNDRED SEVENTY SEVEN AND 76/100

Dollars ( \$2,431,477.76 ), lawful money of the

United States, well and truly to be paid unto said LA, for the payment of which we bind ourselves, our heirs, executors, administrators, successors, jointly to pay to the LA this sum under the conditions of this instrument.

WHEREAS THE CONDITION OF THE FOREGOING OBLIGATION IS SUCH that, the said Principal has entered into a written contract with the LA acting through its awarding authority for the construction of work on the above section, which contract is hereby referred to and made a part hereof, as if written herein at length, and whereby the said Principal has promised and agreed to perform said work in accordance with the terms of said contract, and has promised to pay all sums of money due for any labor, materials, apparatus, fixtures or machinery furnished to such Principal for the purpose of performing such work and has further agreed to pay all direct and indirect damages to any person, firm, company or corporation suffered or sustained on account of the performance of such work during the time thereof and until such work is completed and accepted; and has further agreed that this bond shall inure to the benefit of any person, firm, company or corporation to whom any money may be due from the Principal, subcontractor or otherwise for any such labor, materials, apparatus, fixtures or machinery so furnished and that suit may be maintained on such bond by any such person, firm, company or corporation for the recovery of any such money.

NOW THEREFORE, if the said Principal shall well and truly perform said work in accordance with the terms of said contract, and shall pay all sums of money due or to become due for any labor, materials, apparatus, fixtures or machinery furnished to him for the purpose of constructing such work, and shall commence and complete the work within the time prescribed in said contract, and shall pay and discharge all damages, direct and indirect, that may be suffered or sustained on account of such work during the time of the performance thereof and until the said work shall have been accepted, and shall hold the LA and its awarding authority harmless on account of any such damages and shall in all respects fully and faithfully comply with all the provisions, conditions and requirements of said contract, then this obligation to be void; otherwise to remain in full force and effect.

IN TESTIMONY WHEREOF, the said PRINCIPAL and the said SURETY have caused this instrument to be signed by their respective officers this 16th day of July A.D. 2014

**PRINCIPAL**

R.A. Cullinan & Son, A Division of UCM, Inc.

(Company Name)

(Company Name)

By: Ronald L. Rowell  
Ronald L. Rowell (Signature & Title) Vice President

By: \_\_\_\_\_  
(Signature & Title)

Attest: Jeff Sinn (Signature & Title) Asst. Secretary  
(If PRINCIPAL is a joint venture of two or more contractors, the company names and authorized signature of each contractor must be affixed.)

Attest: \_\_\_\_\_  
(Signature & Title)

STATE OF ILLINOIS.

COUNTY OF Tazewell

I, Amy E. Ries, a Notary Public in and for said county, do hereby certify that

Ronald L. Rowell and Jeff Sinn

(Insert names of individuals signing on behalf of PRINCIPAL)

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

Given under my hand and notarial seal this 16th day of July A.D. 2014

My commission expires 10-28-2017 NOTARY PUBLIC - STATE OF ILLINOIS AMY E. RIES Notary Public MY COMMISSION EXPIRES 10-28-2017 (SEAL)

**SURETY**

By: Afton Booth (Signature of Attorney-in-Fact)

Travelers Casualty & Surety Company of America  
(Name of Surety)

STATE OF ILLINOIS.

COUNTY OF Tazewell

I, Amy E. Ries, a Notary Public in and for said county, do hereby certify that

Afton Booth

(Insert names of individuals signing on behalf of SURETY)

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

Given under my hand and notarial seal this 16th day of July A.D. 2014

My commission expires 10-28-2017 OFFICIAL SEAL AMY E. RIES Notary Public NOTARY PUBLIC - STATE OF ILLINOIS MY COMMISSION EXPIRES 10-28-2017 (SEAL)

Approved this \_\_\_\_\_ day of \_\_\_\_\_, A.D. \_\_\_\_\_

Attest:

Beth Bain

City

Clerk

(Awarding Authority)

(Chairman/Mayor/President)



## POWER OF ATTORNEY

Farmington Casualty Company  
 Fidelity and Guaranty Insurance Company  
 Fidelity and Guaranty Insurance Underwriters, Inc.  
 St. Paul Fire and Marine Insurance Company  
 St. Paul Guardian Insurance Company

St. Paul Mercury Insurance Company  
 Travelers Casualty and Surety Company  
 Travelers Casualty and Surety Company of America  
 United States Fidelity and Guaranty Company

Attorney-In Fact No. 226368

Certificate No. 005978012

**KNOW ALL MEN BY THESE PRESENTS:** That Farmington Casualty Company, St. Paul Fire and Marine Insurance Company, St. Paul Guardian Insurance Company, St. Paul Mercury Insurance Company, Travelers Casualty and Surety Company, Travelers Casualty and Surety Company of America, and United States Fidelity and Guaranty Company are corporations duly organized under the laws of the State of Connecticut, that Fidelity and Guaranty Insurance Company is a corporation duly organized under the laws of the State of Iowa, and that Fidelity and Guaranty Insurance Underwriters, Inc., is a corporation duly organized under the laws of the State of Wisconsin (herein collectively called the "Companies"), and that the Companies do hereby make, constitute and appoint

Afton Booth, Patrick J. Taphorn, and Kathy Betteridge

of the City of Pekin, State of Illinois, their true and lawful Attorney(s)-in-Fact, each in their separate capacity if more than one is named above, to sign, execute, seal and acknowledge any and all bonds, recognizances, conditional undertakings and other writings obligatory in the nature thereof on behalf of the Companies in their business of guaranteeing the fidelity of persons, guaranteeing the performance of contracts and executing or guaranteeing bonds and undertakings required or permitted in any actions or proceedings allowed by law.

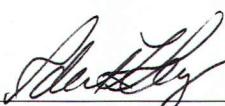
IN WITNESS WHEREOF, the Companies have caused this instrument to be signed and their corporate seals to be hereto affixed, this 10th day of July 2014.

Farmington Casualty Company  
 Fidelity and Guaranty Insurance Company  
 Fidelity and Guaranty Insurance Underwriters, Inc.  
 St. Paul Fire and Marine Insurance Company  
 St. Paul Guardian Insurance Company

St. Paul Mercury Insurance Company  
 Travelers Casualty and Surety Company  
 Travelers Casualty and Surety Company of America  
 United States Fidelity and Guaranty Company



State of Connecticut  
 City of Hartford ss.

By:   
 Robert L. Raney, Senior Vice President

On this the 10th day of July, 2014, before me personally appeared Robert L. Raney, who acknowledged himself to be the Senior Vice President of Farmington Casualty Company, Fidelity and Guaranty Insurance Company, Fidelity and Guaranty Insurance Underwriters, Inc., St. Paul Fire and Marine Insurance Company, St. Paul Guardian Insurance Company, St. Paul Mercury Insurance Company, Travelers Casualty and Surety Company, Travelers Casualty and Surety Company of America, and United States Fidelity and Guaranty Company, and that he, as such, being authorized so to do, executed the foregoing instrument for the purposes therein contained by signing on behalf of the corporations by himself as a duly authorized officer.

In Witness Whereof, I hereunto set my hand and official seal.  
 My Commission expires the 30th day of June, 2016.



  
 Marie C. Tetreault, Notary Public

This Power of Attorney is granted under and by the authority of the following resolutions adopted by the Boards of Directors of Farmington Casualty Company, Fidelity and Guaranty Insurance Company, Fidelity and Guaranty Insurance Underwriters, Inc., St. Paul Fire and Marine Insurance Company, St. Paul Guardian Insurance Company, St. Paul Mercury Insurance Company, Travelers Casualty and Surety Company, Travelers Casualty and Surety Company of America, and United States Fidelity and Guaranty Company, which resolutions are now in full force and effect, reading as follows:

**RESOLVED**, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President, any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary may appoint Attorneys-in-Fact and Agents to act for and on behalf of the Company and may give such appointee such authority as his or her certificate of authority may prescribe to sign with the Company's name and seal with the Company's seal bonds, recognizances, contracts of indemnity, and other writings obligatory in the nature of a bond, recognizance, or conditional undertaking, and any of said officers or the Board of Directors at any time may remove any such appointee and revoke the power given him or her; and it is

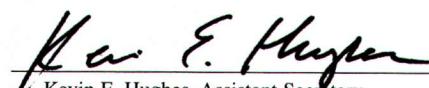
**FURTHER RESOLVED**, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President may delegate all or any part of the foregoing authority to one or more officers or employees of this Company, provided that each such delegation is in writing and a copy thereof is filed in the office of the Secretary; and it is

**FURTHER RESOLVED**, that any bond, recognizance, contract of indemnity, or writing obligatory in the nature of a bond, recognizance, or conditional undertaking shall be valid and binding upon the Company when (a) signed by the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary and duly attested and sealed with the Company's seal by a Secretary or Assistant Secretary; or (b) duly executed (under seal, if required) by one or more Attorneys-in-Fact and Agents pursuant to the power prescribed in his or her certificate or their certificates of authority or by one or more Company officers pursuant to a written delegation of authority; and it is

**FURTHER RESOLVED**, that the signature of each of the following officers: President, any Executive Vice President, any Senior Vice President, any Vice President, any Assistant Vice President, any Secretary, any Assistant Secretary, and the seal of the Company may be affixed by facsimile to any Power of Attorney or to any certificate relating thereto appointing Resident Vice Presidents, Resident Assistant Secretaries or Attorneys-in-Fact for purposes only of executing and attesting bonds and undertakings and other writings obligatory in the nature thereof, and any such Power of Attorney or certificate bearing such facsimile signature or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by such facsimile signature and facsimile seal shall be valid and binding on the Company in the future with respect to any bond or understanding to which it is attached.

I, Kevin E. Hughes, the undersigned, Assistant Secretary, of Farmington Casualty Company, Fidelity and Guaranty Insurance Company, Fidelity and Guaranty Insurance Underwriters, Inc., St. Paul Fire and Marine Insurance Company, St. Paul Guardian Insurance Company, St. Paul Mercury Insurance Company, Travelers Casualty and Surety Company, Travelers Casualty and Surety Company of America, and United States Fidelity and Guaranty Company do hereby certify that the above and foregoing is a true and correct copy of the Power of Attorney executed by said Companies, which is in full force and effect and has not been revoked.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seals of said Companies this 16<sup>th</sup> day of July, 2014.



Kevin E. Hughes, Assistant Secretary



To verify the authenticity of this Power of Attorney, call 1-800-421-3880 or contact us at [www.travelersbond.com](http://www.travelersbond.com). Please refer to the Attorney-In-Fact number, the above-named individuals and the details of the bond to which the power is attached.

RETURN WITH BID



Illinois Department  
of Transportation

Local Public Agency  
Formal Contract Proposal

PROPOSAL SUBMITTED BY <b>R.A. CULLINAN &amp; SON</b> <b>A DIVISION OF UNITED CONTRACTORS MIDWEST, INC.</b>		
Contractor's Name <b>P.O. BOX 166</b> <b>TREMONT, IL 61568</b>		
Street	P.O. Box	
City	State	Zip Code

STATE OF ILLINOIS

COUNTY OF Peoria

City of Peoria

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

FOR THE IMPROVEMENT OF

STREET NAME OR ROUTE NO. Forrest Hill Avenue (FAU 6653)

SECTION NO. 12-00362-00-PV

TYPES OF FUNDS Motor Fuel Tax

SPECIFICATIONS (required)

PLANS (required)

For Municipal Projects

Submitted/Approved/Passed

Mayor  President of Board of Trustees  Municipal Official

Date June 17, 2014

Department of Transportation

Released for bid based on limited review

**AGREEMENT  
OF UNDERSTANDING**

Date

For County and Road District Projects

Submitted/Approved

Highway Commissioner

Date

Submitted/Approved

County Engineer/Superintendent of Highways

Date

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

RETURN WITH BID

NOTICE TO BIDDERS

County	Peoria
Local Public Agency	City of Peoria
Section Number	12-00362-00-PV
Route	FAU 6653

Sealed proposals for the improvement described below will be received at the office of Peoria Public Works,

3505 N. Dries Lane, Peoria, IL 61604 until 10:00 AM on July 8, 2014

Address

Time

Date

Sealed proposals will be opened and read publicly at the office of Peoria Public Works,

3505 N. Dries Lane, Peoria, IL 61604 at 10:15 AM on July 8, 2014

Address

Time

Date

DESCRIPTION OF WORK

Name Forrest Hill Avenue Length: 2630.00 feet ( 0.50 miles)

Location Sheridan Raod to Knoxville Avenue

Proposed Improvement New sidewalk and curb and gutter along both sides, driveway pavement within the street right of way, storm sewer pipe and structures, street lights along both sides, 8" water main, and 4" HMA pavement

1. Plans and proposal forms will be available in the office of Peoria's Department of Public Works

3505 N. Dries Lane, Peoria, IL 61604

Address

2.  Prequalification

If checked, the 2 low bidders must file within 24 hours after the letting an "Affidavit of Availability" (Form BC 57), in duplicate, showing all uncompleted contracts awarded to them and all low bids pending award for Federal, State, County, Municipal and private work. One original shall be filed with the Awarding Authority and one original with the IDOT District Office.

3. The Awarding Authority reserves the right to waive technicalities and to reject any or all proposals as provided in BLRS Special Provision for Bidding Requirements and Conditions for Contract Proposals.
4. The following BLR Forms shall be returned by the bidder to the Awarding Authority:
  - a. BLR 12200: Local Public Agency Formal Contract Proposal
  - b. BLR 12200a Schedule of Prices
  - c. BLR 12230: Proposal Bid Bond (if applicable)
  - d. BLR 12325: Apprenticeship or Training Program Certification (do not use for federally funded projects)
  - e. BLR 12326: Affidavit of Illinois Business Office
5. The quantities appearing in the bid schedule are approximate and are prepared for the comparison of bids. Payment to the Contractor will be made only for the actual quantities of work performed and accepted or materials furnished according to the contract. The scheduled quantities of work to be done and materials to be furnished may be increased, decreased or omitted as hereinafter provided.
6. Submission of a bid shall be conclusive assurance and warranty the bidder has examined the plans and understands all requirements for the performance of work. The bidder will be responsible for all errors in the proposal resulting from failure or neglect to conduct an in depth examination. The Awarding Authority will, in no case be responsible for any costs, expenses, losses or changes in anticipated profits resulting from such failure or neglect of the bidder.
7. The bidder shall take no advantage of any error or omission in the proposal and advertised contract.
8. If a special envelope is supplied by the Awarding Authority, each proposal should be submitted in that envelope furnished by the Awarding Agency and the blank spaces on the envelope shall be filled in correctly to clearly indicate its contents. When an envelope other than the special one furnished by the Awarding Authority is used, it shall be marked to clearly indicate its contents. When sent by mail, the sealed proposal shall be addressed to the Awarding Authority at the address and in care of the official in whose office the bids are to be received. All proposals shall be filed prior to the time and at the place specified in the Notice to Bidders. Proposals received after the time specified will be returned to the bidder unopened.
9. Permission will be given to a bidder to withdraw a proposal if the bidder makes the request in writing or in person before the time for opening proposals.

## RETURN WITH BID

## PROPOSAL

County	Peoria
Local Public Agency	City of Peoria
Section Number	12-00362-00-PV
Route	FAU 6653

1. Proposal of R.A. CULLINAN & SON  
A DIVISION OF UNITED CONTRACTORS MIDWEST, INC

for the improvement of the above section by the construction of sidewalk, curb and gutter, and driveway aprons; storm sewer pipe, manholes, inlets, and catchbasins; street lights; 8" dia. watermain, fire hydrants, valves and fittings; PCC base course pavement in isolated locations and 4" HMA pavement throughout the project limits.

a total distance of 2630.00 feet, of which a distance of 2630.00 feet, ( 0.500 miles) are to be improved.

2. The plans for the proposed work are those prepared by Crawford, Murphy & Tilly, Inc. and approved by the Department of Transportation on \_\_\_\_\_
3. The specifications referred to herein are those prepared by the Department of Transportation and designated as "Standard Specifications for Road and Bridge Construction" and the "Supplemental Specifications and Recurring Special Provisions" thereto, adopted and in effect on the date of invitation for bids.
4. The undersigned agrees to accept, as part of the contract, the applicable Special Provisions indicated on the "Check Sheet for Recurring Special Provisions" contained in this proposal.
5. The undersigned agrees to complete the work within \_\_\_\_\_ working days or by November 14, 2014 unless additional time is granted in accordance with the specifications.
6. A proposal guaranty in the proper amount, as specified in BLRS Special Provision for Bidding Requirements and Conditions for Contract Proposals, will be required. Bid Bonds will be allowed as a proposal guaranty. Accompanying this proposal is either a bid bond if allowed, on Department form BLR 12230 or a proposal guaranty check, complying with the specifications, made payable to:

Patrick Nichting \_\_\_\_\_ Treasurer of City of Peoria  
The amount of the check is **Bid Bond** \_\_\_\_\_ ( \_\_\_\_\_ ).

7. In the event that one proposal guaranty check is intended to cover two or more proposals, the amount must be equal to the sum of the proposal guaranties, which would be required for each individual proposal. If the proposal guaranty check is placed in another proposal, it will be found in the proposal for: Section Number \_\_\_\_\_.
8. The successful bidder at the time of execution of the contract will be required to deposit a contract bond for the full amount of the award. When a contract bond is not required, the proposal guaranty check will be held in lieu thereof. If this proposal is accepted and the undersigned fails to execute a contract and contract bond as required, it is hereby agreed that the Bid Bond or check shall be forfeited to the Awarding Authority.
9. Each pay item should have a unit price and a total price. If no total price is shown or if there is a discrepancy between the product of the unit price multiplied by the quantity, the unit price shall govern. If a unit price is omitted, the total price will be divided by the quantity in order to establish a unit price.
10. A bid will be declared unacceptable if neither a unit price nor a total price is shown.
11. The undersigned submits herewith the schedule of prices on BLR 12200a covering the work to be performed under this contract.
12. The undersigned further agrees that if awarded the contract for the sections contained in the combinations on BLR 12200a, the work shall be in accordance with the requirements of each individual proposal for the multiple bid specified in the Schedule for Multiple Bids below.



a division of United Contractors Midwest, Inc.

121 West Park St. - P.O. Box 166  
Tremont, Illinois 61568

CONCRETE GRAVEL & BITUMINOUS PAVEMENTS  
CONCRETE AND STEEL BRIDGES AND CULVERTS  
PILE DRIVING - EXCAVATING - DRAINAGE DITCHES

OFFICE PHONE 925-2711  
Area Code 309 PEORIA 676-4343  
Area Code 309 PEKIN 346-7262  
FAX 309-925-7131

Quote To: City of Peoria

Job Name: Forest Hill Reconstruction  
Project Location: Peoria, IL  
Date of Plans: 06/07/14  
Bid Date: 06/10/2014  
FSA: 0708FORESTH  
Addendum: 1,2 & 3 Acknowledged,

Attn:  
Phone:  
Mobile:  
Fax:

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
10	EARTH EXCAVATION	1,204.00	CU Y	51.00	61,404.00
20	POROUS GRANULAR EMBANKMENT	1,255.00	CU Y	42.09	52,822.95
30	TRENCH BACKFILL	317.00	CU Y	68.03	21,565.51
40	POROUS GRANULAR BACKFILL	554.00	CU Y	36.17	20,038.18
50	TOPSOIL FURNISH AND PLACE, VARIABLE DEPTH	2,741.00	SQ Y	6.56	17,980.96
60	SODDING	1,025.00	SQ Y	8.66	8,876.50
70	SODDING, SALT TOLERANT	1,716.00	SQ Y	9.71	16,662.36
80	PERIMETER EROSION BARRIER	398.00	FOOT	4.86	1,934.28
90	INLET AND PIPE PROTECTION	40.00	EACH	355.89	14,235.60
100	FILTER FABRIC	220.00	SQ Y	2.81	618.20
110	SUBBASE GRANULAR MATERIAL, TYPE B	213.00	TON	37.14	7,910.82
120	PORTLAND CEMENT CONCRETE BASE COURSE 7"	822.00	SQ Y	56.22	46,212.84
130	PORTLAND CEMENT CONCRETE BASE COURSE WIDENING 6"	766.00	SQ Y	42.67	32,685.22
140	AGGREGATE FOR TEMPORARY ACCESS	385.00	TON	53.41	20,562.85
150	POLYMERIZED BITUMINOUS MATERIALS (PRIME COAT)	1,625.00	GALL	4.80	7,800.00
160	POLYMERIZED LEVELING BINDER (MACHINE METHOD), IL-4	178.00	TON	130.94	23,307.32
170	POLYMERIZED HOT-MIX ASPHALT BINDER COURSE, IL-12.5	1,555.00	TON	102.74	159,760.70
180	POLYMERIZED HOT-MIX ASPHALT SURFACE COURSE, MIX "E"	707.00	TON	110.73	78,286.11
190	INCIDENTAL HOT-MIX ASPHALT SURFACING	65.00	TON	193.34	12,567.10
200	HIGH-EARLY-STRENGTH PORTLAND CONCRETE CEMENT, 9"	7.00	SQ Y	175.18	1,226.26
210	PORTLAND CEMENT CONCRETE DRIVEWAY PAVEMENT, 6 INCH	1,063.00	SQ Y	70.73	75,185.99

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
220	PORLTAND CEMENT CONCRETE DRIVEWAY PAVEMENT, 8 INCH	315.00	SQ Y	75.53	23,791.95
230	PORLTAND CEMENT CONCRETE SIDEWALK, 4 INCH	22,592.00	SQ F	5.76	130,129.92
240	DETECTABLE WARNINGS	246.00	SQ F	40.30	9,913.80
250	PAVEMENT REMOVAL	3,096.00	SQ Y	17.79	55,077.84
260	DRIVEWAY PAVEMENT REMOVAL	1,126.00	SQ Y	11.76	13,241.76
270	SIDEWALK REMOVAL	24,487.00	SQ F	1.11	27,180.57
280	CLASS C PATCHES, TYPE II, 14 INCH	131.00	SQ Y	77.81	10,193.11
290	PAINTING STEEL RAILING	43.00	FOOT	16.21	697.03
300	PEDESTRIAN RAILING	198.00	FOOT	116.32	23,031.36
310	STORM SEWER REMOVAL 12"	27.00	FOOT	11.03	297.81
320	STORM SEWER REMOVAL 15"	16.00	FOOT	14.61	233.76
330	STORM SEWER REMOVAL 18"	140.00	FOOT	23.05	3,227.00
340	CONTROLLED LOW-STRENGTH MATERIAL	482.00	CU Y	68.87	33,195.34
350	PIPE UNDERDRAINS 8"	127.00	FOOT	24.16	3,068.32
360	PIPE UNDERDRAINS 12"	59.00	FOOT	34.02	2,007.18
370	CATCH BASINS, TYPE A, 4'-DIAMETER, TYPE 11V FRAME	4.00	EACH	2,008.93	8,035.72
380	CATCH BASINS, TYPE A, 5'-DIAMETER, TYPE 11 FRAME A	1.00	EACH	4,912.17	4,912.17
390	CATCH BASINS, TYPE B, TYPE 7 GRATE	1.00	EACH	9,675.75	9,675.75
400	MANHOLES, TYPE A, 4'-DIAMETER, TYPE 1 FRAME, OPEN	1.00	EACH	3,633.00	3,633.00
410	MANHOLES, TYPE A, 4'-DIAMETER, TYPE 1 FRAME, CLOSE	1.00	EACH	5,407.50	5,407.50
420	MANHOLES, TYPE A, 5'-DIAMETER, TYPE 1 FRAME, CLOSE	1.00	EACH	4,599.00	4,599.00
430	MANHOLES, TYPE A, 5'-DIAMETER, TYPE 8 GRATE	2.00	EACH	4,546.50	9,093.00
440	MANHOLES, TYPE A, 5'-DIAMETER, TYPE 11 FRAME AND G	3.00	EACH	5,179.92	15,539.76
450	INLETS, TYPE A, TYPE 11 FRAME AND GRATE	8.00	EACH	2,864.67	22,917.36
460	INLETS, TYPE A, TYPE 11V FRAME AND GRATE	2.00	EACH	1,914.43	3,828.86
470	INLETS, TYPE B, TYPE 8 GRATE	1.00	EACH	2,446.50	2,446.50
480	INLETS, TYPE B, TYPE 11 FRAME AND GRATE	5.00	EACH	3,116.68	15,583.40
490	INLETS, TYPE B, TYPE 11V FRAME AND GRATE	7.00	EACH	3,106.17	21,743.19
500	INLETS TO BE ADJUSTED	2.00	EACH	1,183.05	2,366.10
510	INLETS TO BE ADJUSTED WITH NEW TYPE 8 GRATE	1.00	EACH	666.75	666.75
520	REMOVING MANHOLES	1.00	EACH	2,845.50	2,845.50
530	REMOVING INLETS	9.00	EACH	2,835.00	25,515.00
540	COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.12	5,557.00	FOOT	27.71	153,984.47
550	COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.18	111.00	FOOT	67.12	7,450.32
560	SHORT TERM PAVEMENT MARKING	5,280.00	FOOT	0.68	3,590.40

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
570	THERMOPLASTIC PAVEMENT MARKING - LETTERS AND SYMBO	357.00	SQ F	5.25	1,874.25
580	THERMOPLASTIC PAVEMENT MARKING - LINE 4"	7,047.00	FOOT	0.79	5,567.13
590	THERMOPLASTIC PAVEMENT MARKING - LINE 6"	884.00	FOOT	1.19	1,051.96
600	THERMOPLASTIC PAVEMENT MARKING - LINE 12"	672.00	FOOT	2.36	1,585.92
610	THERMOPLASTIC PAVEMENT MARKING - LINE 24"	153.00	FOOT	4.73	723.69
620	ELECTRIC SERVICE INSTALLATION	1.00	EACH	2,051.70	2,051.70
630	UNDERGROUND CONDUIT, PVC, 2" DIA.	4,989.00	FOOT	11.50	57,373.50
640	GULFBOX JUNCTION, CAST IRON	2.00	EACH	814.50	1,629.00
650	GULFBOX JUNCTION REMOVAL	17.00	EACH	94.48	1,606.16
660	ELECTRIC CABLE IN CONDUIT, 600V (XLP-TYPE USE) 1/C	24,115.00	FOOT	1.12	27,008.80
670	LIGHTING CONTROLLER, BASE MOUNTED, 240VOLT, 100AMP	1.00	EACH	6,562.50	6,562.50
680	REMOVAL OF LIGHTING UNIT, NO SALVAGE	26.00	EACH	259.17	6,738.42
690	DETECTOR LOOP, TYPE I	242.00	FOOT	14.44	3,494.48
700	RELOCATE EXISTING PEDESTRIAN PUSH-BUTTON	3.00	EACH	176.44	529.32
710	REBUILD EXISTING HANDHOLE	4.00	EACH	1,496.25	5,985.00
720	EARTH EXCAVATION (SPECIAL)	554.00	CU Y	33.79	18,719.66
730	SURFACE REMOVAL, VARIABLE DEPTH (SPECIAL)	5,239.00	SQ Y	4.68	24,518.52
740	PARTIAL DEPTH PATCHING	34.00	TON	237.98	8,091.32
750	TRAFFIC CONTROL AND PROTECTION, (SPECIAL)	1.00	L SU	38,529.92	38,529.92
760	HANDRAIL REMOVAL	105.00	FOOT	4.01	421.05
770	CONSTRUCTION LAYOUT	1.00	L SU	37,119.65	37,119.65
780	STORM SEWER (WATER MAIN REQUIREMENTS) 12 INCH	887.00	FOOT	58.45	51,845.15
790	STORM SEWER (WATER MAIN REQUIREMENTS) 15 INCH	857.00	FOOT	76.57	65,620.49
800	STORM SEWER (WATER MAIN REQUIREMENTS) 18 INCH	233.00	FOOT	78.11	18,199.63
810	STORM SEWER (WATER MAIN REQUIREMENTS) 24 INCH	281.00	FOOT	111.28	31,269.68
820	SLOPE WALL, SPECIAL	76.00	SQ Y	113.12	8,597.12
830	PARTIAL DEPTH REMOVAL, VARIABLE DEPTH	75.00	SY	85.96	6,447.00
840	PIPE UNDERDRAINS 24"	95.00	FOOT	56.44	5,361.80
850	LED STREET LIGHT POLE AND LUMINAIRE (COMPLETE)	29.00	EACH	4,252.50	123,322.50
870	WATERMAIN, 8" DIAMETER, DUCTILE IRON, OPEN CUT	2,567.00	L.F.	88.67	227,615.89
880	WATERMAIN, 6" DIAMETER, DUCTILE IRON, OPEN CUT	211.00	L.F.	68.16	14,381.76

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
890	16 INCH PVC SDR 21 CASING FOR WATER/SEWER CROSSING	22.00	L.F.	108.60	2,389.20
900	16 INCH STEEL CASING PIPE FOR WATERMAIN (0.250 INC)	24.00	L.F.	141.21	3,389.04
910	GATE VALVE AND BOX, 8" DIAMETER	11.00	EACH	1,575.00	17,325.00
920	GATE VALVE AND BOX, 6" DIAMETER	6.00	EACH	1,218.00	7,308.00
930	TAPPING SLEEVE AND TAPPING GATE VALVE, 8" DIAMETER	1.00	EACH	7,029.75	7,029.75
940	TAPPING SLEEVE AND TAPPING GATE VALVE, 6" DIAMETER	2.00	EACH	3,853.50	7,707.00
950	DUCTILE IRON FITTINGS	1,220.00	LBS.	14.03	17,116.60
960	FIRE HYDRANT (3-WAY)	6.00	EACH	2,336.25	14,017.50
970	FIRE HYDRANT REMOVAL	6.00	EACH	446.25	2,677.50
980	SELECT GRANULAR BACKFILL	554.00	C.Y.	70.43	39,018.22
990	PAVEMENT REMOVAL FOR WATERMAIN	2,080.00	SY	16.82	34,985.60
1000	CONCRETE PAVEMENT PLACEMENT	2,080.00	SY	58.37	121,409.60
1010	WATERMAIN TESTING AND DISINFECTION	1.00	L.S.	12,497.53	12,497.53

**GRAND TOTAL** **\$2,431,477.76**

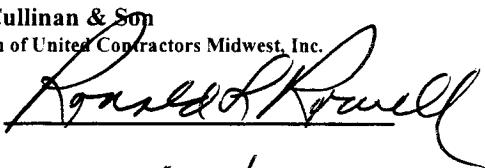
**NOTES:**

*Addendum  
1, 2 & 3 Ack.*

Thank you for the opportunity to bid on this project. We look forward to working with you.

R. A. Cullinan & Son  
a division of United Contractors Midwest, Inc.

Signed



Signed \_\_\_\_\_

Date

7/10/14

Date

\_\_\_\_\_

**SCHEDULE OF PRICES**

County Peoria  
 Local Public Agency City of Peoria  
 Section 12-00362-00-PV  
 Route FAU 6653

Addendum 1 6/25/2014 - Modified items are underlined

PAY ITEM	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
	Bidder's Proposal for making Entire Improvements				
20200100	EARTH EXCAVATION	CU YD	<u>1,204</u>		
20700220	POROUS GRANULAR EMBANKMENT	CU YD	1,255		
20800150	TRENCH BACKFILL	CU YD	317		
20900110	POROUS GRANULAR BACKFILL	CU YD	<u>554</u>		
21101600	TOPSOIL FURNISH AND PLACE, VARIABLE DEPTH	SQ YD	2,741		
25200100	SODDING	SQ YD	1,025		
25200110	SODDING, SALT TOLERANT	SQ YD	1,716		
28000400	PERIMETER EROSION BARRIER	FOOT	398		
28000500	INLET AND PIPE PROTECTION	EACH	40		
28200200	FILTER FABRIC	SQ YD	220		
<u>31101000</u>	<u>SUBBASE GRANULAR MATERIAL, TYPE B</u>	TON	<u>213</u>		
35300200	PORTLAND CEMENT CONCRETE BASE COURSE 7"	SQ YD	822		
35400100	PORTLAND CEMENT CONCRETE BASE COURSE WIDENING 6"	SQ YD	766		
40201000	AGGREGATE FOR TEMPORARY ACCESS	TON	<u>385</u>		
40600115	POLYMERIZED BITUMINOUS MATERIALS (PRIME COAT)	GALLON	1,625		
40600827	POLYMERIZED LEVELING BINDER (MACHINE METHOD), IL-4.75, N50	TON	<u>178</u>		
40603214	POLYMERIZED HOT-MIX ASPHALT BINDER COURSE, IL-12.5, N70	TON	1,555		
40603565	POLYMERIZED HOT-MIX ASPHALT SURFACE COURSE, MIX "E", N70	TON	707		
40800050	INCIDENTAL HOT-MIX ASPHALT SURFACING	TON	<u>55</u>		
42001000	HIGH-EARLY-STRENGTH PORTLAND CONCRETE CEMENT, 9"	SQ YD	7		
42300200	PORTLAND CEMENT CONCRETE DRIVEWAY PAVEMENT, 6 INCH	SQ YD	1,063		
42300400	PORTLAND CEMENT CONCRETE DRIVEWAY PAVEMENT, 8 INCH	SQ YD	315		
42400100	PORTLAND CEMENT CONCRETE SIDEWALK, 4 INCH	SQ FT	22,592		
42400800	DETECTABLE WARNINGS	SQ FT	246		
44000100	PAVEMENT REMOVAL	SQ YD	<u>3,096</u>		
44000200	DRIVEWAY PAVEMENT REMOVAL	SQ YD	1,126		
44000600	SIDEWALK REMOVAL	SQ FT	24,487		
44201403	CLASS C PATCHES, TYPE II, 14 INCH	SQ YD	131		
50600200	PAINTING STEEL RAILING	FOOT	43		
50900805	PEDESTRIAN RAILING	FOOT	198		
55100500	STORM SEWER REMOVAL 12"	FOOT	27		
55100700	STORM SEWER REMOVAL 15"	FOOT	16		
55100900	STORM SEWER REMOVAL 18"	FOOT	140		
59300100	CONTROLLED LOW-STRENGTH MATERIAL	CU YD	<u>482</u>		
60107800	PIPE UNDERDRAINS 8"	FOOT	127		
60108000	PIPE UNDERDRAINS 12"	FOOT	<u>59</u>		
60201110	CATCH BASINS, TYPE A, 4'-DIAMETER, TYPE 11V FRAME AND GRATE	EACH	4		

**SCHEDULE OF PRICES**

County Peoria  
 Local Public Agency City of Peoria  
 Section 12-00362-00-PV  
 Route FAU 6653

Addendum 1 6/25/2014 - Modified items are underlined

PAY ITEM	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
60204805	CATCH BASINS, TYPE A, 5'-DIAMETER, TYPE 11 FRAME AND GRATE	EACH	1		
60206600	CATCH BASINS, TYPE B, TYPE 7 GRATE	EACH	1		
60218399	MANHOLES, TYPE A, 4'-DIAMETER, TYPE 1 FRAME, OPEN LID	EACH	1		
60218400	MANHOLES, TYPE A, 4'-DIAMETER, TYPE 1 FRAME, CLOSED LID	EACH	1		
60221100	MANHOLES, TYPE A, 5'-DIAMETER, TYPE 1 FRAME, CLOSED LID	EACH	1		
60221700	MANHOLES, TYPE A, 5'-DIAMETER, TYPE 8 GRATE	EACH	2		
60222000	MANHOLES, TYPE A, 5'-DIAMETER, TYPE 11 FRAME AND GRATE	EACH	3		
60236800	INLETS, TYPE A, TYPE 11 FRAME AND GRATE	EACH	8		
60236825	INLETS, TYPE A, TYPE 11V FRAME AND GRATE	EACH	2		
60240301	INLETS, TYPE B, TYPE 8 GRATE	EACH	1		
60240310	INLETS, TYPE B, TYPE 11 FRAME AND GRATE	EACH	5		
60240312	INLETS, TYPE B, TYPE 11V FRAME AND GRATE	EACH	7		
60260100	INLETS TO BE ADJUSTED	EACH	2		
60261000	INLETS TO BE ADJUSTED WITH NEW TYPE 8 GRATE	EACH	1		
60500040	REMOVING MANHOLES	EACH	1		
60500060	REMOVING INLETS	EACH	9		
60603800	COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.12	FOOT	<u>5.557</u>		
60604400	COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.18	FOOT	111		
70300100	SHORT TERM PAVEMENT MARKING	FOOT	5,280		
78000100	THERMOPLASTIC PAVEMENT MARKING - LETTERS AND SYMBOLS	SQ FT	357		
78000200	THERMOPLASTIC PAVEMENT MARKING - LINE 4"	FOOT	7,047		
78000400	THERMOPLASTIC PAVEMENT MARKING - LINE 6"	FOOT	884		
78000600	THERMOPLASTIC PAVEMENT MARKING - LINE 12"	FOOT	672		
78000650	THERMOPLASTIC PAVEMENT MARKING - LINE 24"	FOOT	153		
80400100	ELECTRIC SERVICE INSTALLATION	EACH	1		
81028350	UNDERGROUND CONDUIT, PVC, 2" DIA.	FOOT	<u>4,989</u>		
81500110	GULFBOX JUNCTION, CAST IRON	EACH	2		
81500130	GULFBOX JUNCTION REMOVAL	EACH	17		
81702120	ELECTRIC CABLE IN CONDUIT, 600V (XLP-TYPE USE) 1/C NO. 8	FOOT	24,115		
82500350	LIGHTING CONTROLLER, BASE MOUNTED, 240VOLT, 100AMP	EACH	1		
84200600	REMOVAL OF LIGHTING UNIT, NO SALVAGE	EACH	26		
88600100	DETECTOR LOOP, TYPE I	FOOT	242		
89500400	RELOCATE EXISTING PEDESTRIAN PUSH-BUTTON	EACH	3		
89502376	REBUILD EXISTING HANDHOLE	EACH	4		
X2020410	EARTH EXCAVATION (SPECIAL)	CU YD	554		
X0326440	SURFACE REMOVAL, VARIABLE DEPTH (SPECIAL)	SQ YD	5,239		
X4421000	PARTIAL DEPTH PATCHING	TON	34		
X7010216	TRAFFIC CONTROL AND PROTECTION, (SPECIAL)	L SUM	1		

**SCHEDULE OF PRICES**

County Peoria  
 Local Public Agency City of Peoria  
 Section 12-00382-00-PV  
 Route FAU 6653

Addendum 1 6/25/2014 - Modified items are underlined

PAY ITEM	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
Z0007126	HANDRAIL REMOVAL	FOOT	105		
Z0013798	CONSTRUCTION LAYOUT	L SUM	1		
Z0056608	STORM SEWER (WATER MAIN REQUIREMENTS) 12 INCH	FOOT	887		
Z0056610	STORM SEWER (WATER MAIN REQUIREMENTS) 15 INCH	FOOT	857		
Z0056612	STORM SEWER (WATER MAIN REQUIREMENTS) 18 INCH	FOOT	233		
Z0056616	STORM SEWER (WATER MAIN REQUIREMENTS) 24 INCH	FOOT	281		
Z0065702	SLOPE WALL, SPECIAL	SQ YD	76		
	PARTIAL DEPTH REMOVAL, VARIABLE DEPTH	SY	75		
	PIPE UNDERDRAINS 24"	FOOT	95		
	LED STREET LIGHT POLE AND LUMINAIRE (COMPLETE)	EACH	29		
	BIKE LANE MICRO OVERLAY, 3 PASSES	SQ YD	2,290		
	WATERMAIN, 8" DIAMETER, DUCTILE IRON, OPEN CUT	L.F.	2,567		
	WATERMAIN, 6" DIAMETER, DUCTILE IRON, OPEN CUT	L.F.	211		
	16 INCH PVC SDR 21 CASING FOR WATER/SEWER CROSSING	L.F.	22		
	16 INCH STEEL CASING PIPE FOR WATERMAIN (0.250 INCH WALL THICKNESS)	L.F.	24		
	GATE VALVE AND BOX, 8" DIAMETER	EACH	11		
	GATE VALVE AND BOX, 6" DIAMETER	EACH	6		
	TAPPING SLEEVE AND TAPPING GATE VALVE, 8" DIAMETER	EACH	1		
	TAPPING SLEEVE AND TAPPING GATE VALVE, 6" DIAMETER	EACH	2		
	DUCTILE IRON FITTINGS	LBS.	1,220		
	FIRE HYDRANT (3-WAY)	EACH	6		
	FIRE HYDRANT REMOVAL	EACH	6		
	SELECT GRANULAR BACKFILL	C.Y.	554		
	PAVEMENT REMOVAL FOR WATERMAIN	SY	2,080		
	CONCRETE PAVEMENT PLACEMENT	SY	2,080		
	WATERMAIN TESTING AND DISINFECTION	L.S.	1		

RETURN WITH BID

CONTRACTOR CERTIFICATIONS

County	Peoria
Local Public Agency	City of Peoria
Section Number	12-00362-00-PV
Route	FAU 6653

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.

- Debt Delinquency.** The bidder or contractor or subcontractor, respectively, certifies that it is not delinquent in the payment of any tax administered by the Department of Revenue unless the individual or other entity is contesting, in accordance with the procedures established by the appropriate revenue Act, its liability for the tax or the amount of tax. Making a false statement voids the contract and allows the Department to recover all amounts paid to the individual or entity under the contract in a civil action.
- Bid-Rigging or Bid Rotating.** The bidder or contractor or subcontractor, respectively, certifies that it is not barred from contracting with the Department by reason of a violation of either 720 ILCS 5/33E-3 or 720 ILCS 5/33E-4.

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

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

- Bribery.** The bidder or contractor or subcontractor, respectively, certifies that it has not been convicted of bribery or attempting to bribe an officer or employee of the State of Illinois or any unit of local government, nor has the firm made an admission of guilt of such conduct which is a matter of record, nor has an official, agent, or employee of the firm committed bribery or attempted bribery on behalf of the firm and pursuant to the direction or authorization of a responsible official of the firm.
- Interim Suspension or Suspension.** The bidder or contractor or subcontractor, respectively, certifies that it is not currently under a suspension as defined in Subpart I of Title 44 Subtitle A Chapter III Part 6 of the Illinois Administrative Code. Furthermore, if suspended prior to completion of this work, the contract or contracts executed for the completion of this work may be cancelled.

RETURN WITH BID

SIGNATURES

County Peoria  
Local Public Agency City of Peoria  
Section Number 12-00362-00-PV  
Route FAU 6653

(If an individual)

Signature of Bidder \_\_\_\_\_

Business Address \_\_\_\_\_  
\_\_\_\_\_

(If a partnership)

Firm Name \_\_\_\_\_

Signed By \_\_\_\_\_

Business Address \_\_\_\_\_  
\_\_\_\_\_

Inset Names and Addressed of All Partners



(If a corporation)

Corporate Name R.A. CULLINAN & SON  
A DIVISION OF UNITED CONTRACTORS MIDWEST, INC.

Signed By \_\_\_\_\_

Ronald H. Russell  
Vice President

Business Address \_\_\_\_\_

R.A. CULLINAN & SON  
A DIVISION OF UNITED CONTRACTORS MIDWEST, INC.  
P.O. BOX 166  
TREMONT, IL 61568

Insert Names of Officers

President \_\_\_\_\_  
Secretary \_\_\_\_\_  
Treasurer \_\_\_\_\_

James P. Bruner  
Allen D. Cullinan  
Kenton W. Dey

\* Addendum 1,2,3 Acknowled

Attest:

John H. Bruner  
45st Secretary



## Illinois Department of Transportation

### Apprenticeship or Training Program Certification

**Return with Bid**

Route	FAU 6653
County	Peoria
Local Agency	City of Peoria
Section	12-00362-00-PV

***All contractors are required to complete the following certification:***

- For this contract proposal or for all groups in this deliver and install proposal.
- For the following deliver and install groups in this material proposal:
- 
- 
- 
- 

Illinois Department of Transportation policy, adopted in accordance with the provisions of the Illinois Highway Code, requires this contract to be awarded to the lowest responsive and responsible bidder. The award decision is subject to approval by the Department. In addition to all other responsibility factors, this contract or deliver and install proposal requires all bidders and all bidders' subcontractors to disclose participation in apprenticeship or training programs that are (1) approved by and registered with the United States Department of Labor's Bureau of Apprenticeship and Training, and (2) applicable to the work of the above indicated proposals or groups. Therefore, all bidders are required to complete the following certification:

- I. Except as provided in paragraph IV below, the undersigned bidder certifies that it is a participant, either as an individual or as part of a group program, in an approved apprenticeship or training program applicable to each type of work or craft that the bidder will perform with its own employees.
- II. The undersigned bidder further certifies for work to be performed by subcontract that each of its subcontractors submitted for approval either (A) is, at the time of such bid, participating in an approved, applicable apprenticeship or training program; or (B) will, prior to commencement of performance of work pursuant to this contract, establish participation in an approved apprenticeship or training program applicable to the work of the subcontract.
- III. The undersigned bidder, by inclusion in the list in the space below, certifies the official name of each program sponsor holding the Certificate of Registration for all of the types of work or crafts in which the bidder is a participant and that will be performed with the bidder's employees. Types of work or craft that will be subcontracted shall be included and listed as subcontract work. The list shall also indicate any type of work or craft job category for which there is no applicable apprenticeship or training program available.

*See Attached Sheet*

- IV. Except for any work identified above, any bidder or subcontractor that shall perform all or part of the work of the contract or deliver and install proposal solely by individual owners, partners or members and not by employees to whom the payment of prevailing rates of wages would be required, check the following box, and identify the owner/operator workforce and positions of ownership.

---

---

---

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. The bidder is responsible for making a complete report and shall make certain that each type of work or craft job category that will be utilized on the project is accounted for and listed. The Department at any time before or after award may require the production of a copy of each applicable Certificate of Registration issued by the United States Department of Labor evidencing such participation by the contractor and any or all of its subcontractors. In order to fulfill the participation requirement, it shall not be necessary that any 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 or deliver and install proposal.

Bidder: R.A. CULLINAN & SON  
A DIVISION OF UNITED CONTRACTORS MIDWEST, INC.  
P.O. BOX 166  
TREMONT, IL 61568

By: Ronald J. Russell  
(Signature)  
VICE PRESIDENT

Address: \_\_\_\_\_

Title: \_\_\_\_\_

**RE: Certificate of Registration for  
Apprenticeship and Training Programs**

R. A. Cullinan & Son; Illinois Valley Paving; Freesen; Rowe Construction; Gunther Construction; Gunther Underground; State Highway Construction Corp., Inc.; and River City Supply, Inc. are Companies and Divisions of United Contractors Midwest, Inc. participating in one or more of the following Apprenticeship and Training Programs:

- 1) Apprenticeship & Skill Improvement – Local 150 Operating Engineers
- 2) Operating Engineers Local 318 Joint Apprenticeship and Training Program
- 3) Operating Engineers Local 520 Apprenticeship Program
- 4) Operating Engineers Local 649 Apprenticeship Fund
- 5) IUOE Local 841 Apprenticeship & Training
- 6) Local 965 Operating Engineer Improvement Committee for Central Illinois
- 7) Illinois Laborers' and Contractor's Training Trust Fund
- 8) Mid-Central Illinois Dist. Council of Carpenters Joint Apprenticeship Training Committee  
Local 16      Local 183      Local 347      Local 742  
Local 44      Local 189      Local 644      Local 904  
Local 63      Local 269      Local 725      Local 1051
- 9) Southern Illinois Dist. Council of Carpenters Joint Apprenticeship Training Committee
- 10) Operative Plasterers and Cement Mason #143 Joint Apprenticeship Training Committee
- 11) Operative Plasterers and Cement Mason #18 Joint Apprenticeship Training Committee
- 12) Operative Plasterers and Cement Mason #539 Joint Apprenticeship Training Committee
- 13) Peoria Ironworkers Joint Apprenticeship Committee
- 14) Bridge, Structural, Ornamental & Reinforcing Ironworkers Local Union No. 112
- 15) Ironworkers Local 48 Joint Apprenticeship Committee Program
- 16) Teamsters Joint Council No. 25 Apprenticeship Program

**UCM SUBCONTRACTED WORK TYPE LISTED PER PARAGRAPH "K"**

Pavement Striping	Environmental	Hazardous Waste Removal
Bridge Cleaning & Painting	Traffic Control	Waterproof Membrane System
Electrical	Hydro Demolition	Guardrail & Fence
Lime Stabilization	Asbestos Removal	Reflective Crack Control Treatment
Construction Layout	Drilled Shafts	Saw & Sealing Joints
Material Testing	Underground Utilities	Wall Tieback System
Engineering	Dredging	Hauling
Demolition	Landscaping	



## Affidavit of Illinois Business Office

County Peoria  
 Local Public Agency City of Peoria  
 Section Number 12-00362-00 PV  
 Route FAU 4653

State of Illinois )  
 ) ss.

County of Tazewell )

I, Ronald L. Rowell of Tremont, Illinois,  
 (Name of Affiant) (City of Affiant) (State of Affiant)

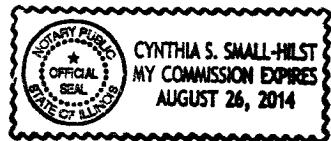
being first duly sworn upon oath, states as follows:

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

Ronald L. Rowell  
 (Print Name of Affiant)

This instrument was acknowledged before me on 10TH day of July, 2014.

(SEAL)



(Signature of Notary Public)

STATE OF ILLINOIS  
CITY OF PEORIA

**PEORIA PROPOSAL CONDITIONS**

1. The undersigned certifies that it is not delinquent in the payment of any indebtedness, tax, fee or fine owed to the City of Peoria, or in the payment of any tax administered by the Illinois Department of Revenue, and is in compliance with the terms and conditions of Sec. 10-109 of the Peoria City Code and 65 ILCS 5/11-42.1-1.
2. The undersigned firm certifies that it has not been convicted of bribery or attempting to bribe an officer or employee of the City of Peoria, nor has the firm made an admission of guilt of such conduct which is a matter of record, nor has an official, agent, or employee of the firm committed bribery or attempted bribery on behalf of the firm and pursuant to the direction or authorization of a responsible official of the firm. The undersigned firm further certifies that it has not been barred from bidding by the Federal, State or local governments and has not been suspended or debarred from receiving federal funding.
3. **EMPLOYEE/EMPLOYMENT RESTRICTIONS – THE CONTRACTOR**, (hereinafter referred to as “SERVICE PROVIDER”) agrees, as a condition of accepting this contract with the City of Peoria, that, for a period of one (1) year following completion of this contract, it shall be prohibited from hiring, directly or indirectly, any City employee or official who was involved, directly or indirectly in: (1) the selection and/or recommendation to select the SERVICE PROVIDER for performance of this contract; (2) coordinating the efforts of the SERVICE PROVIDER in the consummation or completion of this contract; or (3) monitoring or determining the performance of the SERVICE PROVIDER. The SERVICE PROVIDER further acknowledges and agrees that, upon the City’s determination that a violation of this provision has occurred, the penalty imposed, at the sole discretion of the City, may include one or more of the following: (1) cancellation of any other contract(s) between the City of Peoria and the SERVICE PROVIDER; (2) disqualification of the SERVICE PROVIDER from bidding or being awarded future contracts with the City of Peoria for a period of two [2] years; and/or (3) payment of liquidated damages to the City of Peoria in the amount of TWENTY FIVE THOUSAND DOLLARS (\$25,000.00). *This provision does not apply to any City employee involved in the 2011-12 reduction in force; nor does it apply to parties taking the Early Retirement Incentive offered by the city from November 1, 2011 through November 1, 2012.*
4. Each Bidder must be prequalified with the Illinois Department of Transportation to perform the type of construction work necessary for the project. Bidders shall include a copy of their Illinois Department of Transportation “Certificate of Eligibility” with their bid.
5. Contractor to construct the water main must be approved by Illinois American to perform such work.

6. EEO CERTIFICATION\* (Check one):

We are presently applying for the EEO Certification. Employer Report Form (Form CC-1) is completed and enclosed.

Presently, we have the Employer Report Form (Form CC-1) on file with the City of Peoria, Office of Equal Opportunity and have a current Certificate of Compliance Number.

Certificate of Compliance Number: 00676-150331

*\*Please note there is a \$50.00 processing fee for new and renewal certification requests.*

7. Accompanying this proposal is a bid bond, certified check, or cashier's check complying with the requirements of the Specifications, made payable to the City Treasurer of the City of Peoria, Illinois. If this proposal is accepted and the undersigned fails to execute a contract and contract bond as required, it is hereby agreed that the check shall be forfeited to the awarding authority.

The amount of the check or draft is \$ Bid Bond

**If Bid Bond is not used, attach Cashier's Check or Certified Check Here**



OFFICE OF EQUAL OPPORTUNITY

***ANNUAL  
CERTIFICATE OF COMPLIANCE***

This is to certify that R. A. CULLINAN & SON, A DIVISION OF UNITED CONTRACTORS MIDWEST INC has submitted an Employer Report Form (CC1) and other necessary documents satisfactory to the City of Peoria, Office of Equal Opportunity. The above named Company is hereby approved to contract with the City of Peoria and the County of Peoria for a period of one year.

If the information submitted by the Company concerning its Affirmative Action/Equal Employment as well as State and Federal mandates, has been declared false information, through an investigation, such false information shall be deemed a total breach of the contract, and such contract may be terminated, canceled or suspended, in whole or in part, and such contractor may be declared ineligible for any further contracts for a period of up to one year.

Dated this 15TH day of APRIL 2014

Expires this 31ST day of MARCH 2015

EEO Certification Number:

00676-150331

\_\_\_\_\_  
David Watkins  
Equal Opportunity Manager

***EEO CERTIFICATION FORMS NOW AVAILABLE ONLINE!***

Visit City of Peoria website at [www.peoriagov.org](http://www.peoriagov.org). Click Government, Click Other Government Departments, Click Equal Opportunity then Click Employer Report CC-1. Please utilize this convenient process.

City Hall Building  
419 Fulton Street Rm. 403  
Peoria, Illinois 61602-1283  
VOICE (309) 494-8530  
FAX (309) 494-8587



## CITY OF PEORIA SUBCONTRACTOR UTILIZATION STATEMENT

### Section I (select all that apply)

- MBE/WBE Subcontractor(s) will be utilized on this project  
 Non MBE/WBE Subcontractor(s) will be utilized on this project

### Section II

#### PRIME CONTRACTOR

R.A. CULLINAN & SON

Name: A DIV. OF UNITED CONTRACTORS MIDWEST INC  
P.O. BOX 166 121 W. PARK ST.  
Address: TREMONT, IL 61568-0166

Phone: 309-674-4343

Contact Person: Kevin Walker

Email: Kevin.Walker@UCM.BIZ

#### PROJECT

Name: Forest Hill Ave (FAU 6653)  
Total Contract Value: \$2,431,477.76

### Section III

Subcontractor Name	MBE, WBE or Non M/WBE	Amount	% of Total Contract	Scope of Work
Ordoz Construction	WBE	\$207,743.43	8.5%	Driveways & Sidewalks
Kelly Ornamental	Non M/WBE	\$21,934.44	.9%	Ornamental Handrail
Varsity Striping	WBE	\$10,269.67	.4%	Put Striping
Millen's Professional, Inc.	MBE	\$23,430.00	1%	Construction Staking
Beer Bros Concrete Cutters	Non M/WBE	\$20,460.91	.84%	Put Sawing
<b>TOTALS</b>		<b>\$283,832.50</b>	<b>11.47%</b>	

\*If more than five firms are utilized, please copy the form and attach the additional information.

### Section IV

The City of Peoria is committed to promoting equal opportunity and has established the following subcontractor utilization goals for city funded construction projects: 10% MBE and 5% WBE. Prime Contractors have an obligation to make a good faith effort to advance the city's commitment to increase diversity among the firms working on city construction projects.

This form must be completed and submitted with bid proposals. ALL subcontractors intended for use on this project shall be listed in the columns above; along with the total amount to be paid to the subcontractors; percentage of total contract; and scope of work. If for whatever reason the prime contractor has to utilize a subcontractor not listed above, they must submit a Notification of Change in Participation.

The undersigned certifies that the information included herein is true and correct; the subcontractors listed above have agreed to perform the scope of work described. The undersigned further certifies that it has no controlling, dominating or conflict of interest in any of the listed subcontractors.

Kevin C. Walker  
Signature of Prime Contractor

July 10, 2014  
Date

For Office Use Only  
Reviewed by: \_\_\_\_\_



CITY OF

PEORIA

## CITY OF PEORIA SUBCONTRACTOR UTILIZATION STATEMENT

### Section I (select all that apply)

- MBE/WBE Subcontractor(s) will be utilized on this project  
 Non MBE/WBE Subcontractor(s) will be utilized on this project

### Section II

#### PRIME CONTRACTOR

#### PROJECT

Name: R.A. CULLINAN & SON  
Name: A DIV. OF UNITED CONTRACTORS MIDWEST INC  
Address: P.O. BOX 166 121 W. PARK ST. Name: Forest Hill Ave (FAU 6453)  
TREMONT, IL 61568-0166 Total Contract Value: \$ 2,431,477.76  
Phone: 309-476-4343  
Contact Person: Kevin Walker  
Email: Kevin.Walker@UCM.BIZ

### Section III

Subcontractor Name	MBE, WBE or Non M/WBE	Amount	% of Total Contract	Scope of Work
Oberlander Electric	Non M/WBE	\$230,675.88	9.47%	Lighting
Electric Resource Management	MBE	\$32,167.00	1.35%	Electrical Supply
MCS	WBE	\$818,950.00	3.48%	Traffic Control
CJL Landscaping	WBE	\$41,460.50	1.77%	Landscaping
Alexander Bros	MBE	\$28,812.00	1.19%	Trucking + Sh. + Turnout Work
<b>TOTALS</b>		<b>\$356,065.38</b>	<b>14.64%</b>	

\*If more than five firms are utilized, please copy the form and attach the additional information.

### Section IV

The City of Peoria is committed to promoting equal opportunity and has established the following subcontractor utilization goals for city funded construction projects: 10% MBE and 5% WBE. Prime Contractors have an obligation to make a good faith effort to advance the city's commitment to increase diversity among the firms working on city construction projects.

This form must be completed and submitted with bid proposals. ALL subcontractors intended for use on this project shall be listed in the columns above; along with the total amount to be paid to the subcontractors; percentage of total contract; and scope of work. If for whatever reason the prime contractor has to utilize a subcontractor not listed above, they must submit a Notification of Change in Participation.

The undersigned certifies that the information included herein is true and correct; the subcontractors listed above have agreed to perform the scope of work described. The undersigned further certifies that it has no controlling, dominating or conflict of interest in any of the listed subcontractors.

Kevin C. Walker  
Signature of Prime Contractor

July 10, 2014  
Date

For Office Use Only  
Reviewed by \_\_\_\_\_



CITY OF

PEORIA

## CITY OF PEORIA SUBCONTRACTOR UTILIZATION STATEMENT

### Section I (select all that apply)

- MBE/WBE Subcontractor(s) will be utilized on this project  
 Non MBE/WBE Subcontractor(s) will be utilized on this project

### Section II

#### PRIME CONTRACTOR

#### PROJECT

Name: A DIV. OF UNITED CONTRACTORS MIDWEST II Name: Forest Hill Ave (FAU 6653)  
R.A. CULLINAN & SON  
P.O. BOX 166 121 W. PARK ST.

Address: TREMONT, IL 61568-0166

Total Contract Value: \$2,431,477.74

Phone: 309-476-4343

Contact Person: Kevin Walker

Email: Kevin.Walker@UCM.BIZ

### Section III

Subcontractor Name	MBE, WBE or Non M/WBE	Amount	% of Total Contract	Scope of Work
<u>Pigco</u>	<u>Non M/WBE</u>	<u>\$728,485.80</u>	<u>29.9%</u>	<u>Water main / Storm Sewer</u>
<b>TOTALS</b>		<b><u>\$728,485.80</u></b>	<b><u>29.9%</u></b>	

\*If more than five firms are utilized, please copy the form and attach the additional information.

### Section IV

The City of Peoria is committed to promoting equal opportunity and has established the following subcontractor utilization goals for city funded construction projects: 10% MBE and 5% WBE. Prime Contractors have an obligation to make a good faith effort to advance the city's commitment to increase diversity among the firms working on city construction projects.

This form must be completed and submitted with bid proposals. ALL subcontractors intended for use on this project shall be listed in the columns above; along with the total amount to be paid to the subcontractors; percentage of total contract; and scope of work. If for whatever reason the prime contractor has to utilize a subcontractor not listed above, they must submit a Notification of Change in Participation.

The undersigned certifies that the information included herein is true and correct; the subcontractors listed above have agreed to perform the scope of work described. The undersigned further certifies that it has no controlling, dominating or conflict of interest in any of the listed subcontractors.

Kevin C. Walker  
Signature of Prime Contractor

July 10, 2014  
Date

For Office Use Only  
Reviewed by: \_\_\_\_\_



## **CITY OF PEORIA M/WBE PARTICIPATION WAIVER REQUEST**

**PRIME CONTRACTOR**

Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
Phone: \_\_\_\_\_  
Contact Person: \_\_\_\_\_

**PROJECT**

Name: \_\_\_\_\_  
\_\_\_\_\_

We hereby request to waive all of the MBE and WBE participation goals on the above named project and self-perform all work for the following reason(s). The firm further affirms that the stated reasons and documents provided are true and correct and not misleading. (CHECK ALL THAT APPLY. SPECIFIC SUPPORTING DOCUMENTATION MUST BE SUBMITTED WHERE INDICATED.)

1. No MBEs/WBEs responded to our invitation to bid. \_\_\_\_\_
2. No subcontracting opportunities exist. (Attach explanation) \_\_\_\_\_
3. The award of subcontract(s) is impracticable. (Attach explanation) \_\_\_\_\_

SIGNED: \_\_\_\_\_ DATE: \_\_\_\_\_  
(Company Official)

**FOR OFFICE USE ONLY**

APPROVED

DISAPPROVED

REVIEWED BY \_\_\_\_\_

DATE \_\_\_\_\_

Return With Bid

**ILLINOIS DEPARTMENT  
OF TRANSPORTATION**

**OPTION FOR  
BITUMINOUS MATERIALS COST ADJUSTMENTS**

The bidder shall submit this completed form with his/her bid. Failure to submit the form, or failure to fill out the form completely, shall make this contract exempt of bituminous materials cost adjustments. After award, this form, when submitted, shall become part of the contract.

Contract No.: Forrest Hill 12-00342-00-PV.

Company Name: R.A. CULLINAN & SON  
A DIVISION OF UNITED CONTRACTORS MIDWEST, INC

**Contractor's Option:**

Is your company opting to include this special provision as part of the contract?

Yes  No

Signature: Ronald R. Russell Date: 7/10/14



**Illinois Department  
of Transportation**

**RETURN WITH BID**

**Local Agency  
Proposal Bid Bond**

Route Reconstruction of Forrest Hill Ave. in Peoria  
County Peoria  
Local Agency City of Peoria  
Section 12-00362-00-PV

**PAPER BID BOND**

WE R.A. Cullinan & Son, A Division of United Contractors Midwest, Inc. as PRINCIPAL,

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

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

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

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

IN TESTIMONY WHEREOF, the said PRINCIPAL and the said SURETY have caused this instrument to be signed by their respective officers this 10th day of July 2014.

**PRINCIPAL**

R.A. Cullinan & Son, A Division of United Contractors Midwest, Inc.

(Company Name)

By:

(Company Name)

By:

(Signature & Title)

(Company Name)

Ronald L. Rowell, Vice President

(Signature & Title)

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

**SURETY**

Travelers Casualty & Surety Company Of America

(Name of Surety)

By:

(Signature of Attorney-in-Fact)

Afton Booth, Attorney-in-Fact

STATE OF ILLINOIS,  
COUNTY OF Peoria

I, Christy S. Ewalt, a Notary Public in and for said county,

do hereby certify that Ronald L. Rowell and Afton Booth

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

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

**OFFICIAL SEAL**

Given under my hand and notarial seal this 8-1-2016

July 2014

My commission expires 08-01-2016

**NOTARY PUBLIC - STATE OF ILLINOIS**  
**MY COMMISSION EXPIRES 8-1-2016**

Christy S. Ewalt  
(Notary Public)

**ELECTRONIC BID BOND**

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

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



Electronic Bid Bond ID Code

(Company/Bidder Name)

(Signature and Title)

Date



## POWER OF ATTORNEY

Farmington Casualty Company  
 Fidelity and Guaranty Insurance Company  
 Fidelity and Guaranty Insurance Underwriters, Inc.  
 St. Paul Fire and Marine Insurance Company  
 St. Paul Guardian Insurance Company

St. Paul Mercury Insurance Company  
 Travelers Casualty and Surety Company  
 Travelers Casualty and Surety Company of America  
 United States Fidelity and Guaranty Company

Attorney-In Fact No. 226368

Certificate No. 005703784

**KNOW ALL MEN BY THESE PRESENTS:** That Farmington Casualty Company, St. Paul Fire and Marine Insurance Company, St. Paul Guardian Insurance Company, St. Paul Mercury Insurance Company, Travelers Casualty and Surety Company, Travelers Casualty and Surety Company of America, and United States Fidelity and Guaranty Company are corporations duly organized under the laws of the State of Connecticut, that Fidelity and Guaranty Insurance Company is a corporation duly organized under the laws of the State of Iowa, and that Fidelity and Guaranty Insurance Underwriters, Inc., is a corporation duly organized under the laws of the State of Wisconsin (herein collectively called the "Companies"), and that the Companies do hereby make, constitute and appoint

Afton Booth, Patrick J. Taphorn, and Kathy Betteridge

of the City of Pekin, State of Illinois, their true and lawful Attorney(s)-in-Fact, each in their separate capacity if more than one is named above, to sign, execute, seal and acknowledge any and all bonds, recognizances, conditional undertakings and other writings obligatory in the nature thereof on behalf of the Companies in their business of guaranteeing the fidelity of persons, guaranteeing the performance of contracts and executing or guaranteeing bonds and undertakings required or permitted in any actions or proceedings allowed by law.

**WITNESS WHEREOF**, the Companies have caused this instrument to be signed and their corporate seals to be hereto affixed, this 8th day of November 2013.

Farmington Casualty Company  
 Fidelity and Guaranty Insurance Company  
 Fidelity and Guaranty Insurance Underwriters, Inc.  
 St. Paul Fire and Marine Insurance Company  
 St. Paul Guardian Insurance Company

St. Paul Mercury Insurance Company  
 Travelers Casualty and Surety Company  
 Travelers Casualty and Surety Company of America  
 United States Fidelity and Guaranty Company



State of Connecticut  
 City of Hartford ss.

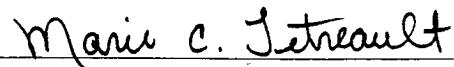
By:

  
 Robert L. Raney, Senior Vice President

On this the 8th day of November, 2013, before me personally appeared Robert L. Raney, who acknowledged himself to be the Senior Vice President of Farmington Casualty Company, Fidelity and Guaranty Insurance Company, Fidelity and Guaranty Insurance Underwriters, Inc., St. Paul Fire and Marine Insurance Company, St. Paul Guardian Insurance Company, St. Paul Mercury Insurance Company, Travelers Casualty and Surety Company, Travelers Casualty and Surety Company of America, and United States Fidelity and Guaranty Company, and that he, as such, being authorized so to do, executed the foregoing instrument for the purposes therein contained by signing on behalf of the corporations by himself as a duly authorized officer.

**Witness Whereof**, I hereunto set my hand and official seal.  
 Commission expires the 30th day of June, 2016.





Marie C. Tetreault, Notary Public

This Power of Attorney is granted under and by the authority of the following resolutions adopted by the Boards of Directors of Farmington Casualty Company, Fidelity and Guaranty Insurance Company, Fidelity and Guaranty Insurance Underwriters, Inc., St. Paul Fire and Marine Insurance Company, St. Paul Guardian Insurance Company, St. Paul Mercury Insurance Company, Travelers Casualty and Surety Company, Travelers Casualty and Surety Company of America, and United States Fidelity and Guaranty Company, which resolutions are now in full force and effect, reading as follows:

**RESOLVED**, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President, any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary may appoint Attorneys-in-Fact and Agents to act for and on behalf of the Company and may give such appointee such authority as his or her certificate of authority may prescribe to sign with the Company's name and seal with the Company's seal bonds, recognizances, contracts of indemnity, and other writings obligatory in the nature of a bond, recognizance, or conditional undertaking, and any of said officers or the Board of Directors at any time may remove any such appointee and revoke the power given him or her; and it is

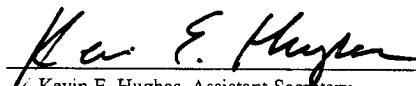
**FURTHER RESOLVED**, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President may delegate all or any part of the foregoing authority to one or more officers or employees of this Company, provided that each such delegation is in writing and a copy thereof is filed in the office of the Secretary; and it is

**FURTHER RESOLVED**, that any bond, recognizance, contract of indemnity, or writing obligatory in the nature of a bond, recognizance, or conditional undertaking shall be valid and binding upon the Company when (a) signed by the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary and duly attested and sealed with the Company's seal by a Secretary or Assistant Secretary; or (b) duly executed (under seal, if required) by one or more Attorneys-in-Fact and Agents pursuant to the power prescribed in his or her certificate or their certificates of authority or by one or more Company officers pursuant to a written delegation of authority; and it is

**FURTHER RESOLVED**, that the signature of each of the following officers: President, any Executive Vice President, any Senior Vice President, any Vice President, any Assistant Vice President, any Secretary, any Assistant Secretary, and the seal of the Company may be affixed by facsimile to any Power of Attorney or to any certificate relating thereto appointing Resident Vice Presidents, Resident Assistant Secretaries or Attorneys-in-Fact for purposes only of executing and attesting bonds and undertakings and other writings obligatory in the nature thereof, and any such Power of Attorney or certificate bearing such facsimile signature or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by such facsimile signature and facsimile seal shall be valid and binding on the Company in the future with respect to any bond or understanding to which it is attached.

I, Kevin E. Hughes, the undersigned, Assistant Secretary, of Farmington Casualty Company, Fidelity and Guaranty Insurance Company, Fidelity and Guaranty Insurance Underwriters, Inc., St. Paul Fire and Marine Insurance Company, St. Paul Guardian Insurance Company, St. Paul Mercury Insurance Company, Travelers Casualty and Surety Company, Travelers Casualty and Surety Company of America, and United States Fidelity and Guaranty Company do hereby certify that the above and foregoing is a true and correct copy of the Power of Attorney executed by said Companies, which is in full force and effect and has not been revoked.

**TESTIMONY WHEREOF**, I have hereunto set my hand and affixed the seals of said Companies this 8<sup>th</sup> day of July, 20 14.



Kevin E. Hughes, Assistant Secretary



To verify the authenticity of this Power of Attorney, call 1-800-421-3880 or contact us at [www.travelersbond.com](http://www.travelersbond.com). Please refer to the Attorney-In-Fact number, the above-named individuals and the details of the bond to which the power is attached.



**ADDENDUM NO. 1**  
**CITY OF PEORIA**  
**FORREST HILL AVENUE PROJECT**  
**Section No. 12-00362-00-PV**  
**Letting: JULY 8, 2014 at 10:00am**

**JUNE 27, 2014**

RE: Addendum #1 for Bid Package, Forrest Hill Avenue - Sheridan Road to Knoxville Avenue, Peoria, IL

The following shall be considered part of the Contract Documents for the subject project and shall apply to all construction thereunder.

REVISED BID DOCUMENT (Issued with this Addendum):

- 1) Sheet 3 – Changed Quantity of Item # 20200100, Earth Excavation, from 1,172 CUYD to 1,204 CUYD.
- 2) Sheet 3 – Changed Item # 31100300, from Subbase Granular Material Type A, to Subbase Granular Material, Type B. Also, changed quantity and units from 936 SQYD to 213 TONS.
- 3) Sheet 3 – Changed Quantity of Item # 40800050, Incidental Hot-Mix Asphalt Surfacing, from 41 TONS to 65 TONS.
- 4) Sheet 3 - Changed Quantity of Item # 44000100, Pavement Removal, from 3,068 SQYD to 3,096 SQYD.
- 5) Sheet 3 - Changed Quantity of Item # 59300100, Controlled Low-Strength Material, from 468 CUYD to 482 CUYD.
- 6) Sheet 3 - Changed Quantity of Item # 60603800, Combination Concrete Curb and Gutter, Type B-6.12, from 5,037 FEET to 5,557 FEET.
- 7) Sheet 11 –Proposed Materials Legend, Description of Item #11 changed from Type A to Type B.
- 8) Sheet 12 - Proposed Materials Legend, Description of Item #11 changed from Type A to Type B.
- 9) Sheet 13 - Proposed Materials Legend, Description of Item #11 changed from Type A to Type B.
- 10) Sheet 14 - Proposed Materials Legend, Description of Item #11 changed from Type A to Type B.
- 11) Sheet 15 - Proposed Materials Legend, Description of Item #11 changed from Type A to Type B.
- 12) Sheet 16 - Proposed Materials Legend, Description of Item #11 changed from Type A to Type B.
- 13) Sheet 17 – Added Sawcut & Pavement Removal along edge of pavement on Bootz Ave, 125 LF both

sides.

- 14) Sheet 24 – Added Incidental HMA & Combination Concrete Curb & Gutter Type B-6.12 on Bootz Ave, 125 LF both sides.
- 15) Sheet 29 – Added Curb on Bootz Ave.
- 16) Sheet 58 – Added Detail on left side of sheet for SIDE STREET CURB EXTENSION AT BOOTZ AVENUE.
- 17) Page I-4 - Changed Quantity of Item # 20200100, Earth Excavation, from 1,172 CUYD to 1,204 CUYD.
- 18) Page I-4 – Changed Item # 31100300, from Subbase Granular Material Type A, to Subbase Granular Material, Type B. Also, changed quantity and units from 936 SQYD to 213 TONS.
- 19) Page I-4 - Changed Quantity of Item # 40800050, Incidental Hot-Mix Asphalt Surfacing, from 41 TONS to 65 TONS.
- 20) Page I-4 - Changed Quantity of Item # 44000100, Pavement Removal, from 3,068 SQYD to 3,096 SQYD.
- 21) Page I-4 - Changed Quantity of Item # 59300100, Controlled Low-Strength Material, from 468 CUYD to 482 CUYD.
- 22) Page I-5 - Changed Quantity of Item # 60603800, Combination Concrete Curb and Gutter, Type B-6.12, from 5,037 FEET to 5,557 FEET.
- 23) Pages ii and iii (Table of Contents between Sections I and II) – Change Page Numbers.
- 24) Pages II-1 through II-13, Changed upper right corner Project name from *University Street (FAU 6593) Section Number 12-00361-00-PV* to *Forrest Hill (FAU 6653) Section Number 12-00362-00-PV*.
- 25) Pages BDE 4342 1/8 through BDE 2342a 7/7 – Added Pages numbers II-14 through II-21.
- 26) Page IV-4 – Unchecked Items LRS 6 and LRS 12.
- 27) Pages IV-6 & IV-7 – Changed upper right corner Project name from *University Street (FAU 6593) Section Number 12-00361-00-PV* to *Forrest Hill (FAU 6653) Section Number 12-00362-00-PV*.
- 28) Page II-14 – Removed single sheet for CONTRACT CLAIMS (BDE) and moved FRICTION AGGREGATE (BDE) from Page II-14 to II-13.
- 29) Page IV-36 – Removed single Sheet for PROGRESS PAYMENTS (BDE) and moved QUALITY CONTROL/QUALITY ASSURANCE OF CONCRETE MIXTURES (BDE) from Page IV-36 to IV-34.
- 30) Page IV-37 – Added section REMOVAL AND DISPOSAL OF REGULATED SUBSTANCES (BDE). Page numbers for this section are now IV-35 through IV-38.
- 31) Page IV-42 – Removed WET REFELCTIVE THERMOPLASTIC PAVEMENT MARKING (BDE).

- 32) Page IV-43 – Added section SPECIAL PROVISION FOR BIDDING REQUIREMENTS AND CONDITION FOR CONTRACT PROPOSAL. Page numbers for this section are now IV-44 through IV-48.
- 33) Page IV-43 – Added section SPECIAL PROVISION FOR WAGES OF EMPLOYEES ON PUBLIC WORKS. Page number for this Special Provision is now IV-49.

**Bidders shall acknowledge receipt of this addendum by inserting its number on Bid Form. Failure to do so may subject Bidder to Disqualification.**

All changes on plan sheets are clouded.

This Addendum consists of these 3 cover sheets, eleven plan sheets, and an ENTIRE Specifications and Proposal Book.

Sincerely,



Stephen Letsky, P.E.  
Project Engineer

Attachments

SUMMARY OF QUANTITIES					
SP	PAY ITEM	ITEM DESCRIPTION	UNIT	BID QUANTITY	RECORD QUANTITY
	20200100	EARTH EXCAVATION	CU YD	1,204	
	20700220	POROUS GRANULAR EMBANKMENT	CU YD	1,255	
	20800150	TRENCH BACKFILL	CU YD	317	
	20900110	POROUS GRANULAR BACKFILL	CU YD	554	
	21101600	TOPSOIL FURNISH AND PLACE, VARIABLE DEPTH	SQ YD	2,741	
	25200100	SODDING	SQ YD	1,025	
	25200110	SODDING, SALT TOLERANT	SQ YD	1,716	
	28000400	PERIMETER EROSION BARRIER	FOOT	398	
	28000500	INLET AND PIPE PROTECTION	EACH	40	
	28200200	FILTER FABRIC	SQ YD	220	
	31010000	SUBBASE GRANULAR MATERIAL, TYPE B	TON	213	
	35300200	PORTLAND CEMENT CONCRETE BASE COURSE 7"	SQ YD	822	
	35400100	PORTLAND CEMENT CONCRETE BASE COURSE WIDENING 6"	SQ YD	766	
	40201000	AGGREGATE FOR TEMPORARY ACCESS	TON	385	
	40600115	POLYMERIZED BITUMINOUS MATERIALS (PRIME COAT)	GALLON	1,625	
	40600827	POLYMERIZED LEVELING BINDER (MACHINE METHOD), IL-4.75, N50	TON	178	
	40603214	POLYMERIZED HOT-MIX ASPHALT BINDER COURSE, IL-12.5, N70	TON	1,555	
	40603565	POLYMERIZED HOT-MIX ASPHALT SURFACE COURSE, MIX "E", N70	TON	707	
	40800050	INCIDENTAL HOT-MIX ASPHALT SURFACING	TON	65	
	42001000	HIGH-EARLY-STRENGTH PORTLAND CONCRETE CEMENT, 9"	SQ YD	7	
	42300200	PORTLAND CEMENT CONCRETE DRIVEWAY PAVEMENT, 6 INCH	SQ YD	1,063	
	42300400	PORTLAND CEMENT CONCRETE DRIVEWAY PAVEMENT, 8 INCH	SQ YD	315	
	42400100	PORTLAND CEMENT CONCRETE SIDEWALK, 4 INCH	SQ FT	22,592	
	42400800	DETECTABLE WARNINGS	SQ FT	246	
	44000100	PAVEMENT REMOVAL	SQ YD	3,096	
	44000200	DRIVEWAY PAVEMENT REMOVAL	SQ YD	1,126	
	44000600	SIDEWALK REMOVAL	SQ FT	24,487	
	44201403	CLASS C PATCHES, TYPE II, 14 INCH	SQ YD	131	
	50600200	PAINTING STEEL RAILING	FOOT	43	
	50900805	PEDESTRIAN RAILING	FOOT	198	
	55100500	STORM SEWER REMOVAL 12"	FOOT	27	
	55100700	STORM SEWER REMOVAL 15"	FOOT	16	
	55100900	STORM SEWER REMOVAL 18"	FOOT	140	
	59300100	CONTROLLED LOW-STRENGTH MATERIAL	CU YD	482	
	60107800	PIPE UNDERDRAINS 8"	FOOT	127	
	60108000	PIPE UNDERDRAINS 12"	FOOT	59	
	60201110	CATCH BASINS, TYPE A, 4'-DIAMETER, TYPE II V FRAME AND GRATE	EACH	4	
	60204805	CATCH BASINS, TYPE A, 5'-DIAMETER, TYPE II V FRAME AND GRATE	EACH	1	
	60206600	CATCH BASINS, TYPE B, TYPE 7 GRATE	EACH	1	
	60218399	MANHOLES, TYPE A, 4'-DIAMETER, TYPE I FRAME, OPEN LID	EACH	1	
	60218400	MANHOLES, TYPE A, 4'-DIAMETER, TYPE I FRAME, CLOSED LID	EACH	1	
	60221100	MANHOLES, TYPE A, 5'-DIAMETER, TYPE I FRAME, CLOSED LID	EACH	1	
	60221700	MANHOLES, TYPE A, 5'-DIAMETER, TYPE 8 GRATE	EACH	2	
	60222000	MANHOLES, TYPE A, 5'-DIAMETER, TYPE II V FRAME AND GRATE	EACH	3	
	60236800	INLETS, TYPE A, TYPE II V FRAME AND GRATE	EACH	8	
	60236825	INLETS, TYPE A, TYPE II V FRAME AND GRATE	EACH	2	
	60240301	INLETS, TYPE B, TYPE 8 GRATE	EACH	1	
	60240310	INLETS, TYPE B, TYPE II V FRAME AND GRATE	EACH	5	

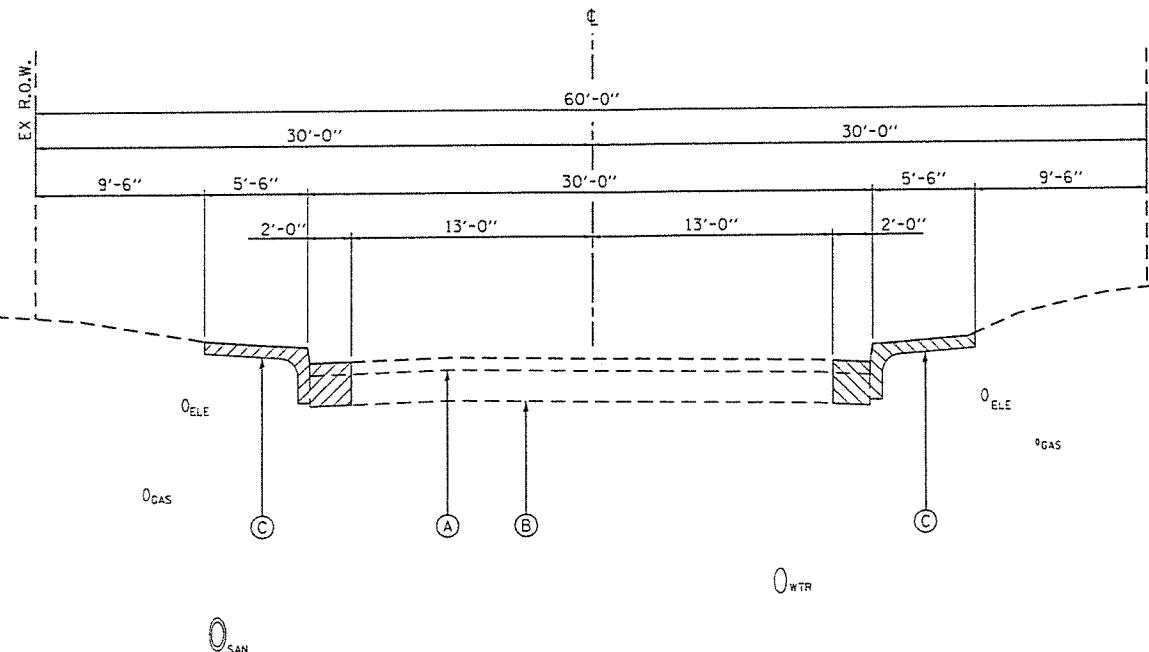
SUMMARY OF QUANTITIES					
SP	PAY ITEM	ITEM DESCRIPTION	UNIT	BID QUANTITY	RECORD QUANTITY
	60240312	INLETS, TYPE B, TYPE II V FRAME AND GRATE	EACH	7	
	60260100	INLETS TO BE ADJUSTED	EACH	2	
	60261000	INLETS TO BE ADJUSTED WITH NEW TYPE 8 GRATE	EACH	1	
	60500040	REMOVING MANHOLES	EACH	1	
	60500060	REMOVING INLETS	EACH	9	
	60603800	COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.12	FOOT	5,557	
	60604400	COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.18	FOOT	III	
	70300100	SHORT TERM PAVEMENT MARKING	FOOT	5,280	
	78000100	THERMOPLASTIC PAVEMENT MARKING - LETTERS AND SYMBOLS	SQ FT	357	
	78000200	THERMOPLASTIC PAVEMENT MARKING - LINE 4"	FOOT	7,047	
	78000400	THERMOPLASTIC PAVEMENT MARKING - LINE 6"	FOOT	884	
	78000600	THERMOPLASTIC PAVEMENT MARKING - LINE 12"	FOOT	672	
	78000650	THERMOPLASTIC PAVEMENT MARKING - LINE 24"	FOOT	153	
	80400100	ELECTRIC SERVICE INSTALLATION	EACH	1	
	81028350	UNDERGROUND CONDUIT, PVC, 2" DIA.	FOOT	4,989	
	81500110	GULFBOX JUNCTION, CAST IRON	EACH	2	
	81500130	GULFBOX JUNCTION REMOVAL	EACH	17	
	81702120	ELECTRIC CABLE IN CONDUIT, 600V (XLP-TYPE USE) 1/C NO. 8	FOOT	24,115	
	82500350	LIGHTING CONTROLLER, BASE MOUNTED, 240VOLT, 100AMP	EACH	1	
	84200600	REMOVAL OF LIGHTING UNIT, NO SALVAGE	EACH	26	
	88600100	DETECTOR LOOP, TYPE I	FOOT	242	
	89500400	RELOCATE EXISTING PEDESTRIAN PUSH-BUTTON	EACH	3	
	89502376	REBUILD EXISTING HANDHOLE	EACH	4	
	X2020410	EARTH EXCAVATION (SPECIAL)	CU YD	554	
	X0326440	SURFACE REMOVAL, VARIABLE DEPTH (SPECIAL)	SQ YD	5,239	
	X4421000	PARTIAL DEPTH PATCHING	TON	34	
	X7010216	TRAFFIC CONTROL AND PROTECTION, (SPECIAL)	L SUM	1	
	Z0007126	HANDRAIL REMOVAL	FOOT	105	
	Z0013798	CONSTRUCTION LAYOUT	L SUM	1	
	Z0056608	STORM SEWER (WATER MAIN REQUIREMENTS) 12 INCH	FOOT	887	
	Z0056610	STORM SEWER (WATER MAIN REQUIREMENTS) 15 INCH	FOOT	857	
	Z0056612	STORM SEWER (WATER MAIN REQUIREMENTS) 18 INCH	FOOT	233	
	Z0056616	STORM SEWER (WATER MAIN REQUIREMENTS) 24 INCH	FOOT	281	
	Z0065702	SLOPE WALL, SPECIAL	SQ YD	76	
		PARTIAL DEPTH REMOVAL, VARIABLE DEPTH	SY	75	
		PIPE UNDERDRAINS 24"	FOOT	95	
		LED STREET LIGHT POLE AND LUMINAIRE (COMPLETE)	EACH	29	
		BIKE LANE MICRO OVERLAY, 3 PASSES	SQ YD	2,290	
		WATERMAIN, 8" DIAMETER, DUCTILE IRON, OPEN CUT	L.F.	2,567	
		WATERMAIN, 6" DIAMETER, DUCTILE IRON, OPEN CUT	L.F.	211	
		16 INCH PVC SDR 21 CASING FOR WATER/SEWER CROSSING	L.F.	22	
		16 INCH STEEL CASING PIPE FOR WATERMAIN (0.250 INCH WALL THICKNESS)	L.F.	24	
		GATE VALVE AND BOX, 8" DIAMETER	EACH	11	
		GATE VALVE AND BOX, 6" DIAMETER	EACH	6	
		TAPPING SLEEVE AND TAPPING GATE VALVE, 8" DIAMETER	EACH	1	
		TAPPING SLEEVE AND TAPPING GATE VALVE, 6" DIAMETER	EACH	2	
		DUCTILE IRON FITTINGS	LBS.	1,220	
		FIRE HYDRANT (3-WAY)	EACH	6	



### EXISTING MATERIALS

- (A) HOT-MIX ASPHALT OVERLAY, VARIABLE DEPTH
- (B) PCC PAVEMENT, 10"
- (C) PCC COMBINATION CURB - SIDEWALK

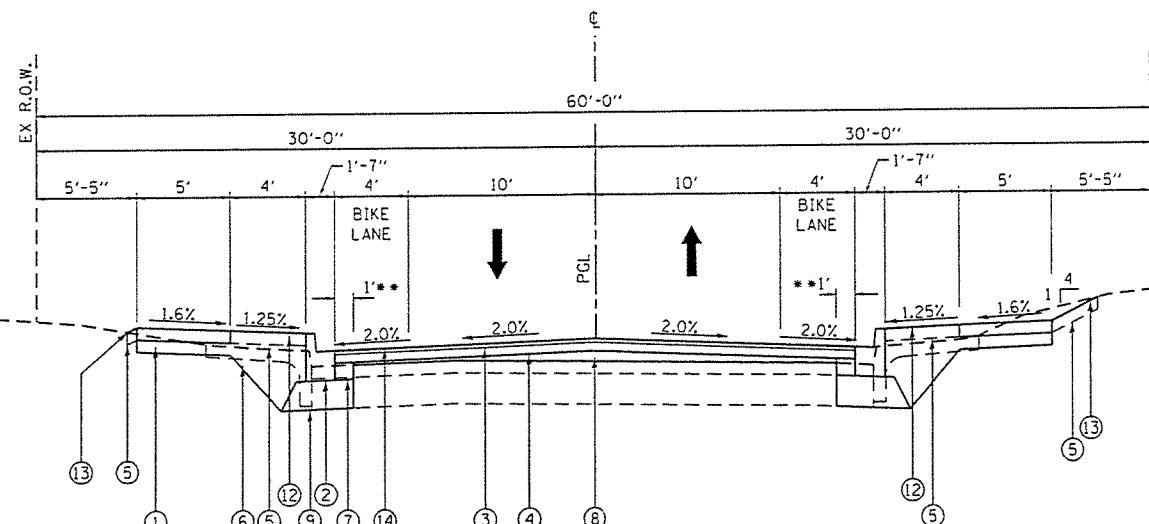
 PAVEMENT, CURB, & SIDEWALK REMOVAL



**EXISTING TYPICAL SECTION**  
STA. 102 + 52.27 TO STA. 113 + 38.00

### PROPOSED MATERIALS

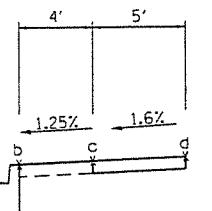
- (1) PCC SIDEWALK, 4"
- (2) CCC&G, TYPE B-6.12
- (3) POLYMERIZED HMA SURFACE COURSE, MIX E, 1 1/4"
- (4) POLYMERIZED HMA BINDER COURSE, IL-12.5, 2 3/4"
- (5) TOPSOIL, 4"
- (6) POROUS GRANULAR EMBANKMENT, FINE AGG.
- (7) PCC BASE COURSE WIDENING, 6"
- (8) POLYMERIZED HMA LEVELING BINDER COURSE, IL-4.75, N50
- (9) CONTROLLED LOW-STRENGTH MATERIAL
- (10) PCC BASE COURSE, 7"
- (11) SUB-BASE GRANULAR MATERIAL, TYPE B
- (12) SODDING, SALT TOLERANT
- (13) SODDING
- (14) BIKE LANE MICRO OVERLAY, 3 PASSES



**PROPOSED TYPICAL SECTION**  
STA. 102 + 52.27 TO STA. 113 + 38.00

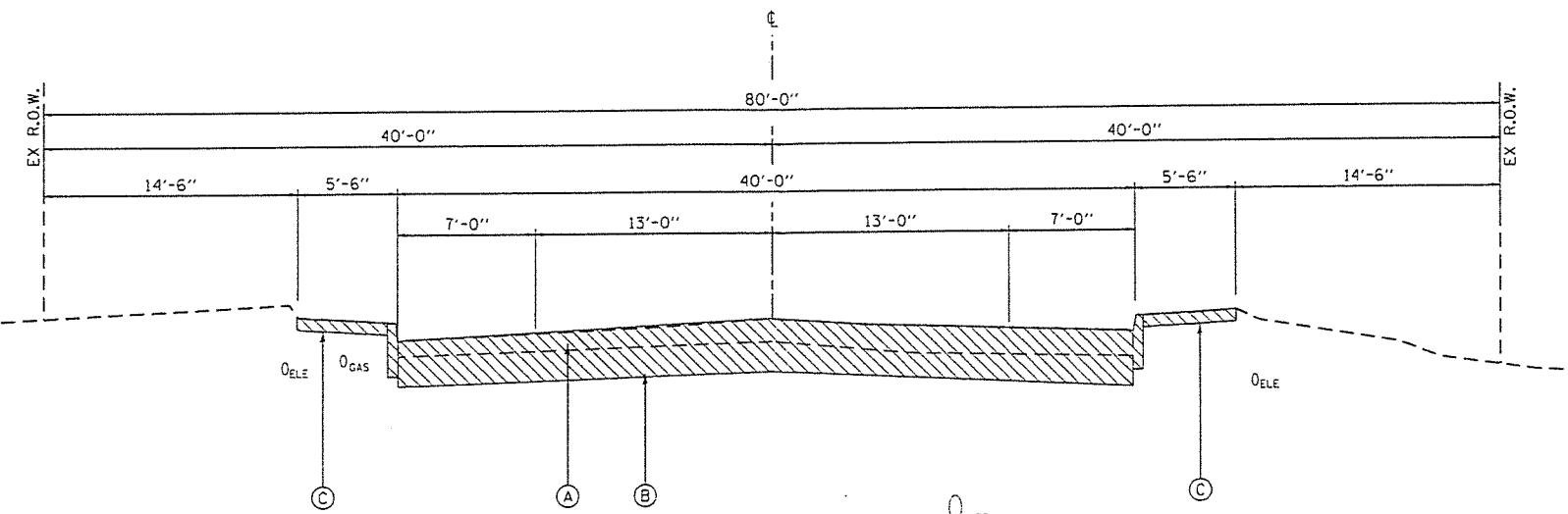
\*\* WIDTH SHALL BE 12" FROM EXISTING FACE OF CURB OR 9" FROM OUTSIDE OF PROPOSED STORM PIPE

**ELEVATION RELATIVE TO PGL**  
STA. 102 + 52.27 TO STA. 121 + 80.00

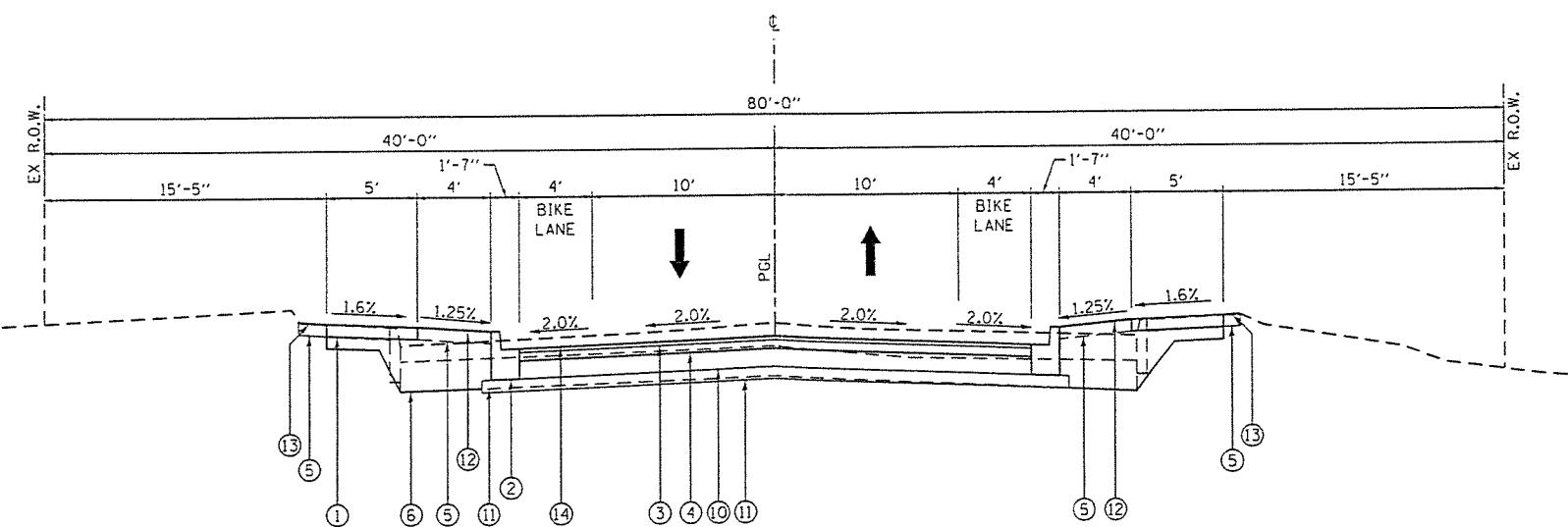


ELa = PGL - 0.28'  
ELb = PGL + 0.16'  
ELc = PGL + 0.21'  
ELd = PGL + 0.29'

(9) CLSM- CLSM HAS BEEN CALCULATED AS SHOWN ON TYPICAL SECTIONS, WHERE STORM SEWER IS BELOW CURB & CUTTER, TRENCH BACKFILL SHALL BE USED INSTEAD OF CLSM.

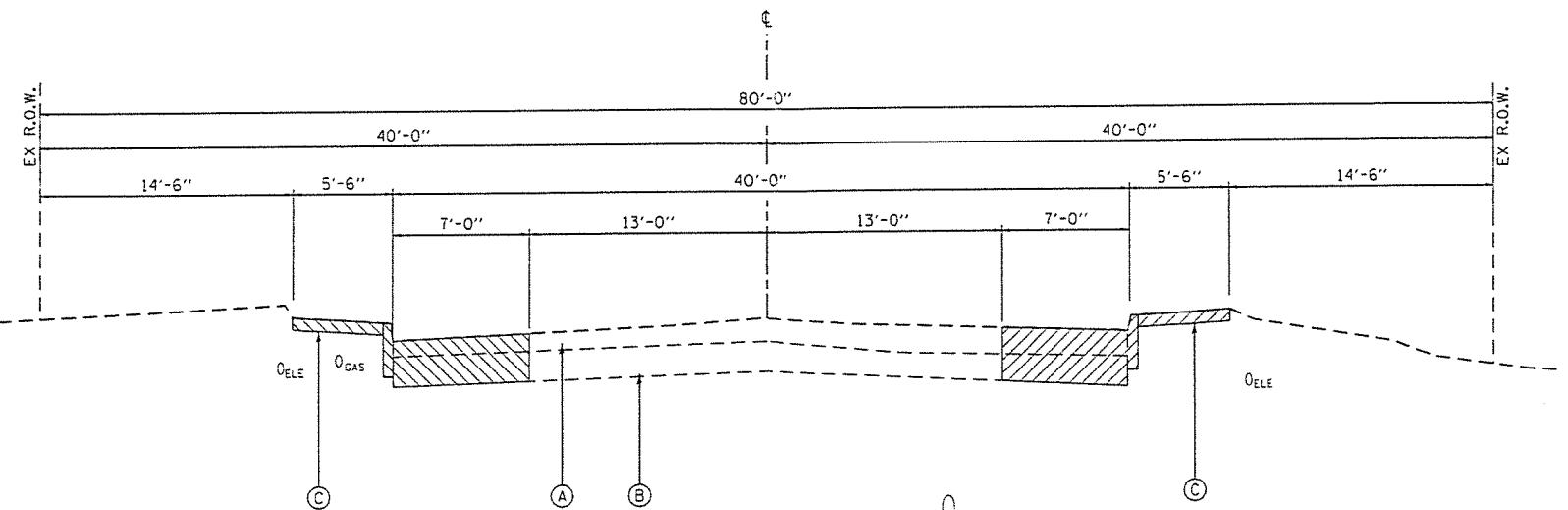


**EXISTING TYPICAL SECTION**  
STA. 113 + 38.00 TO STA. 114 + 55.00

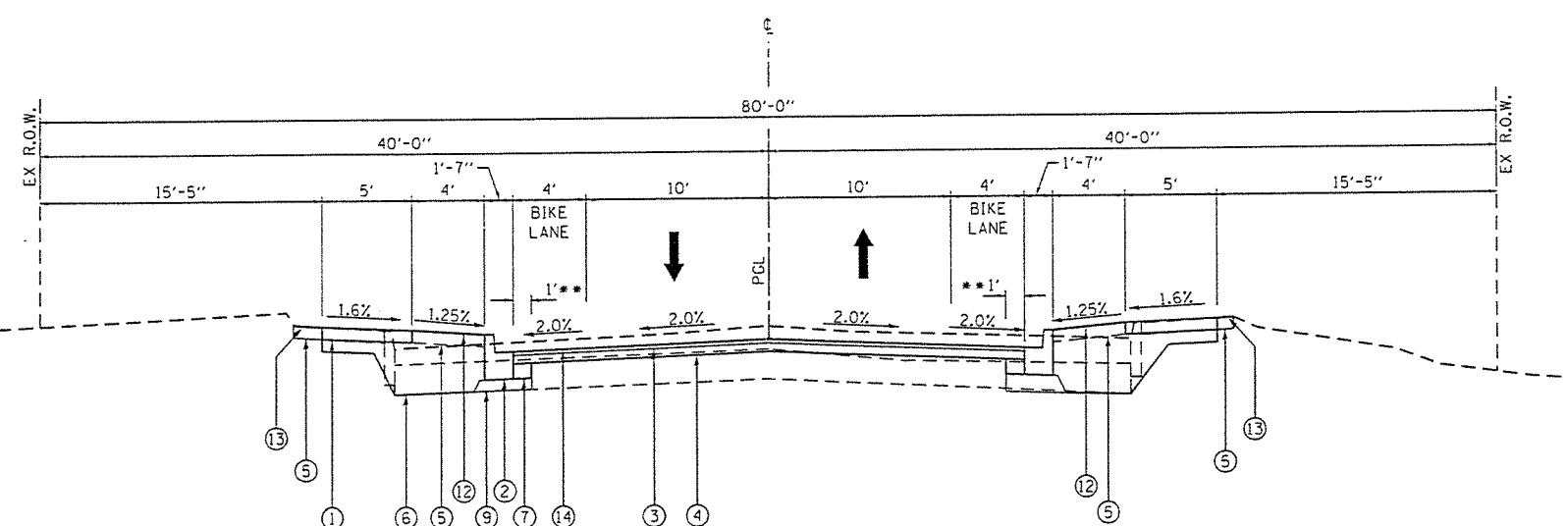


**PROPOSED TYPICAL SECTION**  
STA. 113 + 38.00 TO STA. 114 + 55.00

(9) CLSM- CLSM HAS BEEN CALCULATED AS SHOWN ON TYPICAL SECTIONS. WHERE STORM SEWER IS BELOW CURB & GUTTER, TRENCH BACKFILL SHALL BE USED INSTEAD OF CLSM.



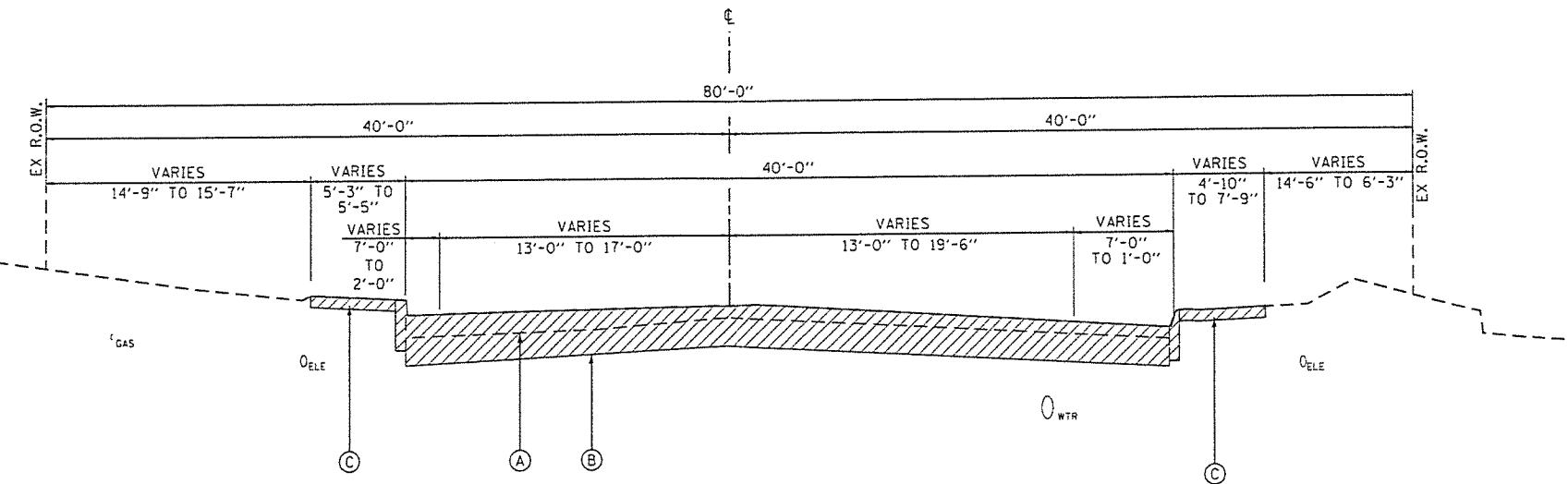
**EXISTING TYPICAL SECTION**  
STA. 114 + 55.00 TO STA. 121 + 80.00



**PROPOSED TYPICAL SECTION**  
STA. 114 + 55.00 TO STA. 121 + 80.00

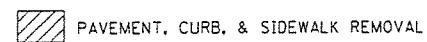
\*\* WIDTH SHALL BE 12" FROM EXISTING FACE OF CURB OR 9" FROM OUTSIDE OF PROPOSED STORM PIPE

⑨ CLSM- CLSM HAS BEEN CALCULATED AS SHOWN ON TYPICAL SECTIONS. WHERE STORM SEWER IS BELOW CURB & GUTTER, TRENCH BACKFILL SHALL BE USED INSTEAD OF CLSM.



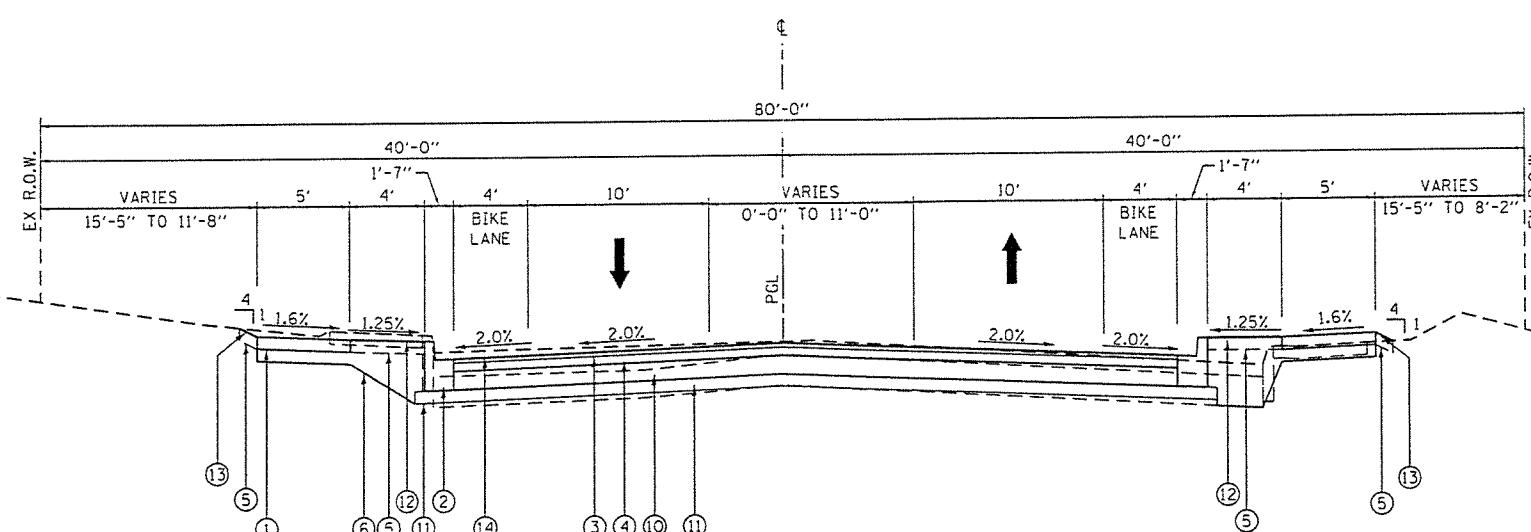
EXISTING MATERIALS

- (A) HOT-MIX ASPHALT OVERLAY, VARIABLE DEPTH
- (B) PCC PAVEMENT, 10''
- (C) PCC COMBINATION CURB - SIDEWALK



EXISTING TYPICAL SECTION

STA. 121+80.00 TO STA. 123+12.00



PROPOSED MATERIALS

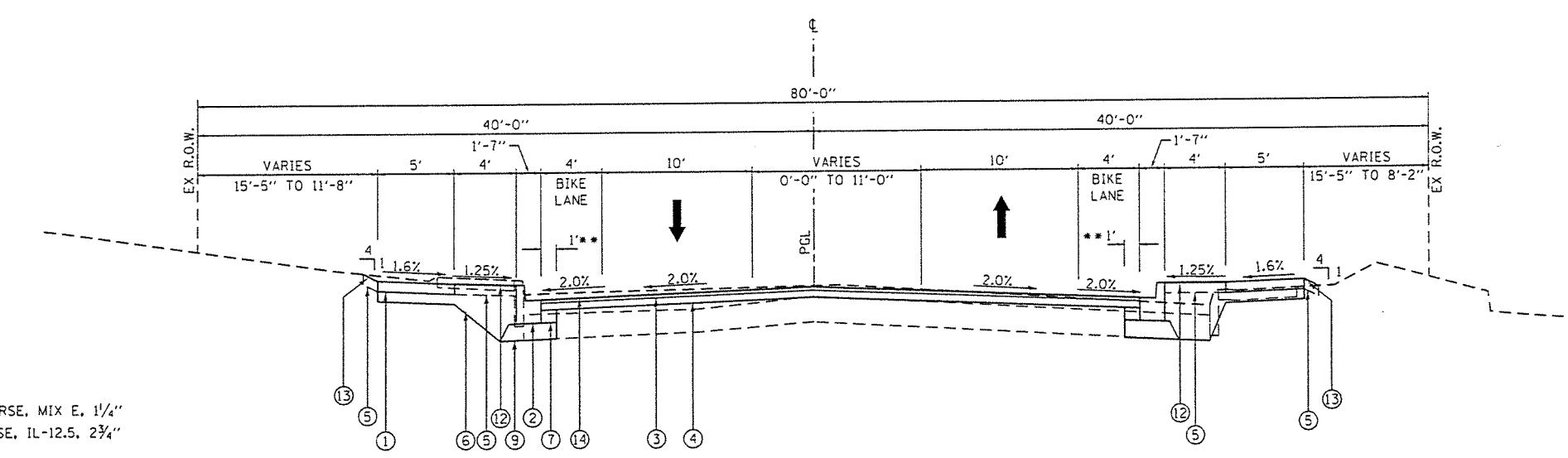
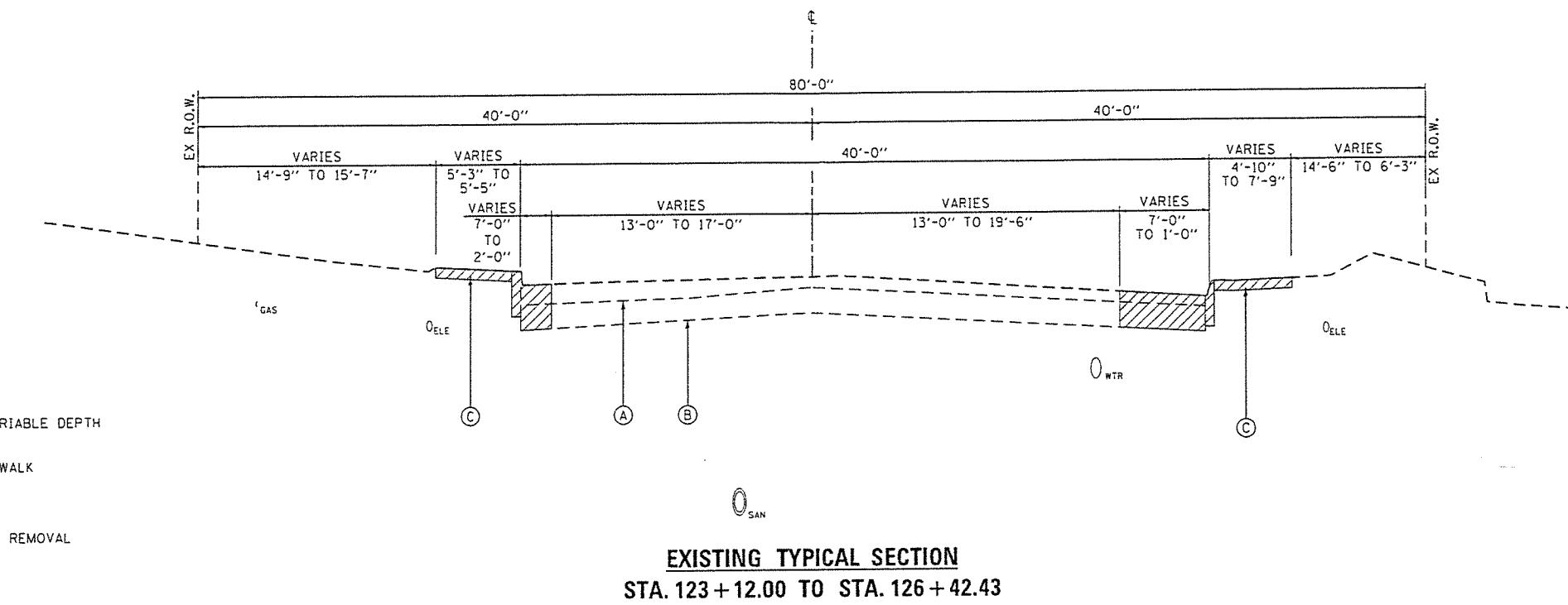
- (1) PCC SIDEWALK, 4"
- (2) CCC&G, TYPE B-6.12
- (3) POLYMERIZED HMA SURFACE COURSE, MIX E, 1 1/4"
- (4) POLYMERIZED HMA BINDER COURSE, IL-12.5, 2 3/4"
- (5) TOPSOIL, 4"
- (6) POROUS GRANULAR EMBANKMENT, FINE AGG.
- (7) PCC BASE COURSE WIDENING, 6"
- (8) POLYMERIZED HMA LEVELING BINDER COURSE, IL-4.75, NS0
- (9) CONTROLLED LOW-STRENGTH MATERIAL
- (10) PCC BASE COURSE, 7"
- (11) SUB-BASE GRANULAR MATERIAL, TYPE B
- (12) SODDING, SALT TOLERANT
- (13) SODDING
- (14) BIKE LANE MICRO OVERLAY, 3 PASSES

PROPOSED TYPICAL SECTION

STA. 121+80.00 TO STA. 123+12.00

(9) CLSM- CLSM HAS BEEN CALCULATED AS SHOWN ON TYPICAL SECTIONS. WHERE STORM SEWER IS BELOW CURB & CUTTER, TRENCH BACKFILL SHALL BE USED INSTEAD OF CLSM.



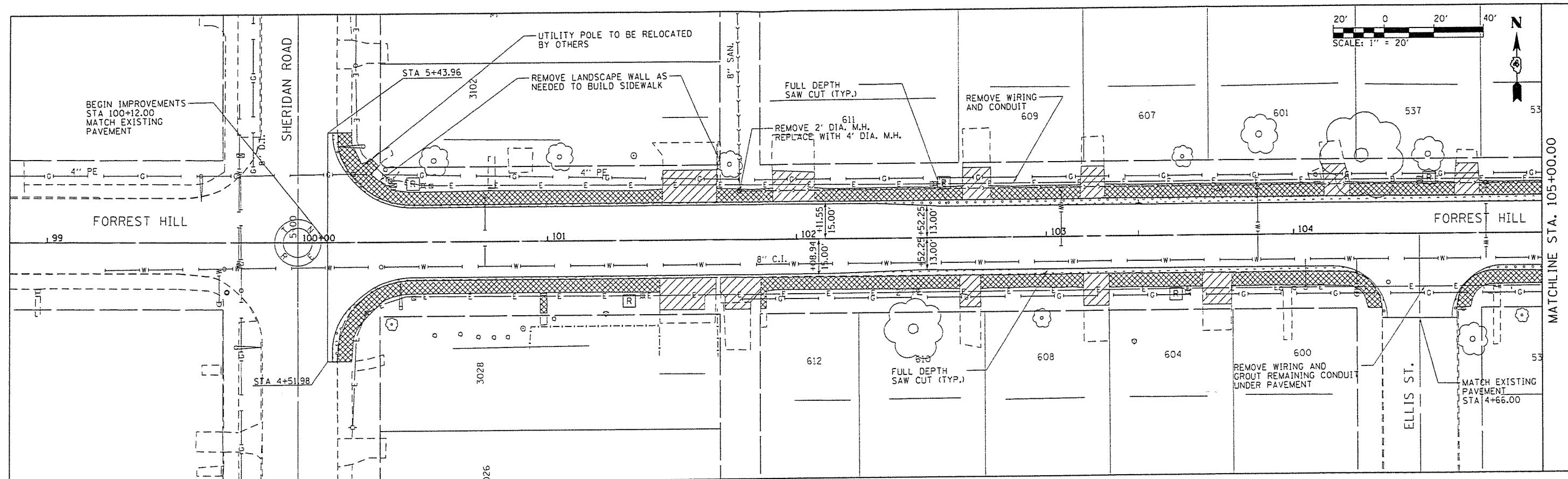


**PROPOSED TYPICAL SECTION**

**STA. 123 + 12.00 TO STA. 126 + 42.43**

\*\* WIDTH SHALL BE 12" FROM EXISTING FACE OF CURB OR 9" FROM  
OUTSIDE OF PROPOSED STORM PIPE

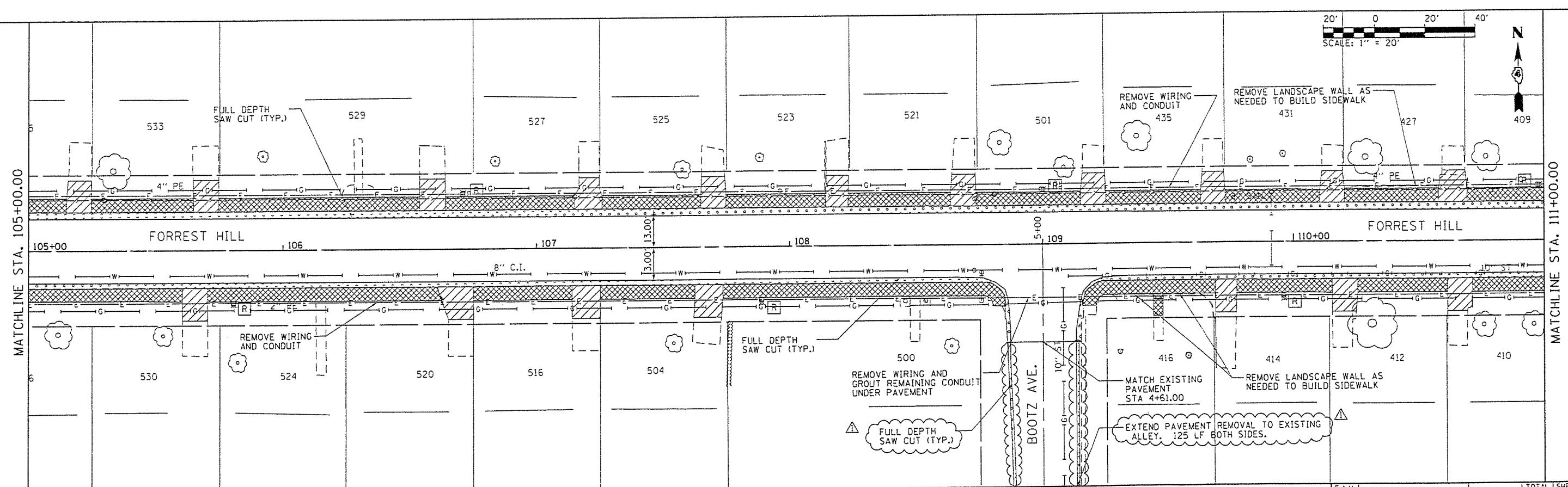
⑨ CLSM- CLSM HAS BEEN CALCULATED AS SHOWN ON TYPICAL SECTIONS. WHERE STORM SEWER IS BELOW CURB & GUTTER, TRENCH BACKFILL SHALL BE USED INSTEAD OF CLSM.



**LEGEND**

PAVEMENT REMOVAL   
ENTRANCE REMOVAL

SIDEWALK REMOVAL



DIRECTORY = L:\Pendal\128600\100\For\sub\Draw\CA00\_Sheet1..

DEL NAME = Sheet1  
LE NAME = Removable  
LOT SCALE = 40.0000  
LOT DATE = 6/25/

**CITY OF PEORIA  
DEPARTMENT OF PUBLIC WORKS**

**REMOVAL PLANS  
FORREST HILL**

REMOVAL PLANS FORREST HILL		F.A.I.U. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		6653	12-00362-00-PV	PEORIA	90	17
		CONTRACT NO.				
1 OF 3 SHEETS	STA. 99+00.00	TO STA. 111+00.00	ILLINOIS FED. AID PROJECT			

PLAN	SPUNIFIED	DATE
PILOTED	ALIGNED CHECKED	BY
NOTE BOOK	1ST, 2ND, 3RD, 4TH, 5TH, 6TH	NO. _____

PROFILE	SORTED	DATE
NOTE BOOK	GRADES CHECKED	BY
NO. _____	BAL. NOTED	_____
STRUCTURE	ROTATIS END	_____

DIRECTORY : E:\peoria\2000\forrest\00\Drawings\000\_Sheet01  
USER NAME : Emily Manders

**CMT**  
CRAWFORD, MURPHY & TILLY, INC.  
CONSULTING ENGINEERS  
License No. 164-050813



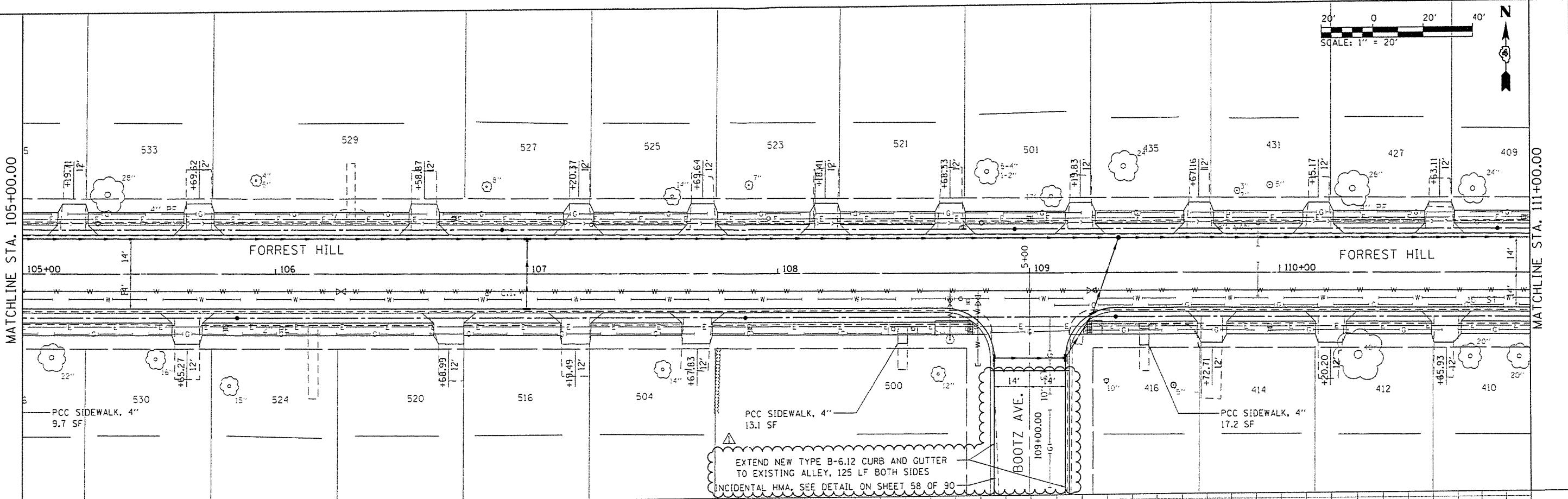
© Copyright CMT Inc.  
MODEL NAME = 2  
FILE NAME = PNP.dwg  
PLOT SCALE = 40.0000' / in.  
PLOT DATE = 6/24/2014 5:26:37 PM



DESIGNED - EMM  
DRAWN - AWH  
CHECKED - EJH  
DATE - JUNE 2014



REVISED - 6/25/14  
REVISED -  
REVISED -  
REVISED -



CITY OF PEORIA  
DEPARTMENT OF PUBLIC WORKS

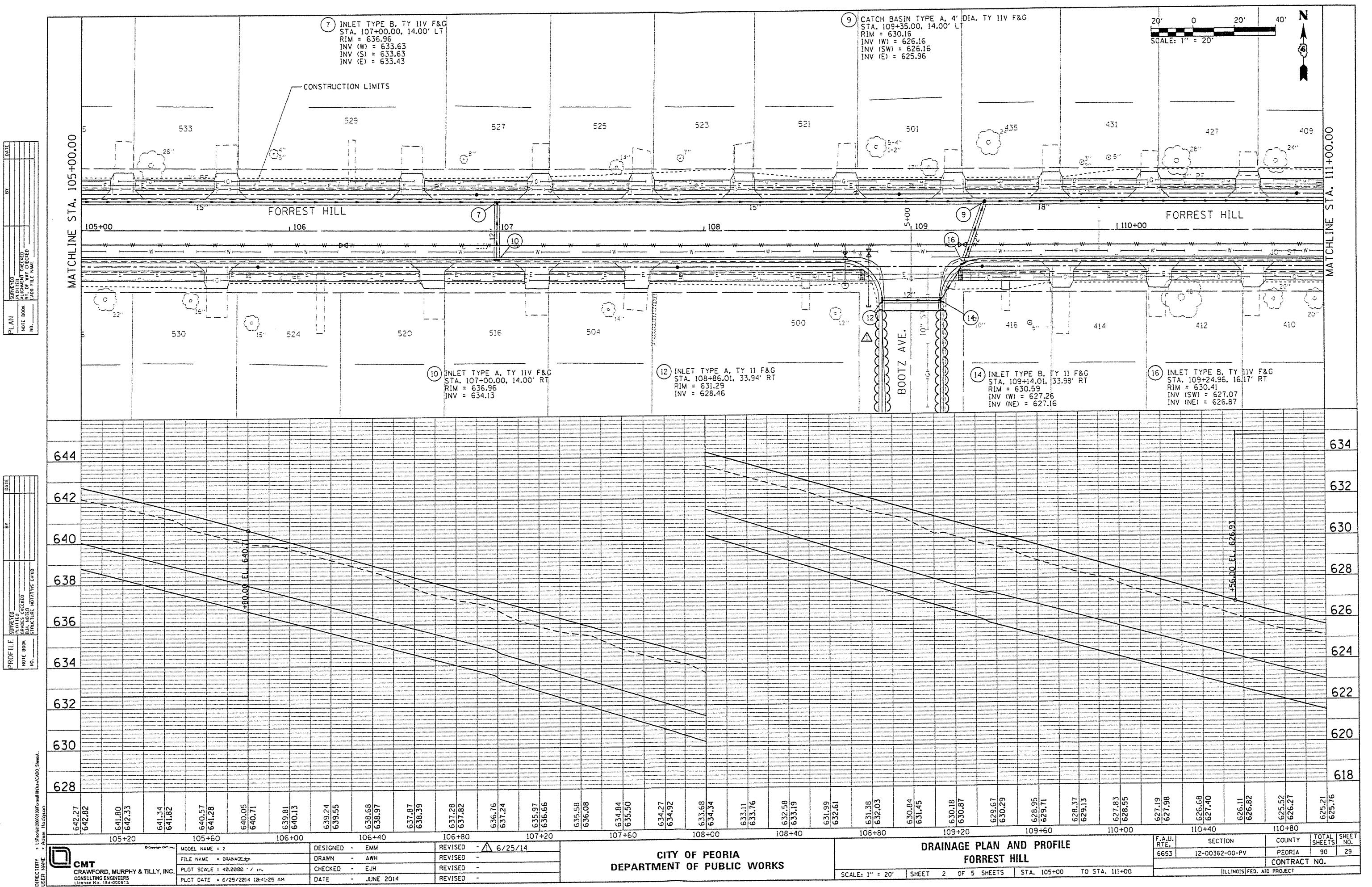
PLAN AND PROFILE  
FORREST HILL

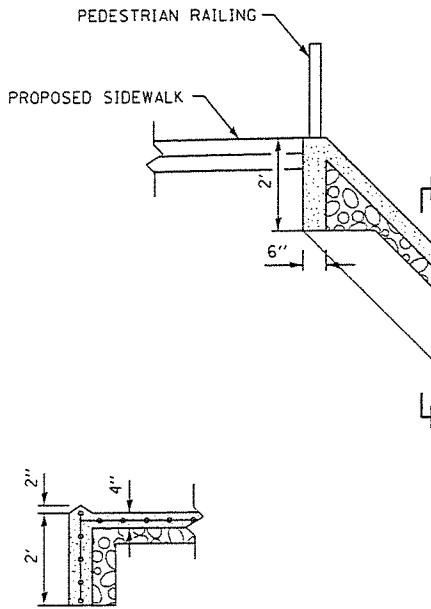
SCALE: 1" = 20' SHEET 2 OF 5 SHEETS STA. 105+00 TO STA. 111+00

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
6653	12-00362-00-PV	PEORIA	90	24
		CONTRACT NO.		

ILLINOIS FED. AID PROJECT

625.52  
626.27  
626.82  
626.11  
625.21  
625.76  
111+00



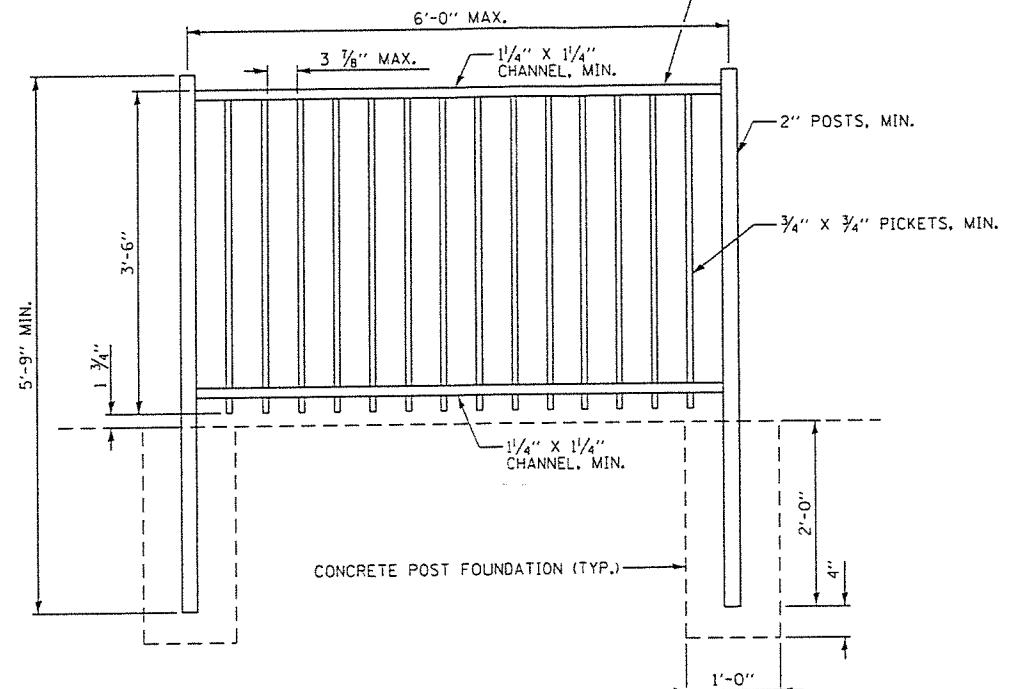


SECTION A-A

**NOTES**

1. SLOPE WALL SHALL BE REINFORCED WITH WELDED WIRE FABRIC, 6" BY 6" - W4.0, WEIGHING 58 LBS PER 100 SQFT. REINFORCEMENT SHALL BE INCIDENTAL TO THE COST OF THE WALL.
2. POROUS GRANULAR EMBANKMENT SHALL BE PLACED UNDER THE SLOPE WALL TO A MINIMUM THICKNESS OF 4".

ALUMINUM PEDESTRIAN RAILING PANEL (TYP.)  
BLACK FINISH IN COMPLIANCE WITH AAMA 2605.

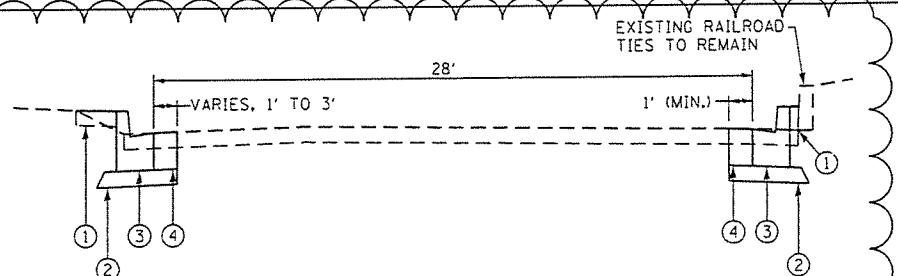


PEDESTRIAN RAILING

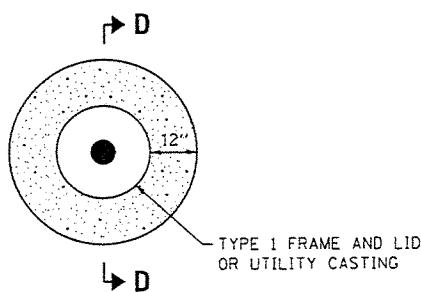
CONCRETE FOUNDATIONS SHALL BE INCLUDED IN THE UNIT PRICE FOR PEDESTRIAN RAILING.

**SLOPE WALL, SPECIAL DETAIL**

- 1 RESTORATION PER RESIDENT ENGINEER (INCIDENTAL TO CURB PLACEMENT)
- 2 CONTROLLED LOW-STRENGTH MATERIAL, 4"
- 3 CCC&G, TYPE B-6.12
- 4 INCIDENTAL HMA, 10"



**SIDE STREET CURB EXTENSION AT BOOTZ AVENUE**

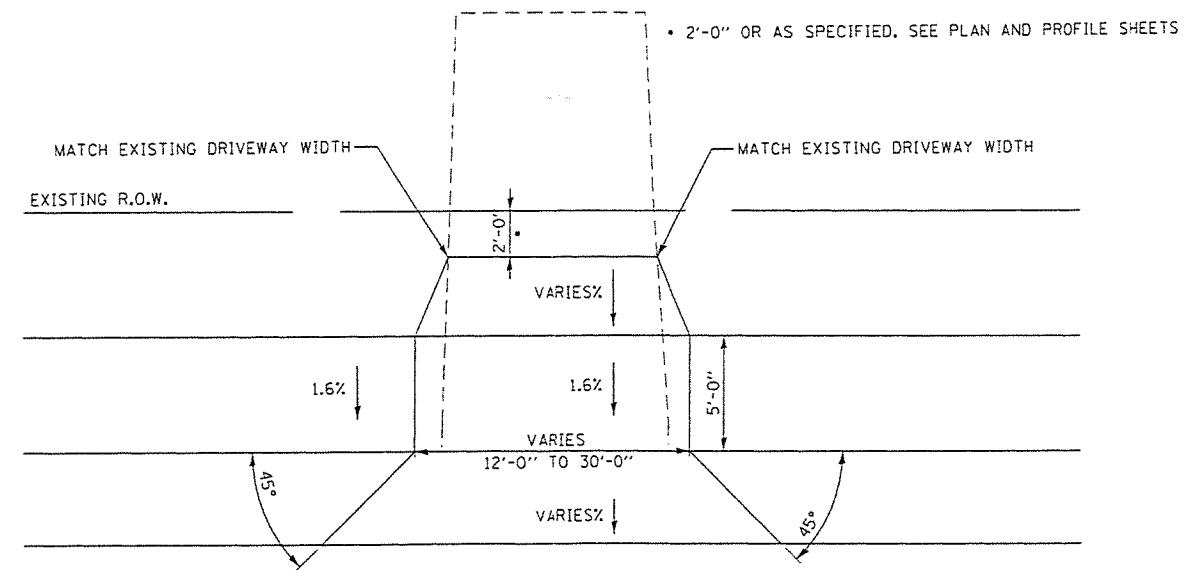


SECTION D-D

**NOTES**

1. PCC CONSTRUCTION AND PLACEMENT OF THE CASTING MAY BE DONE BEFORE OR AFTER THE HMA SURFACE IS CONSTRUCTED. IN EITHER CASE, THE JOINT BETWEEN THE PCC AND HMA SHALL BE FLAT, TIGHT AND NOT RAVELED OR IRREGULAR.
2. PCC CONSTRUCTION AROUND CASTINGS WITHIN THE ROADWAY SHALL BE COMPLETED FOR ALL NEW AND EXISTING CASTINGS FOR DRAINAGE STRUCTURES AND UTILITIES.
3. RECTANGULAR CONSTRUCTION CAN BE USED INSTEAD OF THE CIRCULAR METHOD SHOWN. 12" MINIMUM DISTANCE FROM CASTING SHALL BE PROVIDED.

**PAVEMENT CONSTRUCTION AT STORM AND UTILITY MANHOLES**



TYPICAL DRIVEWAY DETAIL



**ADDENDUM NO. 2**  
**CITY OF PEORIA**  
**FORREST HILL AVENUE PROJECT**  
**Section No. 12-00362-00-PV**  
**Letting: JULY 8, 2014 at 10:00am**

**JULY 03, 2014**

RE: **Addendum #2** for Bid Package, Forrest Hill Avenue - Sheridan Road to Knoxville Avenue, Peoria, IL

The following shall be considered part of the Contract Documents for the subject project and shall apply to all construction thereunder.

**REVISED BID DOCUMENT** (Issued with this Addendum):

- 1) Sheet 3 – REMOVE Item **BIKE LANE MICRO OVERLAY, 3 PASSES, 2,290 SQUARE YARDS.**
- 2) Sheet 11 – REMOVE Item 14 – **BIKE LANE MICRO OVERLAY, 3 PASSES** from Proposed Materials Legend and Proposed Typical Section.
- 3) Sheet 12 – REMOVE Item 14 – **BIKE LANE MICRO OVERLAY, 3 PASSES** from Proposed Materials Legend and Proposed Typical Section.
- 4) Sheet 13 – REMOVE Item 14 – **BIKE LANE MICRO OVERLAY, 3 PASSES** from Proposed Materials Legend and Proposed Typical Section.
- 5) Sheet 14 – REMOVE Item 14 – **BIKE LANE MICRO OVERLAY, 3 PASSES** from Proposed Materials Legend and Proposed Typical Section.
- 6) Sheet 15 – REMOVE Item 14 – **BIKE LANE MICRO OVERLAY, 3 PASSES** from Proposed Materials Legend and Proposed Typical Section.
- 7) Sheet 16 – REMOVE Item 14 – **BIKE LANE MICRO OVERLAY, 3 PASSES** from Proposed Materials Legend and Proposed Typical Section.
- 8) Page I-3 – Proposal Item #5 – ADD *Substantially* to ‘The Undersigned agrees to complete the work ~~within~~ Substantially working days or by November 14, 2014 unless additional time is granted in accordance with the specifications.’
- 9) Page I-4 – CHANGE Header and Footer to reflect Addendum #2.
- 10) Page I-5 - CHANGE Header and Footer to reflect Addendum #2.
- 11) Page I-6 - CHANGE Header and Footer to reflect Addendum #2.

12) Page I-6 – REMOVE Item *BIKE LANE MICRO OVERLAY, 3 PASSES , 2,290 SQUARE YARDS.*

This item is to be removed from the Plans and Specifications.

13) Page ii (Table of Contents) – REMOVE Item *BIKE LANE MICRO OVERLAY, 3 PASSES , 2,290 SQUARE YARDS.*

14) Page IV-50, DATE OF COMPLETION – CHANGE to the following: The Contractor shall schedule his operations so as to substantially complete all work roadwork and open all the roadway to traffic on or before November 14, 2014. ~~The Contractor shall note that this completion date is based on an expedited work schedule.~~

15) Pages IV-77 through IV-83: REMOVE these Pages, Bike Lane Micro Overlay is being removed from this project in its entirety.

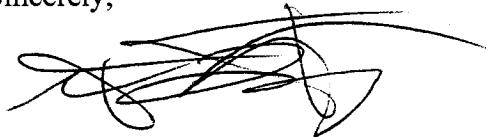
**Note: Page IV-84, Surface Removal, Variable Depth keeps its current page number, and subsequent pages stay the same as those presented in Addendum # 1.**

**Bidders shall acknowledge receipt of this addendum by inserting its number on Bid Form. Failure to do so may subject Bidder to Disqualification.**

All changes on plan sheets are clouded, in red ink, and/or crossed out.

This Addendum consists of these 2 cover sheets, seven (7) plan sheets, and fourteen (14) pages from the Specifications and Proposal Book.

Sincerely,



Stephen Letsky, P.E.  
Project Engineer

Attachments



**ADDENDUM NO. 3**  
**CITY OF PEORIA**  
**FORREST HILL AVENUE PROJECT**  
**Section No. 12-00362-00-PV**  
**Letting: JULY 10, 2014 at 10:00am**

**JULY 7, 2014**

RE: Addendum #3 for Bid Package, Forrest Hill Avenue - Sheridan Road to Knoxville Avenue, Peoria, IL

The following shall be considered part of the Contract Documents for the subject project and shall apply to all construction thereunder.

REVISED BID DOCUMENT (Issued with this Addendum):

- 1) **Page I-2 – CHANGE the DATE for Bids to be received at the office of Peoria Public Works Department from JULY 8, 2014 to JULY 10, 2014. The time will remain at 10:00 am.**

**Bidders shall acknowledge receipt of this addendum by inserting its number on Bid Form. Failure to do so may subject Bidder to Disqualification.**

This Addendum consists of this cover sheet and one (1) page from the Specifications and Proposal Book.

Sincerely,

A handwritten signature in black ink, appearing to read "Stephen Letsky, P.E." The signature is somewhat stylized and cursive.

Stephen Letsky, P.E.  
Project Engineer

Attachments

RETURN WITH BID

NOTICE TO BIDDERS

County	Peoria
Local Public Agency	City of Peoria
Section Number	12-00362-00-PV
Route	FAU 6653

Sealed proposals for the improvement described below will be received at the office of Peoria Public Works,

3505 N. Dries Lane, Peoria, IL 61604 until 10:00 AM on JULY 10, 2014  
Address Time Date

Sealed proposals will be opened and read publicly at the office of Peoria Public Works,

3505 N. Dries Lane, Peoria, IL 61604 at 10:15 AM on JULY 10, 2014  
Address Time Date

DESCRIPTION OF WORK

Name Forrest Hill Avenue Length: 2630.00 feet ( 0.50 miles)

Location Sheridan Raod to Knoxville Avenue

Proposed Improvement New sidewalk and curb and gutter along both sides, driveway pavement within the street right of way, storm sewer pipe and structures, street lights along both sides, 8" water main, and 4" HMA pavement

1. Plans and proposal forms will be available in the office of Peoria's Department of Public Works

3505 N. Dries Lane, Peoria, IL 61604  
Address

2.  Prequalification

If checked, the 2 low bidders must file within 24 hours after the letting an "Affidavit of Availability" (Form BC 57), in duplicate, showing all uncompleted contracts awarded to them and all low bids pending award for Federal, State, County, Municipal and private work. One original shall be filed with the Awarding Authority and one original with the IDOT District Office.

3. The Awarding Authority reserves the right to waive technicalities and to reject any or all proposals as provided in BLRS Special Provision for Bidding Requirements and Conditions for Contract Proposals.

4. The following BLR Forms shall be returned by the bidder to the Awarding Authority:

- BLR 12200: Local Public Agency Formal Contract Proposal
- BLR 12200a Schedule of Prices
- BLR 12230: Proposal Bid Bond (if applicable)
- BLR 12325: Apprenticeship or Training Program Certification (do not use for federally funded projects)
- BLR 12326: Affidavit of Illinois Business Office

5. The quantities appearing in the bid schedule are approximate and are prepared for the comparison of bids. Payment to the Contractor will be made only for the actual quantities of work performed and accepted or materials furnished according to the contract. The scheduled quantities of work to be done and materials to be furnished may be increased, decreased or omitted as hereinafter provided.

6. Submission of a bid shall be conclusive assurance and warranty the bidder has examined the plans and understands all requirements for the performance of work. The bidder will be responsible for all errors in the proposal resulting from failure or neglect to conduct an in depth examination. The Awarding Authority will, in no case be responsible for any costs, expenses, losses or changes in anticipated profits resulting from such failure or neglect of the bidder.

7. The bidder shall take no advantage of any error or omission in the proposal and advertised contract.

8. If a special envelope is supplied by the Awarding Authority, each proposal should be submitted in that envelope furnished by the Awarding Agency and the blank spaces on the envelope shall be filled in correctly to clearly indicate its contents. When an envelope other than the special one furnished by the Awarding Authority is used, it shall be marked to clearly indicate its contents. When sent by mail, the sealed proposal shall be addressed to the Awarding Authority at the address and in care of the official in whose office the bids are to be received. All proposals shall be filed prior to the time and at the place specified in the Notice to Bidders. Proposals received after the time specified will be returned to the bidder unopened.

9. Permission will be given to a bidder to withdraw a proposal if the bidder makes the request in writing or in person before the time for opening proposals.

RETURN WITH BID



Illinois Department  
of Transportation

Local Public Agency  
Formal Contract Proposal

PROPOSAL SUBMITTED BY

Contractor's Name

Street P.O. Box

City State Zip Code

STATE OF ILLINOIS

COUNTY OF Peoria

City of Peoria

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

FOR THE IMPROVEMENT OF

STREET NAME OR ROUTE NO. Forrest Hill Avenue (FAU 6653)

SECTION NO. 12-00362-00-PV

TYPES OF FUNDS Motor Fuel Tax

SPECIFICATIONS (required)

PLANS (required)

For Municipal Projects

Submitted/Approved/Passed

Mayor  President of Board of Trustees  Municipal Official

Date June 17, 2014

Department of Transportation

Released for bid based on limited review

AGREEMENT  
OF UNDERSTANDING

Date

For County and Road District Projects

Submitted/Approved

Highway Commissioner

Date

Submitted/Approved

County Engineer/Superintendent of Highways

Date

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

RETURN WITH BID

**NOTICE TO BIDDERS**

County	Peoria
Local Public Agency	City of Peoria
Section Number	12-00362-00-PV
Route	FAU 6653

Sealed proposals for the improvement described below will be received at the office of Peoria Public Works,  
3505 N. Dries Lane, Peoria, IL 61604 until 10:00 AM on JULY 10, 2014  
Address Time Date

Sealed proposals will be opened and read publicly at the office of Peoria Public Works,  
3505 N. Dries Lane, Peoria, IL 61604 at 10:15 AM on JULY 10, 2014  
Address Time Date

**DESCRIPTION OF WORK**

Name Forrest Hill Avenue Length: 2630.00 feet ( 0.50 miles)

Location Sheridan Road to Knoxville Avenue

Proposed Improvement New sidewalk and curb and gutter along both sides, driveway pavement within the street right of way, storm sewer pipe and structures, street lights along both sides, 8" water main, and 4" HMA pavement

1. Plans and proposal forms will be available in the office of Peoria's Department of Public Works  
3505 N. Dries Lane, Peoria, IL 61604  
Address
2.  Prequalification  
If checked, the 2 low bidders must file within 24 hours after the letting an "Affidavit of Availability" (Form BC 57), in duplicate, showing all uncompleted contracts awarded to them and all low bids pending award for Federal, State, County, Municipal and private work. One original shall be filed with the Awarding Authority and one original with the IDOT District Office.
3. The Awarding Authority reserves the right to waive technicalities and to reject any or all proposals as provided in BLRS Special Provision for Bidding Requirements and Conditions for Contract Proposals.
4. The following BLR Forms shall be returned by the bidder to the Awarding Authority:
  - a. BLR 12200: Local Public Agency Formal Contract Proposal
  - b. BLR 12200a Schedule of Prices
  - c. BLR 12230: Proposal Bid Bond (if applicable)
  - d. BLR 12325: Apprenticeship or Training Program Certification (do not use for federally funded projects)
  - e. BLR 12326: Affidavit of Illinois Business Office
5. The quantities appearing in the bid schedule are approximate and are prepared for the comparison of bids. Payment to the Contractor will be made only for the actual quantities of work performed and accepted or materials furnished according to the contract. The scheduled quantities of work to be done and materials to be furnished may be increased, decreased or omitted as hereinafter provided.
6. Submission of a bid shall be conclusive assurance and warranty the bidder has examined the plans and understands all requirements for the performance of work. The bidder will be responsible for all errors in the proposal resulting from failure or neglect to conduct an in depth examination. The Awarding Authority will, in no case be responsible for any costs, expenses, losses or changes in anticipated profits resulting from such failure or neglect of the bidder.
7. The bidder shall take no advantage of any error or omission in the proposal and advertised contract.
8. If a special envelope is supplied by the Awarding Authority, each proposal should be submitted in that envelope furnished by the Awarding Agency and the blank spaces on the envelope shall be filled in correctly to clearly indicate its contents. When an envelope other than the special one furnished by the Awarding Authority is used, it shall be marked to clearly indicate its contents. When sent by mail, the sealed proposal shall be addressed to the Awarding Authority at the address and in care of the official in whose office the bids are to be received. All proposals shall be filed prior to the time and at the place specified in the Notice to Bidders. Proposals received after the time specified will be returned to the bidder unopened.
9. Permission will be given to a bidder to withdraw a proposal if the bidder makes the request in writing or in person before the time for opening proposals.

## RETURN WITH BID

## PROPOSAL

County	Peoria
Local Public Agency	City of Peoria
Section Number	12-00362-00-PV
Route	FAU 6653

1. Proposal of \_\_\_\_\_

for the improvement of the above section by the construction of sidewalk, curb and gutter, and driveway aprons; storm sewer pipe, manholes, inlets, and catchbasins; street lights; 8" dia. watermain, fire hydrants, valves and fittings; PCC base course pavement in isolated locations and 4" HMA pavement throughout the project limits.

a total distance of 2630.00 feet, of which a distance of 2630.00 feet, ( 0.500 miles) are to be improved.

2. The plans for the proposed work are those prepared by Crawford, Murphy & Tilly, Inc. and approved by the Department of Transportation on \_\_\_\_\_
3. The specifications referred to herein are those prepared by the Department of Transportation and designated as "Standard Specifications for Road and Bridge Construction" and the "Supplemental Specifications and Recurring Special Provisions" thereto, adopted and in effect on the date of invitation for bids.
4. The undersigned agrees to accept, as part of the contract, the applicable Special Provisions indicated on the "Check Sheet for Recurring Special Provisions" contained in this proposal.
5. The undersigned agrees to complete the work within Substantially working days or by November 14, 2014 unless additional time is granted in accordance with the specifications.
6. A proposal guaranty in the proper amount, as specified in BLRS Special Provision for Bidding Requirements and Conditions for Contract Proposals, will be required. Bid Bonds will be allowed as a proposal guaranty. Accompanying this proposal is either a bid bond if allowed, on Department form BLR 12230 or a proposal guaranty check, complying with the specifications, made payable to:

Patrick Nichting \_\_\_\_\_ Treasurer of City of Peoria \_\_\_\_\_

The amount of the check is \_\_\_\_\_ ( \_\_\_\_\_ ).

7. In the event that one proposal guaranty check is intended to cover two or more proposals, the amount must be equal to the sum of the proposal guaranties, which would be required for each individual proposal. If the proposal guaranty check is placed in another proposal, it will be found in the proposal for: Section Number \_\_\_\_\_.
8. The successful bidder at the time of execution of the contract will be required to deposit a contract bond for the full amount of the award. When a contract bond is not required, the proposal guaranty check will be held in lieu thereof. If this proposal is accepted and the undersigned fails to execute a contract and contract bond as required, it is hereby agreed that the Bid Bond or check shall be forfeited to the Awarding Authority.
9. Each pay item should have a unit price and a total price. If no total price is shown or if there is a discrepancy between the product of the unit price multiplied by the quantity, the unit price shall govern. If a unit price is omitted, the total price will be divided by the quantity in order to establish a unit price.
10. A bid will be declared unacceptable if neither a unit price nor a total price is shown.
11. The undersigned submits herewith the schedule of prices on BLR 12200a covering the work to be performed under this contract.
12. The undersigned further agrees that if awarded the contract for the sections contained in the combinations on BLR 12200a, the work shall be in accordance with the requirements of each individual proposal for the multiple bid specified in the Schedule for Multiple Bids below.

## SCHEDULE OF PRICES

County Peoria  
 Local Public Agency City of Peoria  
 Section 12-00362-00-PV  
 Route FAU 6653

Addendum 2, 7/03/2014 - Removed  
 Micro Overlay 3-Pass Item

PAY ITEM	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
	Bidder's Proposal for making Entire Improvements				
20200100	EARTH EXCAVATION	CU YD	1,204		
20700220	POROUS GRANULAR EMBANKMENT	CU YD	1,255		
20800150	TRENCH BACKFILL	CU YD	317		
20900110	POROUS GRANULAR BACKFILL	CU YD	554		
21101600	TOPSOIL FURNISH AND PLACE, VARIABLE DEPTH	SQ YD	2,741		
25200100	SODDING	SQ YD	1,025		
25200110	SODDING, SALT TOLERANT	SQ YD	1,716		
28000400	PERIMETER EROSION BARRIER	FOOT	398		
28000500	INLET AND PIPE PROTECTION	EACH	40		
28200200	FILTER FABRIC	SQ YD	220		
31101000	<u>SUBBASE GRANULAR MATERIAL, TYPE B</u>	TON	213		
35300200	PORTLAND CEMENT CONCRETE BASE COURSE 7"	SQ YD	822		
35400100	PORTLAND CEMENT CONCRETE BASE COURSE WIDENING 6"	SQ YD	766		
40201000	AGGREGATE FOR TEMPORARY ACCESS	TON	385		
40600115	POLYMERIZED BITUMINOUS MATERIALS (PRIME COAT)	GALLON	1,625		
40600827	POLYMERIZED LEVELING BINDER (MACHINE METHOD), IL-4.75, N50	TON	178		
40603214	POLYMERIZED HOT-MIX ASPHALT BINDER COURSE, IL-12.5, N70	TON	1,555		
40603565	POLYMERIZED HOT-MIX ASPHALT SURFACE COURSE, MIX "E", N70	TON	707		
40800050	INCIDENTAL HOT-MIX ASPHALT SURFACING	TON	65		
42001000	HIGH-EARLY-STRENGTH PORTLAND CONCRETE CEMENT, 9"	SQ YD	7		
42300200	PORTLAND CEMENT CONCRETE DRIVEWAY PAVEMENT, 6 INCH	SQ YD	1,063		
42300400	PORTLAND CEMENT CONCRETE DRIVEWAY PAVEMENT, 8 INCH	SQ YD	315		
42400100	PORTLAND CEMENT CONCRETE SIDEWALK, 4 INCH	SQ FT	22,592		
42400800	DETECTABLE WARNINGS	SQ FT	246		
44000100	PAVEMENT REMOVAL	SQ YD	3,096		
44000200	DRIVEWAY PAVEMENT REMOVAL	SQ YD	1,126		
44000600	SIDEWALK REMOVAL	SQ FT	24,487		
44201403	CLASS C PATCHES, TYPE II, 14 INCH	SQ YD	131		
50600200	PAINTING STEEL RAILING	FOOT	43		
50900805	PEDESTRIAN RAILING	FOOT	198		
55100500	STORM SEWER REMOVAL 12"	FOOT	27		
55100700	STORM SEWER REMOVAL 15"	FOOT	16		
55100900	STORM SEWER REMOVAL 18"	FOOT	140		
59300100	CONTROLLED LOW-STRENGTH MATERIAL	CU YD	482		
60107800	PIPE UNDERDRAINS 8"	FOOT	127		
60108000	PIPE UNDERDRAINS 12"	FOOT	59		
60201110	CATCH BASINS, TYPE A, 4'-DIAMETER, TYPE 11V FRAME AND GRATE	EACH	4		

**SCHEDULE OF PRICES**

County Peoria  
 Local Public Agency City of Peoria  
 Section 12-00362-00-PV  
 Route FAU 6653

Addendum 2, 7/03/2014 - Removed  
 Micro Overlay 3-Pass Item

PAY ITEM	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
60204805	CATCH BASINS, TYPE A, 5'-DIAMETER, TYPE 11 FRAME AND GRATE	EACH	1		
60206600	CATCH BASINS, TYPE B, TYPE 7 GRATE	EACH	1		
60218399	MANHOLES, TYPE A, 4'-DIAMETER, TYPE 1 FRAME, OPEN LID	EACH	1		
60218400	MANHOLES, TYPE A, 4'-DIAMETER, TYPE 1 FRAME, CLOSED LID	EACH	1		
60221100	MANHOLES, TYPE A, 5'-DIAMETER, TYPE 1 FRAME, CLOSED LID	EACH	1		
60221700	MANHOLES, TYPE A, 5'-DIAMETER, TYPE 8 GRATE	EACH	2		
60222000	MANHOLES, TYPE A, 5'-DIAMETER, TYPE 11 FRAME AND GRATE	EACH	3		
60236800	INLETS, TYPE A, TYPE 11 FRAME AND GRATE	EACH	8		
60236825	INLETS, TYPE A, TYPE 11V FRAME AND GRATE	EACH	2		
60240301	INLETS, TYPE B, TYPE 8 GRATE	EACH	1		
60240310	INLETS, TYPE B, TYPE 11 FRAME AND GRATE	EACH	5		
60240312	INLETS, TYPE B, TYPE 11V FRAME AND GRATE	EACH	7		
60260100	INLETS TO BE ADJUSTED	EACH	2		
60261000	INLETS TO BE ADJUSTED WITH NEW TYPE 8 GRATE	EACH	1		
60500040	REMOVING MANHOLES	EACH	1		
60500060	REMOVING INLETS	EACH	9		
60603800	COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.12	FOOT	5,557		
60604400	COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.18	FOOT	111		
70300100	SHORT TERM PAVEMENT MARKING	FOOT	5,280		
78000100	THERMOPLASTIC PAVEMENT MARKING - LETTERS AND SYMBOLS	SQ FT	357		
78000200	THERMOPLASTIC PAVEMENT MARKING - LINE 4"	FOOT	7,047		
78000400	THERMOPLASTIC PAVEMENT MARKING - LINE 6"	FOOT	884		
78000600	THERMOPLASTIC PAVEMENT MARKING - LINE 12"	FOOT	672		
78000650	THERMOPLASTIC PAVEMENT MARKING - LINE 24"	FOOT	153		
80400100	ELECTRIC SERVICE INSTALLATION	EACH	1		
81028350	UNDERGROUND CONDUIT, PVC, 2" DIA.	FOOT	4,989		
81500110	GULFBOX JUNCTION, CAST IRON	EACH	2		
81500130	GULFBOX JUNCTION REMOVAL	EACH	17		
81702120	ELECTRIC CABLE IN CONDUIT, 600V (XLP-TYPE USE) 1/C NO. 8	FOOT	24,115		
82500350	LIGHTING CONTROLLER, BASE MOUNTED, 240VOLT, 100AMP	EACH	1		
84200600	REMOVAL OF LIGHTING UNIT, NO SALVAGE	EACH	26		
88600100	DETECTOR LOOP, TYPE I	FOOT	242		
89500400	RELOCATE EXISTING PEDESTRIAN PUSH-BUTTON	EACH	3		
89502376	REBUILD EXISTING HANDHOLE	EACH	4		
X2020410	EARTH EXCAVATION (SPECIAL)	CU YD	554		
X0326440	SURFACE REMOVAL, VARIABLE DEPTH (SPECIAL)	SQ YD	5,239		
X4421000	PARTIAL DEPTH PATCHING	TON	34		
X7010216	TRAFFIC CONTROL AND PROTECTION, (SPECIAL)	L SUM	1		

**SCHEDULE OF PRICES**

County Peoria  
 Local Public Agency City of Peoria  
 Section 12-00362-00-PV  
 Route FAU 6653

Addendum 2, 7/03/2014 - Removed  
 Micro Overlay 3-Pass Item

PAY ITEM	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
Z0007126	HANDRAIL REMOVAL	FOOT	105		
Z0013798	CONSTRUCTION LAYOUT	L SUM	1		
Z0056608	STORM SEWER (WATER MAIN REQUIREMENTS) 12 INCH	FOOT	887		
Z0056610	STORM SEWER (WATER MAIN REQUIREMENTS) 15 INCH	FOOT	857		
Z0056612	STORM SEWER (WATER MAIN REQUIREMENTS) 18 INCH	FOOT	233		
Z0056616	STORM SEWER (WATER MAIN REQUIREMENTS) 24 INCH	FOOT	281		
Z0065702	SLOPE WALL, SPECIAL	SQ YD	76		
	PARTIAL DEPTH REMOVAL, VARIABLE DEPTH	SY	75		
	PIPE UNDERDRAINS 24"	FOOT	95		
	LED STREET LIGHT POLE AND LUMINAIRE (COMPLETE)	EACH	29		
	<del>BIKE LANE MICRO-OVERLAY, 3-PASS</del>	<del>SQ YD</del>	<del>2,200</del>		
	WATERMAIN, 8" DIAMETER, DUCTILE IRON, OPEN CUT	L.F.	2,567		
	WATERMAIN, 6" DIAMETER, DUCTILE IRON, OPEN CUT	L.F.	211		
	16 INCH PVC SDR 21 CASING FOR WATER/SEWER CROSSING	L.F.	22		
	16 INCH STEEL CASING PIPE FOR WATERMAIN (0.250 INCH WALL THICKNESS)	L.F.	24		
	GATE VALVE AND BOX, 8" DIAMETER	EACH	11		
	GATE VALVE AND BOX, 6" DIAMETER	EACH	6		
	TAPPING SLEEVE AND TAPPING GATE VALVE, 8" DIAMETER	EACH	1		
	TAPPING SLEEVE AND TAPPING GATE VALVE, 6" DIAMETER	EACH	2		
	DUCTILE IRON FITTINGS	LBS.	1,220		
	FIRE HYDRANT (3-WAY)	EACH	6		
	FIRE HYDRANT REMOVAL	EACH	6		
	SELECT GRANULAR BACKFILL	C.Y.	554		
	PAVEMENT REMOVAL FOR WATERMAIN	SY	2,080		
	CONCRETE PAVEMENT PLACEMENT	SY	2,080		
	WATERMAIN TESTING AND DISINFECTION	L.S.	1		

## CONTRACTOR CERTIFICATIONS

County	Peoria
Local Public Agency	City of Peoria
Section Number	12-00362-00-PV
Route	FAU 6653

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.

- Debt Delinquency.** The bidder or contractor or subcontractor, respectively, certifies that it is not delinquent in the payment of any tax administered by the Department of Revenue unless the individual or other entity is contesting, in accordance with the procedures established by the appropriate revenue Act, its liability for the tax or the amount of tax. Making a false statement voids the contract and allows the Department to recover all amounts paid to the individual or entity under the contract in a civil action.
- Bid-Rigging or Bid Rotating.** The bidder or contractor or subcontractor, respectively, certifies that it is not barred from contracting with the Department by reason of a violation of either 720 ILCS 5/33E-3 or 720 ILCS 5/33E-4.

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

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

- Bribery.** The bidder or contractor or subcontractor, respectively, certifies that it has not been convicted of bribery or attempting to bribe an officer or employee of the State of Illinois or any unit of local government, nor has the firm made an admission of guilt of such conduct which is a matter of record, nor has an official, agent, or employee of the firm committed bribery or attempted bribery on behalf of the firm and pursuant to the direction or authorization of a responsible official of the firm.
- Interim Suspension or Suspension.** The bidder or contractor or subcontractor, respectively, certifies that it is not currently under a suspension as defined in Subpart I of Title 44 Subtitle A Chapter III Part 6 of the Illinois Administrative Code. Furthermore, if suspended prior to completion of this work, the contract or contracts executed for the completion of this work may be cancelled.

**RETURN WITH BID**

**SIGNATURES**

County	Peoria
Local Public Agency	City of Peoria
Section Number	12-00362-00-PV
Route	FAU 6653

(If an individual)

Signature of Bidder \_\_\_\_\_

Business Address \_\_\_\_\_  
\_\_\_\_\_

(If a partnership)

Firm Name \_\_\_\_\_

Signed By \_\_\_\_\_

Business Address \_\_\_\_\_  
\_\_\_\_\_

Inset Names and Addresses of All Partners



(If a corporation)

Corporate Name \_\_\_\_\_

Signed By \_\_\_\_\_  
President

Business Address \_\_\_\_\_  
\_\_\_\_\_

Inset Names of Officers

President \_\_\_\_\_  
Secretary \_\_\_\_\_  
Treasurer \_\_\_\_\_

Attest: \_\_\_\_\_  
Secretary



**Illinois Department  
of Transportation**

**Local Agency  
Proposal Bid Bond**

**RETURN WITH BID**

**PAPER BID BOND**

Route	FAU 6653
County	Peoria
Local Agency	City of Peoria
Section	12-00362-00-PV

WE \_\_\_\_\_ as PRINCIPAL,

and \_\_\_\_\_ as SURETY,

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

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

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

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

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

**Principal**

(Company Name)

(Company Name)

By:

(Signature and Title)

By:

(Signature and Title)

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

**Surety**

By:

(Signature of Attorney-in-Fact)

(Name of Surety)

STATE OF ILLINOIS,

COUNTY OF \_\_\_\_\_

I, \_\_\_\_\_, a Notary Public in and for said county,  
do hereby certify that \_\_\_\_\_

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

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

Given under my hand and notarial seal this \_\_\_\_\_ day of \_\_\_\_\_

My commission expires \_\_\_\_\_

(Notary Public)

**ELECTRONIC BID BOND**

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

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

--	--	--	--	--	--	--	--

Electronic Bid Bond ID Code

(Company/Bidder Name)

(Signature and Title)

Date



**Illinois Department  
of Transportation**

**Apprenticeship or Training  
Program Certification**

**Return with Bid**

Route	FAU 6653
County	Peoria
Local Agency	City of Peoria
Section	12-00362-00-PV

***All contractors are required to complete the following certification:***

- For this contract proposal or for all groups in this deliver and install proposal.
- For the following deliver and install groups in this material proposal:

---

---

---

Illinois Department of Transportation policy, adopted in accordance with the provisions of the Illinois Highway Code, requires this contract to be awarded to the lowest responsive and responsible bidder. The award decision is subject to approval by the Department. In addition to all other responsibility factors, this contract or deliver and install proposal requires all bidders and all bidders' subcontractors to disclose participation in apprenticeship or training programs that are (1) approved by and registered with the United States Department of Labor's Bureau of Apprenticeship and Training, and (2) applicable to the work of the above indicated proposals or groups. Therefore, all bidders are required to complete the following certification:

- I. Except as provided in paragraph IV below, the undersigned bidder certifies that it is a participant, either as an individual or as part of a group program, in an approved apprenticeship or training program applicable to each type of work or craft that the bidder will perform with its own employees.
- II. The undersigned bidder further certifies for work to be performed by subcontract that each of its subcontractors submitted for approval either (A) is, at the time of such bid, participating in an approved, applicable apprenticeship or training program; or (B) will, prior to commencement of performance of work pursuant to this contract, establish participation in an approved apprenticeship or training program applicable to the work of the subcontract.
- III. The undersigned bidder, by inclusion in the list in the space below, certifies the official name of each program sponsor holding the Certificate of Registration for all of the types of work or crafts in which the bidder is a participant and that will be performed with the bidder's employees. Types of work or craft that will be subcontracted shall be included and listed as subcontract work. The list shall also indicate any type of work or craft job category for which there is no applicable apprenticeship or training program available.

---

---

---

---

- IV. Except for any work identified above, any bidder or subcontractor that shall perform all or part of the work of the contract or deliver and install proposal solely by individual owners, partners or members and not by employees to whom the payment of prevailing rates of wages would be required, check the following box, and identify the owner/operator workforce and positions of ownership.

---

---

---

---

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. The bidder is responsible for making a complete report and shall make certain that each type of work or craft job category that will be utilized on the project is accounted for and listed. The Department at any time before or after award may require the production of a copy of each applicable Certificate of Registration issued by the United States Department of Labor evidencing such participation by the contractor and any or all of its subcontractors. In order to fulfill the participation requirement, it shall not be necessary that any 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 or deliver and install proposal.

Bidder: \_\_\_\_\_

By: \_\_\_\_\_

(Signature)

Address: \_\_\_\_\_

Title: \_\_\_\_\_



## Illinois Department of Transportation

## Affidavit of Illinois Business Office

County Peoria  
Local Public Agency City of Peoria  
Section Number 12-00362-00-PV  
Route FAU 6653

I, \_\_\_\_\_ of \_\_\_\_\_, \_\_\_\_\_, (Name of Affiant) (City of Affiant) (State of Affiant)

being first duly sworn upon oath, states as follows:

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

(Signature)

(Print Name of Affiant)

This instrument was acknowledged before me on

day of , .

(SEAL)

(Signature of Notary Public)

STATE OF ILLINOIS  
CITY OF PEORIA

**PEORIA PROPOSAL CONDITIONS**

1. The undersigned certifies that it is not delinquent in the payment of any indebtedness, tax, fee or fine owed to the City of Peoria, or in the payment of any tax administered by the Illinois Department of Revenue, and is in compliance with the terms and conditions of Sec. 10-109 of the Peoria City Code and 65 ILCS 5/11-42.1-1.
2. The undersigned firm certifies that it has not been convicted of bribery or attempting to bribe an officer or employee of the City of Peoria, nor has the firm made an admission of guilt of such conduct which is a matter of record, nor has an official, agent, or employee of the firm committed bribery or attempted bribery on behalf of the firm and pursuant to the direction or authorization of a responsible official of the firm. The undersigned firm further certifies that it has not been barred from bidding by the Federal, State or local governments and has not been suspended or debarred from receiving federal funding.
3. **EMPLOYEE/EMPLOYMENT RESTRICTIONS – THE CONTRACTOR**, (hereinafter referred to as “SERVICE PROVIDER”) agrees, as a condition of accepting this contract with the City of Peoria, that, for a period of one (1) year following completion of this contract, it shall be prohibited from hiring, directly or indirectly, any City employee or official who was involved, directly or indirectly in: (1) the selection and/or recommendation to select the SERVICE PROVIDER for performance of this contract; (2) coordinating the efforts of the SERVICE PROVIDER in the consummation or completion of this contract; or (3) monitoring or determining the performance of the SERVICE PROVIDER. The SERVICE PROVIDER further acknowledges and agrees that, upon the City’s determination that a violation of this provision has occurred, the penalty imposed, at the sole discretion of the City, may include one or more of the following: (1) cancellation of any other contract(s) between the City of Peoria and the SERVICE PROVIDER; (2) disqualification of the SERVICE PROVIDER from bidding or being awarded future contracts with the City of Peoria for a period of two [2] years; and/or (3) payment of liquidated damages to the City of Peoria in the amount of TWENTY FIVE THOUSAND DOLLARS (\$25,000.00). *This provision does not apply to any City employee involved in the 2011-12 reduction in force; nor does it apply to parties taking the Early Retirement Incentive offered by the city from November 1, 2011 through November 1, 2012.*
4. Each Bidder must be prequalified with the Illinois Department of Transportation to perform the type of construction work necessary for the project. Bidders shall include a copy of their Illinois Department of Transportation “Certificate of Eligibility” with their bid.
5. Contractor to construct the water main must be approved by Illinois American to perform such work.

6. EEO CERTIFICATION\* (Check one):

We are presently applying for the EEO Certification. Employer Report Form (Form CC-1) is completed and enclosed.

Presently, we have the Employer Report Form (Form CC-1) on file with the City of Peoria, Office of Equal Opportunity and have a current Certificate of Compliance Number.

Certificate of Compliance Number: \_\_\_\_\_

*\*Please note there is a \$50.00 processing fee for new and renewal certification requests.*

7. Accompanying this proposal is a bid bond, certified check, or cashier's check complying with the requirements of the Specifications, made payable to the City Treasurer of the City of Peoria, Illinois. If this proposal is accepted and the undersigned fails to execute a contract and contract bond as required, it is hereby agreed that the check shall be forfeited to the awarding authority.

The amount of the check or draft is \$\_\_\_\_\_.

**If Bid Bond is not used, attach Cashier's Check or Certified Check Here**



**Illinois Department  
of Transportation**

**Local Public Agency  
Formal Contract**

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

**STATE OF ILLINOIS**

COUNTY Peoria

City of Peoria

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

FOR THE IMPROVEMENT OF

STREET NAME OR ROUTE Forrest Hill Avenue (FAU 6653)

SECTION NO. 12-00362-00-PV

TYPES OF FUNDS Motor Fuel Tax

SPECIFICATIONS (required)

PLANS (required)

CONTRACT BOND (when required)

**For Municipal Projects**  
Submitted/Approved/Passed

Mayor  President of Board of Trustees  Municipal Official

Date

**Department of Transportation**  
 Concurrence in approval of award

Regional Engineer

Date

**For County and Road District Projects**  
Submitted/Approved

Highway Commissioner

Date

Submitted/Approved

County Engineer/Superintendent of Highways

Date

County	Peoria
Local Public Agency	City of Peoria
Section Number	12-00362-00-PV
Route	FAU 6653

1. THIS AGREEMENT, made and concluded the \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_,  
 between the City of Peoria  
 acting by and through its City Council \_\_\_\_\_ known as the party of the first part, and  
 \_\_\_\_\_ his/their executors, administrators, successors or assigns,  
 known as the party of the second part.
2. Witnesseth: That for and in consideration of the payments and agreements mentioned in the Proposal hereto attached, to be made and performed by the party of the first part, and according to the terms expressed in the Bond referring to these presents, the party of the second part agrees with said party of the first part at his/their own proper cost and expense to do all the work, furnish all materials and all labor necessary to complete the work in accordance with the plans and specifications hereinafter described, and in full compliance with all of the terms of this agreement and the requirements of the Engineer under it.
3. And it is also understood and agreed that the LPA Formal Contract Proposal, Special Provisions, Affidavit of Illinois Business Office, Apprenticeship or Training Program Certification, and Contract Bond hereto attached, and the Plans for Section 12-00362-00-PV, in Peoria, Illinois,  
 approved by the Illinois Department of Transportation on \_\_\_\_\_, are essential documents of this  
 Date  
 contract and are a part hereof.
4. IN WITNESS WHEREOF, The said parties have executed these presents on the date above mentioned.

Attest: \_\_\_\_\_ The \_\_\_\_\_ of \_\_\_\_\_  
 \_\_\_\_\_ Clerk By \_\_\_\_\_  
 \_\_\_\_\_ (Seal) \_\_\_\_\_  
 \_\_\_\_\_ Party of the First Part  
 \_\_\_\_\_ (If a Corporation)

Corporate Name \_\_\_\_\_  
 By \_\_\_\_\_  
 \_\_\_\_\_ President \_\_\_\_\_  
 \_\_\_\_\_ Party of the Second Part  
 \_\_\_\_\_ (If a Co-Partnership)

Attest: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_ Secretary \_\_\_\_\_

Partners doing Business under the firm name of \_\_\_\_\_

\_\_\_\_\_ Party of the Second Part

\_\_\_\_\_ (If an individual)

\_\_\_\_\_ Party of the Second Part



**Illinois Department  
of Transportation**

**Contract Bond**

Route	<u>FAU 6653</u>
County	<u>Peoria</u>
Local Agency	<u>City of Peoria</u>
Section	<u>12-00362-00-PV</u>

We, \_\_\_\_\_

a/an)  Individual  Co-partnership  Corporation organized under the laws of the State of \_\_\_\_\_,  
as PRINCIPAL, and \_\_\_\_\_

as SURETY,

are held and firmly bound unto the above Local Agency (hereafter referred to as "LA") in the penal sum of \_\_\_\_\_

Dollars ( \_\_\_\_\_ ), lawful money of the

United States, well and truly to be paid unto said LA, for the payment of which we bind ourselves, our heirs, executors, administrators, successors, jointly to pay to the LA this sum under the conditions of this instrument.

WHEREAS THE CONDITION OF THE FOREGOING OBLIGATION IS SUCH that, the said Principal has entered into a written contract with the LA acting through its awarding authority for the construction of work on the above section, which contract is hereby referred to and made a part hereof, as if written herein at length, and whereby the said Principal has promised and agreed to perform said work in accordance with the terms of said contract, and has promised to pay all sums of money due for any labor, materials, apparatus, fixtures or machinery furnished to such Principal for the purpose of performing such work and has further agreed to pay all direct and indirect damages to any person, firm, company or corporation suffered or sustained on account of the performance of such work during the time thereof and until such work is completed and accepted; and has further agreed that this bond shall inure to the benefit of any person, firm, company or corporation to whom any money may be due from the Principal, subcontractor or otherwise for any such labor, materials, apparatus, fixtures or machinery so furnished and that suit may be maintained on such bond by any such person, firm, company or corporation for the recovery of any such money.

NOW THEREFORE, if the said Principal shall well and truly perform said work in accordance with the terms of said contract, and shall pay all sums of money due or to become due for any labor, materials, apparatus, fixtures or machinery furnished to him for the purpose of constructing such work, and shall commence and complete the work within the time prescribed in said contract, and shall pay and discharge all damages, direct and indirect, that may be suffered or sustained on account of such work during the time of the performance thereof and until the said work shall have been accepted, and shall hold the LA and its awarding authority harmless on account of any such damages and shall in all respects fully and faithfully comply with all the provisions, conditions and requirements of said contract, then this obligation to be void; otherwise to remain in full force and effect.

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**

\_\_\_\_\_  
(Company Name)

\_\_\_\_\_  
(Company Name)

By: \_\_\_\_\_  
(Signature & Title)

By: \_\_\_\_\_  
(Signature & Title)

Attest: \_\_\_\_\_  
(Signature & Title)

Attest: \_\_\_\_\_  
(Signature & Title)

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

STATE OF ILLINOIS,

COUNTY OF \_\_\_\_\_

I, \_\_\_\_\_, a Notary Public in and for said county, do hereby certify that

\_\_\_\_\_  
(Insert names of individuals signing on behalf of PRINCIPAL)

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

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

My commission expires \_\_\_\_\_

\_\_\_\_\_  
Notary Public

**(SEAL)**

**SURETY**

\_\_\_\_\_  
(Name of Surety)

\_\_\_\_\_  
(Signature of Attorney-in-Fact)

STATE OF ILLINOIS.

**(SEAL)**

COUNTY OF \_\_\_\_\_

I, \_\_\_\_\_, a Notary Public in and for said county, do hereby certify that

\_\_\_\_\_  
(Insert names of individuals signing on behalf of SURETY)

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

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

My commission expires \_\_\_\_\_

\_\_\_\_\_  
Notary Public

**(SEAL)**

Approved this \_\_\_\_\_ day of \_\_\_\_\_, A.D. \_\_\_\_\_

Attest:

\_\_\_\_\_  
(Awarding Authority)

Clerk

\_\_\_\_\_  
(Chairman/Mayor/President)



# Illinois Department of Transportation

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

## Affidavit of Availability For the Letting of \_\_\_\_\_

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

### Part I. Work Under Contract

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

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

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

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

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

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

**Part III. Work Subcontracted to Others.**

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

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

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

Subscribed and sworn to before me

this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_ Type or Print Name \_\_\_\_\_ Officer or Director \_\_\_\_\_ Title \_\_\_\_\_

Signed \_\_\_\_\_

Notary Public \_\_\_\_\_

My commission expires \_\_\_\_\_

Company \_\_\_\_\_

(Notary Seal)

Address \_\_\_\_\_



## CITY OF PEORIA SUBCONTRACTOR UTILIZATION STATEMENT

**Section I (select all that apply)**

- MBE/WBE Subcontractor(s) will be utilized on this project  
 Non MBE/WBE Subcontractor(s) will be utilized on this project

**Section II  
PRIME CONTRACTOR**

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Phone: \_\_\_\_\_

Contact Person: \_\_\_\_\_

Email: \_\_\_\_\_

**PROJECT**

Name: \_\_\_\_\_

Total Contract Value: \_\_\_\_\_

**Section III**

Subcontractor Name	MBE, WBE or Non M/WBE	Amount	% of Total Contract	Scope of Work
<b>TOTALS</b>				

*\*If more than five firms are utilized, please copy the form and attach the additional information.*

**Section IV**

The City of Peoria is committed to promoting equal opportunity and has established the following subcontractor utilization goals for city funded construction projects: 10% MBE and 5% WBE. Prime Contractors have an obligation to make a good faith effort to advance the city's commitment to increase diversity among the firms working on city construction projects.

This form must be completed and submitted with bid proposals. ALL subcontractors intended for use on this project shall be listed in the columns above; along with the total amount to be paid to the subcontractors; percentage of total contract; and scope of work. If for whatever reason the prime contractor has to utilize a subcontractor not listed above, they must submit a Notification of Change in Participation.

The undersigned certifies that the information included herein is true and correct; the subcontractors listed above have agreed to perform the scope of work described. The undersigned further certifies that it has no controlling, dominating or conflict of interest in any of the listed subcontractors.

---

Signature of Prime Contractor

---

Date

For Office Use Only  
Reviewed by: \_\_\_\_\_



## CITY OF PEORIA M/WBE PARTICIPATION WAIVER REQUEST

**PRIME CONTRACTOR**

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Phone: \_\_\_\_\_

Contact Person: \_\_\_\_\_

**PROJECT**

Name: \_\_\_\_\_

Address: \_\_\_\_\_

We hereby request to waive all of the MBE and WBE participation goals on the above named project and self-perform all work for the following reason(s). The firm further affirms that the stated reasons and documents provided are true and correct and not misleading: **(CHECK ALL THAT APPLY. SPECIFIC SUPPORTING DOCUMENTATION MUST BE SUBMITTED WHERE INDICATED.)**

1. No MBEs/WBEs responded to our invitation to bid. \_\_\_\_\_

2. No subcontracting opportunities exist. (Attach explanation) \_\_\_\_\_

3. The award of subcontract(s) is impracticable. (Attach explanation) \_\_\_\_\_

SIGNED: \_\_\_\_\_ DATE: \_\_\_\_\_  
(Company Official)

**FOR OFFICE USE ONLY**

APPROVED

DISAPPROVED

REVIEWED BY \_\_\_\_\_

DATE \_\_\_\_\_

TABLE OF CONTENTS

I - PROPOSAL / CONTRACT

LPA Formal Contract Proposal – BLR 12200	I – 1
Local Agency Proposal Bid Bond – BLR 12230	I – 9
Apprenticeship or Training Program Certification – BLR 12325	I – 10
Affidavit of Illinois Business Office – BLR 12326	I – 12
Peoria Proposal Conditions	I – 13
LPA Formal Contract – BLR 123320	I – 15
Contract Bond – BLR 12321	I – 17
Affidavit of Availability – BC 57	I – 19
Subcontractor Utilization Statement	I – 21
M/WBE Participation Waiver Request	I – 22
TABLE OF CONTENTS	i - iii

II – GENERAL CONDITIONS

Project Description	II – 1
Guarantee Period	II – 1
Public Information Meeting	II – 1
Engineer and Resident Engineer	II – 2
Property Owner Considerations	II – 2
Status of Utilities	II – 2
Signs within the Right of Way	II – 3
Responsibility for Damage Claims	II – 3
Phasing of Project	II – 4
Contractor's Insurance	II – 4
Proof of Carriage of Insurance	II – 6
Substance Abuse Prevention Program	II – 6
Certified Payroll Requirements	II – 6
Prevailing Wage Provision	II – 7
NPDES Permit	II – 13
SWPPP (BDE 2342)	II – 14

III – EQUAL OPPORTUNITY REQUIREMENTS

EEO Contract Compliance Clause	III – 1
Requirements for Good Faith Efforts	III – 4
Human Rights Act	III – 11

IV – SPECIAL PROVISIONS

Index for Supplemental Specifications	IV – 1
Check Sheet for Recurring Special Provisions	IV – 3
Project Special Provisions	
Sequence of Construction	IV – 5
Traffic Control & Protection	IV – 5
Cutting Existing Pavements, Sidewalks, and Curb & Gutter	IV – 6
Protection of Existing Trees	IV – 6
Abandoned Existing Storm Sewer Pipes	IV – 7
Salvageable Materials	IV – 7
BDE Special Provisions	
Bituminous Material Cost Adjustments	IV – 8

Concrete Gutter, Curb, Median, and Paved Ditch	IV – 11
Concrete Mix Design – Department Provided	IV – 12
<b>Concrete Claims</b>	
Friction Aggregate	IV – 13
Granular Materials	IV – 16
Hot-Mix Asphalt – Density Testing of Longitudinal Joints	IV – 17
LRFD Storm Sewer Burial Tables	IV – 18
Pavement Markings for Bike Symbol	IV – 28
Pavement Patching	IV – 29
Portland Cement Concrete Equipment	IV – 30
Portland Cement Concrete Partial Depth Hot-Mix Asphalt Patching	IV – 31
<b>Progress Payments</b>	
Quality Control/Quality Assurance of Concrete Mixtures	IV – 34
<b>Removal and Disposal of Regulated Substances</b>	
Removal and Disposal of Surplus Materials	IV – 39
Warm Mix Asphalt	IV – 40
<b>Wet Reflective Thermoplastic Pavement Marking</b>	
<b>BLRS Special Provisions</b>	
<u>Bidding Requirements and Conditions for Contract Proposals</u>	IV – 44
<u>Wages of Employees on Public Works</u>	IV – 49
District 4 Special Provisions	
Utilities – Locations/Information on Plans	IV – 50
Locations of Underground State Maintained Facilities	IV – 50
Date of Completion	IV – 50
Subbase Granular Material	IV – 50
Anti-Strip Additive for Hot-Mix Asphalt	IV – 51
Hot-Mix Asphalt – Prime Coat	IV – 51
Protection of Frames & Lids of Utility Structures	IV – 54
Storm Sewer, (Water Main Quality Pipe)	IV – 55
Detector Loops, Type 1	IV – 57
HMA Mixture Design Requirements, Volumetric Requirements, Verification and Production	IV – 58
Reclaimed Asphalt Pavement and Reclaimed Asphalt Shingles	IV – 65
PCC QC/QA Electronic Report Submittal	IV – 74
PCC Automatic Batching Equipment	IV – 74
Project Specific Special Provisions	
Earth Excavation (Special)	IV – 75
Pipe Underdrains 24"	IV – 75
High-Early Strength PCC Pavement, 9"	IV – 75
Rebuild Existing Handhole	IV – 75
Handrail Removal	IV – 75
Slope Wall, Special	IV – 75
LED Street Light Pole and Luminaire (Complete)	IV – 75
<b><u>Bike Lane Micro Overlay, 3 Passes</u></b>	
Surface Removal, Variable Depth (Special)	IV – 77
Watermain, 8" Diameter, Ductile Iron, Open Cut	IV – 84
Watermain, 6" Diameter, Ductile Iron, Open Cut	IV – 86

Forrest Hill Avenue (FAU 6653)  
Section 12-00362-00-PV  
Peoria County

16 Inch PVC SDR 21 Casing for Water/Sewer Crossing	IV - <u>86</u>
16 Inch Steel Casing Pipe for Watermain (0.250 inch Wall thickness)	IV - <u>86</u>
Gate Valve and Box, 8" Diameter	IV - <u>86</u>
Gate Valve and Box, 6" Diameter	IV - <u>86</u>
Tapping Sleeve and Tapping Gate Valve, 8" Diameter	IV - <u>87</u>
Tapping Sleeve and Tapping Gate Valve, 6" Diameter	IV - <u>87</u>
Ductile Iron Fittings	IV - <u>87</u>
Fire Hydrant (3-way)	IV - <u>87</u>
Fire Hydrant Removal	IV - <u>87</u>
Select Granular Backfill	IV - <u>87</u>
Pavement Removal for Watermain	IV - <u>87</u>
Concrete Pavement Placement	IV - <u>88</u>
Watermain Testing and Disinfection	IV - <u>88</u>
<b>APPENDIX A – CONTRACT DELIVERABLES</b>	
Subcontractor Payment Form	A - 1
Monthly Work Force Analysis	A - 2
Notification of Change in Participation	A - 3

**APPENDIX B – WATERMAIN TECHNICAL SPECIFICATIONS**

**APPENDIX C – WATERMAIN SUPPLEMENTAL TECHNICAL SPECIFICATIONS**

## SECTION II - GENERAL CONDITIONS

### PROJECT DESCRIPTION

The proposed improvements will extend the service life of the existing pavement and return its features to a condition of structural and functional adequacy. This will be accomplished by constructing new curb and gutter along each edge of the street and constructing new hot-mix asphalt pavement over the existing pavement. New sidewalks and driveways will also be constructed within the street right of way to provide safe routes for pedestrians and access to and from private property. New inlets, manholes, frames, lids, grates and storm sewer are also part of the roadway improvements. The existing asphalt pavement surface will be removed by "cold-milling" machine methods and four inches of hot-mix asphalt pavement will be applied on the remaining pavement structure. In two separate locations, the existing PCC pavement and over-lying asphalt pavement shall be removed and replaced with new PCC base and HMA surface. The project also includes new street lights along both sides of the street.

### GUARANTEE PERIOD

The Contractor warrants all work performed under this contract is free from defects and was performed in accordance with the Contract Documents. Contractor guarantees the materials and workmanship to not fail prematurely or show signs of unusual distress for a period of one (1) year from the date of agreement of final quantities, as agreed in writing, by the City Engineer after all parties have signed the document. In case of acceptance of a part of the work for use prior to the agreement to final quantities, the guarantee for the part so accepted shall be for a period of one (1) year from the date of such partial acceptance, in writing, by the City Engineer.

### PUBLIC INFORMATION MEETING

A public information meeting will be held for this project prior to the start of construction. The Contractor shall schedule the meeting and advertise its date, time, and location in all local newspapers and media outlets in the City of Peoria. The Contractor and the City of Peoria representatives shall conduct the meeting jointly. The Contractor shall have a representative at the meeting to answer questions concerning scheduling, the nature of work to be performed, and any other issues that may arise. The Contractor shall secure the meeting facility and pay for any facility rental fees and provide appropriate liability insurance. In addition to conducting the public information meeting, the Contractor shall also notify all residents and property owners adjacent to the project limits of the meeting. A meeting notice and mailing list will be provided to the Contractor by the City of Peoria. The cost for conducting this meeting and contacting residents and property owners shall not be paid for separately, but shall be considered included with the various traffic control items contained herein.

#### ENGINEER AND RESIDENT ENGINEER

As defined in Article 101.16 of the Standard Specifications, the City Engineer of the City of Peoria is the Engineer referenced in the contract documents. The Resident Engineer/Resident Technician shall be identified by the Engineer at the initial project meeting. The City of Peoria may also retain a consulting engineer to provide services on behalf of the Engineer during construction of the improvements. These persons and responsibilities will be identified at the initial project meeting.

#### PROPERTY OWNER CONSIDERATIONS

Before construction begins, the Contractor shall contact all persons occupying homes to be affected by the project to determine if any special access considerations are required due to the occupant's health or disability. The Contractor shall notify owners in writing no less than 3 calendar days before removing any part of existing alleys or driveways. The contractor shall also allow for weekly pick-up of garbage from properties. Construction of curb and gutter and driveways shall be completed as soon as possible once driveway pavement is removed. Aggregate for Temporary Access shall be used as necessary to provide access to properties once driveway pavement has been removed in order to minimize the occupant's inconvenience.

Whenever excavation is made within a temporary or permanent construction easement, on private property for driveways, sidewalks, steps, retaining walls, utility connections, tree plantings or other construction, the topsoil disturbed by the excavation operations shall be restored as nearly as possible to its original position and the whole area involved in the construction operation shall be left in a neat and presentable condition.

The Contractor shall use reasonable care to avoid disturbing portions of private property not necessary to the construction operations. If, in the judgment of the Engineer, areas are disturbed unnecessarily, the Contractor shall restore these areas at his own expense. The Contractor shall not pile excavated material outside the limits of the R.O.W. upon adjacent private property without the written consent of the property owner and the Engineer.

#### STATUS OF UTILITIES

Utility companies were notified of the project improvements during the process of preparing construction drawings. The utility companies were requested to provide drawings and information about the size and location of their respective facilities for inclusion on the construction plan drawings. Utility companies have also been provided the set of construction drawings distributed for bidding purposes and informed that they must determine if their respective facilities will be in conflict with the proposed improvements and if so, take steps to relocate the conflicting facilities.

The City of Peoria assumes no responsibility for the presence, specific size or location of underground distribution systems of the several public utility corporations. No responsibility for the protection of said underground systems will be assumed by the City of Peoria unless such protection is incidental to the protection of the municipally-owned property of the City of Peoria. If such protection is found to be necessary to water mains, gas mains, steam mains, underground electrical distribution systems, underground telephone circuit systems or any other underground systems of non-municipal ownership, the cost of same, in whole or in part, is disclaimed by the City of Peoria.

The construction plans include a list of facilities known to the Engineer to be in conflict with the proposed improvements. The list was developed based on the limited information available to the Engineer when plans were prepared. The Contractor shall take all steps necessary to identify the presence and location of existing utilities, protect those utilities from damage, and coordinate the relocation and adjustment of utilities as required to construct the proposed improvements.

#### SIGNS WITHIN THE RIGHT OF WAY

The contractor shall relocate or remove and reinstall all street, traffic, parking, directional, regulatory and warning signs within the limits of the improvement. All signs which interfere with construction operations shall be removed, stored in a place away from work, and replaced by the contractor after the improvement has been completed if they are not required for traffic control. Signs which are required for traffic control shall be reinstalled at a temporary location acceptable to the Engineer, in a workmanlike manner, visible to traffic, and maintained straight and neat for the duration of the temporary setting. Signs shall not be moved until progress of the work demands the relocation. The cost of this item shall be included in the contract unit price bid for the item of work which necessitated the removal.

#### RESPONSIBILITY FOR DAMAGE CLAIMS

The Contractor shall indemnify and save harmless the CITY OF PEORIA, its officers, employees and consultants against all loss, damage or expense that it or they may sustain as a result of any suits, actions, or claims of any character brought on account of injury to or death of any person or persons, including all persons performing any work under this contract, which may arise in any way (except for a negligent act of the City of Peoria, its officers, employees or consultants) in connection with the work to be performed under this contract, including but not limited to, suits, actions or claims arising under "An Act providing for the protection and safety of persons in and about the construction, repairing, alteration or removal of building, bridges, viaducts, and other structures, and to provide for the enforcement thereof," approved June 3, 1907, (740 ILCS 150/1), as amended: the Contractor shall also indemnify and save harmless the CITY OF PEORIA, its officers, employees and consultants from all suits, actions,

or claims of any character brought because of any injuries or damages received or sustained by any person, persons, or property, on account of, or in consequence of, any neglect by Contractor or a Subcontractor in safeguarding the work; or through use of unacceptable materials in constructing the work; or because of any act or omission, neglect, or misconduct of said Contractor; or because of any claims or amounts recovered for any infringements of patent, trademark, or copyright, or from any claims or amounts arising or recovered under the "Workers Compensation Act," or any other law, ordinance, order, or decree, and so much of the money due the said Contractor under and by virtue of his contract as shall be considered necessary by the Department for such purposes, may be retained for the use of the ENGINEERING DIVISION; or, in case no money is due, his surety shall be held until such suits, actions, or claims have been settled and suitable evidence to that effect furnished to the Department.

#### PHASING OF PROJECT

The Contractor is completely responsible for scheduling and coordinating all work within the project limits. Specific requirements for the water main construction and transferring the service connections to the new main are defined in these documents. The water main construction shall begin at the earliest opportunity. Any other utility relocations and adjustments must also be coordinated by the Contractor in order to not cause undue delays in completing the work. Removal and replacement of driveways shall be completed in an expeditious manner in order to minimize inconvenience to property owners.

#### CONTRACTOR'S INSURANCE

The Contractor shall not commence work under this project until he has obtained all insurance required under this paragraph and such insurance has been approved by the City of Peoria, nor shall the Contractor allow any Subcontractor to commence work on his subcontract until all similar insurance required of the Subcontractor has been so obtained and approved by the City of Peoria.

The Contractor shall require Subcontractors, if any, not protected under the Contractor's insurance policies as an additional insured to take out and maintain insurance of such nature in amounts not less than that required of the principal Contractor, excluding Umbrella Coverage and Owner's Protective Liability and Property Damage Insurance, and any and all insurance obtained by any Subcontractor or Subcontractors shall be approved by the City of Peoria.

All policies shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any of the insureds or additional insured thereunder.

#### Worker's Compensation Insurance

The Contractor shall take out and maintain during the life of this project Worker's Compensation Insurance for all of his employees employed at the site of the project and, in case any work is sublet, the Contractor shall require the Subcontractor similarly to provide Worker's Compensation Insurance for all of the latter's employees unless such employees are covered by the protection afforded by the Contractor, and any such insurance obtained by any subcontractor or subcontractors shall be approved by the City of Peoria. In case any class of employees engaged in hazardous work at the site of the project is not protected under the Worker's Compensation statute, the Contractor shall provide, and shall cause each Subcontractor to provide adequate insurance coverage for the protection of his employees not otherwise protected, such as accident insurance, and any such insurance shall be approved by the City of Peoria.

Public Liability and Property Damage Insurance

The Contractor shall take out and maintain during the life of the project such General Liability, Public Liability and Property Damage Insurance as shall protect him and any Subcontractor performing work covered by this project, from claims for damages for personal injury, including accidental death, as well as from claims for property damages, which may arise from operations under this project, whether such operations be by himself or by any Subcontractors or by anyone directly or indirectly employed by either of them and the amounts of such insurance shall be as follows:

Commercial General Liability Insurance that provides Property Damage and/or Bodily Injury in an amount not less than \$1,000,000 per occurrence and \$2,000,000 aggregate.

Owner's Protective Liability and Property Damage Insurance

The Contractor shall obtain Owner's Protective Liability and Property Damage Insurance in an amount not less than \$1,000,000 per occurrence and \$2,000,000 aggregate. If endorsements to the above public liability and property damage insurance policies cannot be made, then separate policies providing such protection must be furnished by the Contractor.

Automobile Insurance

The Contractor shall take out and maintain during the life of the project such automobile insurance covering all owned and non-owned vehicles as shall project him and any Subcontractor performing work covered by this project, from claims for damages in an amount not less than \$1,000,000 Combined Bodily Injury and Property Damage.

Umbrella Coverage

The Contractor shall take out and maintain during the life of the project such Umbrella or Excess Liability coverage as shall protect him and any Subcontractor performing work covered by this project, from claims for damages in an amount not less than \$2,000,000 per occurrence and \$5,000,000 annual aggregate.

#### Additional Insured Endorsement

All Liability insurance policies shall name Illinois American Water Company and the City of Peoria its officers, directors, employees, agents, representatives, subsidiaries, successors, and assigns, as additional insured, shall be primary to any other insurance carried by the Additional Insured and shall provide coverage consistent with ISO CG 20 26, and shall maintain the required coverage, naming Illinois American and the City of Peoria as an additional insured, for a period of not less than three years from the date the City of Peoria and Contractor execute an Agreement to Final Quantities.

#### PROOF OF CARRIAGE OF INSURANCE

The Contractor and all Subcontractors shall furnish the City of Peoria with satisfactory proof of insurance coverage before the project begins. If coverage is cancelled or the carrier's rating falls below A.M. Best "A" rated, the City of Peoria shall be notified in writing.

Certificates of insurance are required. The Certificate must state the following "The City of Peoria, its officers, directors, employees, agents, and representatives, are named as Additional Insured on a primary basis for liability arising out of the contractor's operations."

The Contractor must provide copies of the policies and endorsements. Failure to provide the required certificates of insurance shall not operate to invalidate the insurance requirements under this Contract.

#### SUBSTANCE ABUSE PREVENTION PROGRAM

Before the contractor and any Subcontractor commences work, the Contractor and any Subcontractor shall have in place a written Substance Abuse Prevention Program for the prevention of substance abuse among its employees which meets or exceeds the requirements in P.A. 95-0635 or shall have a collective bargaining agreement in effect dealing with the subject matter of P.A. 95-0635.

The Contractor and any Subcontractor shall file with a public body: a copy of the substance abuse prevention program along with a cover letter certifying that their program meets the requirements of the Act, or a letter certifying that the Contractor or a Subcontractor has a collective bargaining agreement in effect dealing with the subject matter of this Act.

#### CERTIFIED PAYROLL REQUIREMENTS

Contractors and subcontractors on public works projects must submit certified payroll records on a monthly basis to the public body in charge of the construction project, along with a statement affirming that such records are true and accurate, that the wages paid to each worker are not less than the required prevailing rate, and that the contractor is

aware that filing records he or she knows to be false is a Class B Misdemeanor. The Certified Payroll Records must include, for every worker employed on the public works project, the name, address, telephone number, social security number, job classification, hourly wages paid in each pay period, number of hours worked each day, and starting and ending time of work each day.

#### PREVAILING WAGE PROVISION

This contract is for the performance of "public works" as that term is defined by 820 ILCS 130/2. Not less than the prevailing rate of wages as found by the Illinois Department of Labor or determined by a Court on review shall be paid to all laborers, workers and mechanics performing work under this contract. These prevailing rates of wages are included in this contract.

If the Department of Labor revises the prevailing rate of hourly wages to be paid by the public body, the revised rate as provided by the public body shall apply to this contract.

## Peoria County Prevailing Wage for June 2014

(See explanation of column headings at bottom of wages)

Trade Name	RG	TYP	C	Base	FRMAN	M-F>8	OSA	OSH	H/W	Pensn	Vac	Trng
ASBESTOS ABT-GEN		BLD		26.470	27.970	1.5	1.5	2.0	7.700	15.07	0.000	0.800
ASBESTOS ABT-GEN		HWY		29.580	31.080	1.5	1.5	2.0	7.700	16.19	0.000	0.800
ASBESTOS ABT-MEC		BLD		32.140	34.640	1.5	1.5	2.0	11.17	10.76	0.000	0.720
BOILERMAKER		BLD		36.750	39.750	2.0	2.0	2.0	7.070	15.84	0.000	0.350
BRICK MASON		BLD		32.060	33.560	1.5	1.5	2.0	8.300	9.500	0.000	0.580
CARPENTER		BLD		29.330	31.580	1.5	1.5	2.0	7.700	14.66	0.000	0.520
CARPENTER		HWY		31.650	33.900	1.5	1.5	2.0	8.000	15.46	0.000	0.520
CEMENT MASON		BLD		27.090	28.840	1.5	1.5	2.0	8.140	14.76	0.000	0.500
CEMENT MASON		HWY		28.280	29.780	1.5	1.5	2.0	8.140	15.13	0.000	0.500
CERAMIC TILE FNSHER		BLD		29.750	0.000	1.5	1.5	2.0	8.300	9.500	0.000	0.580
ELECTRIC PWR EQMT OP		ALL		38.300	45.290	1.5	1.5	2.0	6.150	10.73	0.000	0.380
ELECTRIC PWR GRNDMAN		ALL		26.280	45.290	1.5	1.5	2.0	5.790	7.360	0.000	0.260
ELECTRIC PWR LINEMAN		ALL		42.540	45.290	1.5	1.5	2.0	6.280	11.92	0.000	0.430
ELECTRIC PWR TRK DRV		ALL		27.560	45.290	1.5	1.5	2.0	5.830	7.720	0.000	0.280
ELECTRICIAN		BLD		34.820	37.320	1.5	1.5	2.0	5.600	11.07	0.000	0.400
ELECTRONIC SYS TECH		BLD		27.480	29.480	1.5	1.5	2.0	5.750	10.52	0.000	0.400
ELEVATOR CONSTRUCTOR		BLD		41.070	46.200	2.0	2.0	2.0	12.73	13.46	3.290	0.600
GLAZIER		BLD		31.870	33.870	1.5	1.5	1.5	10.25	7.700	0.000	1.250
HT/FROST INSULATOR		BLD		42.850	45.350	1.5	1.5	2.0	11.17	11.96	0.000	0.720
IRON WORKER		BLD		31.010	32.910	1.5	1.5	2.0	9.390	12.26	0.000	0.540
IRON WORKER		HWY		34.580	36.580	1.5	1.5	2.0	9.390	12.26	0.000	0.390
LABORER		BLD		25.470	26.970	1.5	1.5	2.0	7.700	15.07	0.000	0.800
LABORER		HWY		28.830	30.330	1.5	1.5	2.0	7.700	16.19	0.000	0.800
LABORER, SKILLED		BLD		25.870	27.370	1.5	1.5	2.0	7.700	15.07	0.000	0.800
LABORER, SKILLED		HWY		29.130	30.630	1.5	1.5	2.0	7.700	16.19	0.000	0.800
LATHER		BLD		29.330	31.580	1.5	1.5	2.0	7.700	14.66	0.000	0.520
MACHINERY MOVER		HWY		34.580	36.580	1.5	1.5	2.0	9.390	12.26	0.000	0.390
MACHINIST		BLD		43.920	46.420	1.5	1.5	2.0	6.760	8.950	1.850	0.000

MARBLE FINISHERS	BLD	29.750	0.000	1.5	1.5	2.0	8.300	9.500	0.000	0.580
MARBLE MASON	BLD	31.510	32.760	1.5	1.5	2.0	8.300	9.500	0.000	0.580
MILLWRIGHT	BLD	30.240	32.490	1.5	1.5	2.0	7.700	14.09	0.000	0.520
MILLWRIGHT	HWY	32.220	34.470	1.5	1.5	2.0	8.000	15.39	0.000	0.520
OPERATING ENGINEER	BLD 1	36.000	39.000	1.5	1.5	2.0	6.750	16.60	0.000	3.000
OPERATING ENGINEER	BLD 2	33.490	39.000	1.5	1.5	2.0	6.750	16.60	0.000	3.000
OPERATING ENGINEER	BLD 3	29.340	39.000	1.5	1.5	2.0	6.750	16.60	0.000	3.000
OPERATING ENGINEER	HWY 1	36.000	39.500	1.5	1.5	2.0	6.750	16.60	0.000	3.000
OPERATING ENGINEER	HWY 2	33.490	39.500	1.5	1.5	2.0	6.750	16.60	0.000	3.000
OPERATING ENGINEER	HWY 3	29.340	39.500	1.5	1.5	2.0	6.750	16.60	0.000	3.000
PAINTER	ALL	33.000	35.000	1.5	1.5	1.5	10.00	8.200	0.000	1.350
PAINTER SIGNS	BLD	33.920	38.090	1.5	1.5	1.5	2.600	2.710	0.000	0.000
PILEDRIVER	BLD	29.830	32.080	1.5	1.5	2.0	7.700	14.66	0.000	0.520
PILEDRIVER	HWY	32.650	34.900	1.5	1.5	2.0	8.000	15.46	0.000	0.520
PIPEFITTER	BLD	37.400	41.510	1.5	1.5	2.0	7.000	11.63	0.000	1.060
PLASTERER	BLD	27.770	29.770	1.5	1.5	2.0	8.140	13.71	0.000	0.650
PLUMBER	BLD	34.520	37.630	1.5	1.5	2.0	7.000	13.31	0.000	0.900
ROOFER	BLD	29.580	31.060	1.5	1.5	2.0	8.450	7.220	0.000	0.250
SHEETMETAL WORKER	BLD	32.150	33.760	1.5	1.5	2.0	8.620	14.18	0.000	0.780
SIGN HANGER	HWY	34.580	36.580	1.5	1.5	2.0	9.390	12.26	0.000	0.390
SPRINKLER FITTER	BLD	37.120	39.870	1.5	1.5	2.0	8.420	8.500	0.000	0.350
STEEL ERECTOR	HWY	34.580	36.580	1.5	1.5	2.0	9.390	12.26	0.000	0.390
STONE MASON	BLD	32.060	33.560	1.5	1.5	2.0	8.300	9.500	0.000	0.580
<del>SURVEY WORKER-&gt; NOT IN EFFECT</del>		28.900	30.400	1.5	1.5	2.0	7.700	14.86	0.000	0.800
TERRAZZO FINISHER	BLD	29.750	0.000	1.5	1.5	2.0	8.300	9.500	0.000	0.580
TERRAZZO MASON	BLD	31.510	32.760	1.5	1.5	2.0	8.300	9.500	0.000	0.580
TILE MASON	BLD	31.510	32.760	1.5	1.5	2.0	8.300	9.500	0.000	0.580
TRUCK DRIVER	ALL 1	31.230	0.000	1.5	1.5	2.0	10.30	4.840	0.000	0.250
TRUCK DRIVER	ALL 2	31.680	0.000	1.5	1.5	2.0	10.30	4.840	0.000	0.250
TRUCK DRIVER	ALL 3	31.890	0.000	1.5	1.5	2.0	10.30	4.840	0.000	0.250
TRUCK DRIVER	ALL 4	32.180	0.000	1.5	1.5	2.0	10.30	4.840	0.000	0.250
TRUCK DRIVER	ALL 5	33.020	0.000	1.5	1.5	2.0	10.30	4.840	0.000	0.250
TRUCK DRIVER	O&C 1	24.980	0.000	1.5	1.5	2.0	10.30	4.840	0.000	0.250
TRUCK DRIVER	O&C 2	25.340	0.000	1.5	1.5	2.0	10.30	4.840	0.000	0.250
TRUCK DRIVER	O&C 3	25.510	0.000	1.5	1.5	2.0	10.30	4.840	0.000	0.250
TRUCK DRIVER	O&C 4	25.740	0.000	1.5	1.5	2.0	10.30	4.840	0.000	0.250
TRUCK DRIVER	O&C 5	26.420	0.000	1.5	1.5	2.0	10.30	4.840	0.000	0.250
TUCKPOINTER	BLD	32.060	33.560	1.5	1.5	2.0	8.300	9.500	0.000	0.580

Legend: RG (Region)  
 TYP (Trade Type - All, Highway, Building, Floating, Oil & Chip, Rivers)

C (Class)

Base (Base Wage Rate)

FRMAN (Foreman Rate)

M-F>8 (OT required for any hour greater than 8 worked each day, Mon through Fri.)

OSA (Overtime (OT) is required for every hour worked on Saturday)

OSH (Overtime is required for every hour worked on Sunday and Holidays)

H/W (Health & Welfare Insurance)

Pensn (Pension)

Vac (Vacation)

Trng (Training)

## Explanations

### PEORIA COUNTY

The following list is considered as those days for which holiday rates of wages for work performed apply: New Years Day, Memorial Day,

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

Oil and chip resealing (O&C) means the application of road oils and liquid asphalt to coat an existing road surface, followed by application of aggregate chips or gravel to coated surface, and subsequent rolling of material to seal the surface.

#### EXPLANATION OF CLASSES

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

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

#### CERAMIC TILE FINISHER, MARBLE FINISHER, TERRAZZO FINISHER

Assisting, helping or supporting the tile, marble and terrazzo mechanic by performing their historic and traditional work assignments required to complete the proper installation of the work covered by said crafts. The term "Ceramic" is used for naming the classification only and is in no way a limitation of the product handled. Ceramic takes into consideration most hard tiles.

#### ELECTRONIC SYSTEMS TECHNICIAN

Installation, service and maintenance of low-voltage systems which utilizes the transmission and/or transference of voice, sound, vision, or digital for commercial, education, security and entertainment purposes for the following: TV monitoring and surveillance, background/foreground music, intercom and telephone interconnect, field programming, inventory control systems, microwave transmission, multi-media, multiplex, radio page, school, intercom and sound burglar alarms and low voltage master clock systems.

Excluded from this classification are energy management systems, life safety systems, supervisory controls and data acquisition systems not intrinsic with the above listed systems, fire alarm systems, nurse call systems and raceways exceeding fifteen feet in length.

#### LABORER, SKILLED - BUILDING

The skilled laborer building (BLD) classification shall encompass the following types of work, irrespective of the site of the work: cutting & acetylene torch, gunnite nozzle men, gunnite pump men & pots, kettlemen & carriers of men handling hot stuff, sandblaster nozzle

men, sandblasting pump men & pots, setting up and using concrete burning bars, wood block setters, underpinning & shoring of existing buildings, and the unloading and handling of all material coated with creosote.

**LABORER, SKILLED - HIGHWAY**

The skilled laborer heavy & highway (HWY) classification shall encompass the following types of work, irrespective of the site of the work: jackhammer & drill operator, gunite pump & pot man, puddlers, vibrator men, wire fabric placer, sandblast pump & pot man, strike off concrete, unloading, handling & carrying of all creosoted piles, ties or timber, concrete burning bars, power wheelbarrows or buggies, asphalt raker, bricksetters, cutting torchman (electric & acetylene), men setting lines to level forms, form setters, gunite nozzle man & sandblasting nozzle man, power man, and rip-rapping by hand.

**SURVEY WORKER** - Operated survey equipment including data collectors, G.P.S. and robotic instruments, as well as conventional levels and transits.

**TRUCK DRIVER - BUILDING, HEAVY AND HIGHWAY CONSTRUCTION**

Class 1. Drivers on 2 axle trucks hauling less than 9 ton. Air compressor and welding machines and brooms, including those pulled by separate units, truck driver helpers, warehouse employees, mechanic helpers, greasers and tiremen, pickup trucks when hauling materials, tools, or workers to and from and on-the-job site, and fork lifts up to 6,000 lb. capacity.

Class 2. Two or three axle trucks hauling more than 9 ton but hauling less than 16 ton. A-frame winch trucks, hydrolift trucks, vactor trucks or similar equipment when used for transportation purposes. Fork lifts over 6,000 lb. capacity, winch trucks, four axle combination units, and ticket writers.

Class 3. Two, three or four axle trucks hauling 16 ton or more. Drivers on water pulls, articulated dump trucks, mechanics and working forepersons, and dispatchers. Five axle or more combination units.

Class 4. Low Boy and Oil Distributors.

Class 5. Drivers who require special protective clothing while employed on hazardous waste work.

**TRUCK DRIVER - OIL AND CHIP RESEALING ONLY.**

This shall encompass laborers, workers and mechanics who drive contractor or subcontractor owned, leased, or hired pickup, dump, service, or oil distributor trucks. The work includes transporting supplies, parts, machinery and tools) to or from the job site; distributing oil or liquid asphalt and aggregate; stock piling material when in connection with the actual oil and chip contract. The Truck Driver (Oil & Chip Resealing) wage classification does not include supplier delivered materials.

**OPERATING ENGINEERS - BUILDING**

Class 1. Cranes; Overhead Cranes; Gradall; All Cherry Pickers; Mechanics; Central Concrete Mixing Plant Operator; Road Pavers (27E - Dual Drum - Tri Batchers); Blacktop Plant Operators and Plant Engineers; 3 Drum Hoist; Derricks; Hydro Cranes; Shovels; Skimmer Scoops; Koehring Scooper; Drag Lines; Backhoe; Derrick Boats; Pile Drivers and Skid Rigs; Clamshells; Locomotive Cranes; Dredge (all types) Motor Patrol; Power Blades - Dumore - Elevating and similar types; Tower Cranes (Crawler-Mobile) and Stationary; Crane-type Backfiller; Drott Yumbo and similar types considered as Cranes; Caisson Rigs; Dozer; Tournadozer; Work Boats; Ross Carrier; Helicopter; Tournapulls - all and similar types; Scoops (all sizes); Pushcats; Endloaders (all types); Asphalt Surfacing Machine; Slip Form Paver; Rock Crusher; Heavy Equipment Greaser; CMI, CMI Belt Placer, Auto Grade & 3 Track and similar types; Side Booms; Multiple Unit Earth Movers; Creter Crane; Trench Machine; Pump-crete-Belt Crete-Squeeze Cretes-Screw-type Pumps and Gypsum; Bulker & Pump - Operator will clean; Formless Finishing Machine; Flaherty Spreader or similar types; Screeed Man on Laydown Machine; Wheel Tractors (industrial or Farm-type w/Dozer-Hoe-Endloader or other attachments); F.W.D. & Similar Types; Vermeer Concrete Saw.

Class 2. Dinkeys; Power Launches; PH One-pass Soil Cement Machine (and similar types); Pugmill with Pump; Backfillers; Euclid Loader; Forklifts; Jeeps w/Ditching Machine or other attachments; Tunelugger; Automatic Cement and Gravel Batching Plants; Mobile Drills (Soil Testing) and similar types; Gurries and Similar Types; (1) and (2) Drum Hoists (Buck Hoist and Similar Types); Chicago Boom; Boring Machine & Pipe Jacking Machine; Hydro Boom; Dewatering System; Straw Blower; Hydro Seeder; Assistant Heavy Equipment Greaser on Spread; Tractors (Track type) without Power Unit pulling Rollers; Rollers on Asphalt -- Brick Macadem; Concrete Breakers; Concrete Spreaders; Mule Pulling Rollers; Center Stripper; Cement Finishing Machines & CMI Texture & Reel Curing Machines; Cement Finishing Machine; Barber Green or similar loaders; Vibro Tamper (All similar types) Self-propelled; Winch or Boom Truck; Mechanical Bull Floats; Mixers over 3 Bag to 27E; Tractor pulling Power Blade or Elevating Grader; Porter Rex Rail; Clary Screeed; Truck Type Hoptoe Oilers; Fireman; Spray Machine on Paving; Curb Machines; Truck Crane Oilers; Oil Distributor; Truck-Mounted Saws.

Class 3. Air Compressor; Power Subgrader; Straight Tractor; Trac Air without attachments; Herman Nelson Heater, Dravo, Warner, Silent Glo, and similar types; Roller: Five (5) Ton and under on Earth or Gravel; Form Grader; Crawler Crane & Skid Rig Oilers; Freight Elevators - permanently installed; Pump; Light Plant; Generator; Conveyor (1) or (2) - Operator will clean; Welding Machine; Mixer (3) Bag and Under (Standard Capacity with skip); Bulk Cement Plant; Oiler on Central Concrete Mixing Plant.

OPERATING ENGINEERS - HEAVY AND HIGHWAY CONSTRUCTION

CLASS 1. Cranes; Hydro Cranes; Shovels; Crane Type Backfiller; Tower, Mobile, Crawler, & Stationary Cranes; Derricks; Hoists (3 Drum); Draglines; Drott Yumbo & Similar Types considered as Cranes; 360 Degree Swing Excavator (Shears, Grapples, Movacs, etc.); Back Hoe; Derrick Boats; Pile Driver and Skid Rigs; Clam Shell; Locomotive -

Cranes; Road Pavers - Single Drum - Dual Drum - Tri Batcher; Motor Patrols & Power Blades - Dumore - Elevating & Similar Types; Mechanics; Central Concrete Mixing Plant Operator; Asphalt Batch Plant Operators and Plant Engineers; Gradall; Caisson Rigs; Skimmer Scoop - Koering Scooper; Dredges (all types); Hoptoe; All Cherry Pickers; Work Boat; Ross Carrier; Helicopter; Dozer; Tournadozer; Tournapulls - all and similar types; Operation of Concrete and all Recycle Machines; Multiple Unit Earth Movers; Scoops (all sizes); Pushcats; Endloaders (all types); Asphalt Surfacing Machine; Slip Form Paver; Rock Crusher; Operation of Material Crusher, Screening Plants, and Tunnel Boring Machine; Heavy Equipment Greaser (top greaser on spread); CMI, Auto Grade, CMI Belt Placer & 3 Track and Similar Types; Side Booms; Asphalt Heater & Planer Combination (used to plane streets); Wheel Tractors (with Dozer, Hoe or Endloader Attachments); CAT Earthwork Compactors and Similar Types; Blaw Knox Spreader and Similar Types; Trench Machines; Pump Crete - Belt Crete - Squeeze Crete - Screw Type Pumps and Gypsum (operator will clean); Creter Crane; Operation of Concrete Pump Truck; Formless Finishing Machines; Flaherty Spreader or Similar Types; Screed Man on Laydown Machine; Vermeer Concrete Saw; Operation of Laser Screeed; Span Saw; Dredge Leverman; Dredge Engineer; Lull or Similar Type; Hydro-Boom Truck; Operation of Guard Rail Machine; and Starting Engineer on Pipeline or Construction (11 or more pieces) including: Air Compressor (Trailer Mounted), All Forced Air Heaters (regardless of Size), Water Pumps (Greater than 4-1/2" or Total Discharge Over 4-1/2"), Light Plants, Generators (Trailer Mounted - Excluding Decontamination Trailer), Welding Machines (Any Size or Mode of Power), Conveyor, Mixer (any size), Stud Welder, Power Pac, etc, and Ground Heater (Trailer Mounted).

CLASS 2. Bulker & Pump; Power Launches; Boring Machine & Pipe Jacking Machine; Dinkeys; Operation of Carts, Powered Haul Unit for a Boring Machine; P & H One Pass Soil Cement Machines and Similar Types; Wheel Tractors (Industry or Farm Type - Other); Back Fillers; Euclid Loader; Fork Lifts; Jeep w/Ditching Machine or Other Attachments; Tunneluger; Automatic Cement & Gravel Batching Plants; Mobile Drills - Soil Testing and Similar Types; Pugmill with Pump; All (1) and (2) Drum Hoists; Dewatering System; Straw Blower; Hydro-Seeder; Bump Grinders (self-propelled); Assistant Heavy Equipment Greaser; Apsco Spreader; Tractors (Track-Type) without Power Units Pulling Rollers; Rollers on Asphalt - Brick or Macadam; Concrete Breakers; Concrete Spreaders; Cement Strippers; Cement Finishing Machines & CMI Texture & Reel Curing Machines; Vibro-Tampers (All Similar Types Self-Propelled); Mechanical Bull Floats; Self-Propelled Concrete Saws; Truck Mounted Power Saws; Operation of Curb Cutters; Mixers - Over Three (3) Bags; Winch and Boom Trucks; Tractor Pulling Power Blade or Elevating Grader; Porter Rex Rail; Clary Screeed; Mule Pulling Rollers; Pugmill without Pump; Barber Greene or Similar Loaders; Track Type Tractor w/Power Unit attached (minimum); Fireman; Spray Machine on Paving; Curb Machines; Paved Ditch Machine; Power Broom; Self-Propelled Sweepers; Self-Propelled Conveyors; Power Subgrader; Oil Distributor; Straight Tractor; Truck Crane Oiler; Truck Type Oilers; Directional Boring Machine; Horizontal Directional Drill; Articulating End Dump Vehicles; Starting Engineer on Pipeline or Construction (6 -10 pieces) including: Air Compressor (Trailer Mounted), All Forced Air Heaters (regardless of Size), Water Pumps (Greater than 4-1/2" or Total Discharge Over 4-1/2"), Light Plants, Generators (Trailer

Mounted - Excluding Decontamination Trailer), Welding Machines (Any Size or Mode of Power), Conveyor, Mixer (any size), Stud Welder, Power Pac, etc., and Ground Heater (Trailer Mounted).

CLASS 3. Straight Framed Truck Mounted Vac Unit (separately powered); Trac Air Machine (without attachments); Rollers - Five Ton and Under on Earth and Gravel; Form Graders; Bulk Cement Plant; Oilers; and Starting Engineer on Pipeline or Construction (3 - 5 pieces) including: Air Compressor (Trailer Mounted), All Forced Air Heaters (regardless of Size), Water Pumps (Greater than 4-1/2" or Total Discharge Over 4-1/2"), Light Plants, Generators (Trailer Mounted - Excluding Decontamination Trailer), Welding Machines (Any Size or Mode of Power), Conveyor, Mixer (any size), Stud Welder, Power Pac, etc., and Ground Heater (Trailer Mounted).

#### Other Classifications of Work:

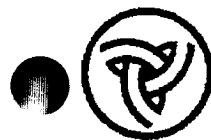
For definitions of classifications not otherwise set out, the Department generally has on file such definitions which are available. If a task to be performed is not subject to one of the classifications of pay set out, the Department will upon being contacted state which neighboring county has such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

#### LANDSCAPING

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

#### NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT

This project shall be completed in compliance with the "National Pollutant Discharge Elimination System Permit" (NPDES) requirements. The project is covered by the implementing agency's MS4 permit number ILR40 0424. The Contractor will be required to comply with all terms of the permit. As a part of the requirements the Contractor will be required to complete the "Contractor Certification Statement", on the attached BDE 2342 form and submit it to the Engineer at the pre-construction conference.



# Illinois Department of Transportation

Forrest Hill (FAU 6653)  
Section 12-00362-00-PV  
Peoria County

## Storm Water Pollution Prevention Plan

Route Forrest Hill (FAU 6653)  
Section 12-00362-00-PV  
County PEORIA

Marked Rte. \_\_\_\_\_  
Project No. \_\_\_\_\_  
Contract No. \_\_\_\_\_

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

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

Emily Munday  
Print Name  
Sr. Project Engineer  
Title  
Crawford, Murphy, Tilly, Inc.  
Agency

Emily Munday \_\_\_\_\_  
Signature  
6/13/14 \_\_\_\_\_  
Date

### I. Site Description:

- A. Provide a description of the project location (include latitude and longitude):

Forrest Hill Avenue from Sheridan Rd. (40°43.5'N, 89°36.2'W) to Knoxville Ave. (40°43.5'N, 89°35.6'W)

- B. Provide a description of the construction activity which is the subject of this plan:

Resurfacing the existing street with new asphalt pavement with two segments of full depth pavement removal and replacement. Improvements include new curb and gutter, sidewalk, storm sewer system and detention basins. New water main shall be constructed within the limits of the proposed pavement.

- C. Provide the estimated duration of this project:

5 months

- D. The total area of the construction site is estimated to be 4.35 acres.

The total area of the site estimated to be disturbed by excavation, grading or other activities is 3.59 acres.

- E. The following is a weighted average of the runoff coefficient for this project after construction activities are completed:

0.59

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

- G. Provide an aerial extent of wetland acreage at the site:

0.0

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

There are two large existing box culverts (a 12'x6' at Sta. 114+93 and a double-9'x9' at Sta. 125+92) which receives significant runoff and where grading slopes away from the back of sidewalk. The box culvert at Sta. 114+93 is located near the low point within this improvement corridor.

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

Construction activities that will disturb soils will be the removal and installation of storm inlets, manholes, storm sewers, detention basins, sidewalks, driveways, and curb and gutter. These areas shall drain to an enclosed storm sewer system, including overflow from the detention basins, and then outlet to the two existing box culverts at Sta. 114+93 and Sta. 125+92.

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

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

City of Peoria

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

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

Unnamed tributaries connect to Dry Run Creek.

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

Turf areas beyond the sidewalk should only be disturbed to the extent necessary to build the new sidewalk. All trees shall be protected from damage.

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

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

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

- a. The name(s) of the listed water body, and identification of all pollutants causing impairment:
- b. Provide a description of how erosion and sediment control practices will prevent a discharge of sediment resulting from a storm event equal to or greater than a twenty-five (25) year, twenty-four (24) hour rainfall event:
- c. Provide a description of the location(s) of direct discharge from the project site to the 303(d) water body:
- d. Provide a description of the location(s) of any dewatering discharges to the MS4 and/or water body:

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

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

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> Soil Sediment  | <input checked="" type="checkbox"/> Petroleum (gas, diesel, oil, kerosene, hydraulic oil / fluids) |
| <input checked="" type="checkbox"/> Concrete       | <input type="checkbox"/> Antifreeze / Coolants   |
| <input type="checkbox"/> Concrete Truck Waste      | <input type="checkbox"/> Waste water from cleaning construction equipment                          |
| <input type="checkbox"/> Concrete Curing Compounds | <input type="checkbox"/> Other (specify)   |
| <input type="checkbox"/> Solid Waste Debris        | <input type="checkbox"/> Other (specify)   |
| <input checked="" type="checkbox"/> Paints         | <input type="checkbox"/> Other (specify)   |
| <input checked="" type="checkbox"/> Solvents       | <input type="checkbox"/> Other (specify)   |
| <input type="checkbox"/> Fertilizers / Pesticides  | <input type="checkbox"/> Other (specify)   |

## II. Controls:

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

- A. **Erosion and Sediment Controls:** At a minimum, controls must be coordinated, installed and maintained to:
- Minimize the amount of soil exposed during construction activity;
  - Minimize the disturbance of steep slopes;
  - Maintain natural buffers around surface waters, direct storm water to vegetated areas to increase sediment removal and maximize storm water infiltration, unless infeasible;
  - Minimize soil compaction and, unless infeasible, preserve topsoil.
- B. **Stabilization Practices:** Provided below is a description of interim and permanent stabilization practices, including site- specific scheduling of the implementation of the practices. Site plans will ensure that existing vegetation is preserved where attainable and disturbed portions of the site will be stabilized. Stabilization practices may include but are not limited to: temporary seeding, permanent seeding, mulching, geotextiles, sodding, vegetative buffer strips, protection of trees, preservation of mature vegetation, and other appropriate measures. Except as provided below in II(B)(1) and II(B)(2), stabilization measures shall be initiated **immediately** where construction activities have temporarily or permanently ceased, but in no case more than **one (1) day** after the construction activity in that portion of the site has temporarily or permanently ceases on all disturbed portions of the site where construction will not occur for a period of fourteen (14) or more calendar days.
- Where the initiation of stabilization measures is precluded by snow cover, stabilization measures shall be initiated as soon as practicable.
  - On areas where construction activity has temporarily ceased and will resume after fourteen (14) days, a temporary stabilization method can be used.

The following stabilization practices will be used for this project:

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

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

The temporary erosion control measures included in the project shall be installed and maintained throughout the construction in accordance with the contract documents.

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

The temporary erosion control measures shall be removed once the site is stabilized.

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

The following structural practices will be used for this project:

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

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

The temporary erosion control measures included in the project shall be installed and maintained throughout the construction in accordance with the contract documents. The slope walls and detention basins are permanent measures that shall be constructed in accordance with contract documents.

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

The slope walls and detention basins are permanent measures to prevent erosion and promote infiltration respectively post construction.

**D. Treatment Chemicals**

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

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

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

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

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

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

Description of permanent storm water management controls:

The slope walls located around the box culvert at Sta. 125+92 and detention basins with perforated underdrains around Stations 114+25 RT and 116+00 LT shall be constructed per the contract documents and details.

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

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

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

1. The Contractor shall provide a construction schedule containing an adequate level of detail to show major activities with implementation of pollution prevention BMPs, including the following items:

- Approximate duration of the project, including each stage of the project
- Rainy season, dry season, and winter shutdown dates
- Temporary stabilization measures to be employed by contract phases
- Mobilization timeframe
- Mass clearing and grubbing/roadside clearing dates
- Deployment of Erosion Control Practices
- Deployment of Sediment Control Practices (including stabilized construction entrances/exits)
- Deployment of Construction Site Management Practices (including concrete washout facilities, chemical storage, refueling locations, etc.)
- Paving, saw-cutting, and any other pavement related operations
- Major planned stockpiling operations
- Timeframe for other significant long-term operations or activities that may plan non-storm water discharges such as dewatering, grinding, etc.
- Permanent stabilization activities for each area of the project

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

### **III. Maintenance:**

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

### **IV. Inspections:**

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

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

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

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

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

Additional Inspections Required:

**V. Failure to Comply:**

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



**Illinois Department  
of Transportation**

**Contractor Certification Statement**

Prior to conducting any professional services at the site covered by this contract, the Contractor and every subcontractor must complete and return to the Resident Engineer the following certification. A separate certification must be submitted by each firm. Attach to this certification all items required by Section II.G of the Storm Water Pollution Prevention Plan (SWPPP) which will be handled by the Contractor/subcontractor completing this form.

Route Forrest Hill (FAU 6653)

Marked Rte. \_\_\_\_\_

Section 12-0362-00-PV

Project No. \_\_\_\_\_

County Peoria

Contract No. \_\_\_\_\_

This certification statement is a part of SWPPP for the project described above, in accordance with the General NPDES Permit No. ILR10 issued by the Illinois Environmental Protection Agency.

I certify under penalty of law that I understand the terms of the Permit No. ILR 10 that authorizes the storm water discharges associated with industrial activity from the construction site identified as part of this certification.

In addition, I have read and understand all of the information and requirements stated in SWPPP for the above mentioned project; I have received copies of all appropriate maintenance procedures; and, I have provided all documentation required to be in compliance with the Permit ILR10 and SWPPP and will provide timely updates to these documents as necessary.

- Contractor
- Sub-Contractor

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Title

\_\_\_\_\_  
Date

\_\_\_\_\_  
Name of Firm

\_\_\_\_\_  
Telephone

\_\_\_\_\_  
Street Address

\_\_\_\_\_  
City/State/ZIP

Items which this Contractor/subcontractor will be responsible for as required in Section II.G. of SWPPP:

---

---

---

---

## SECTION III

### **EEO CONTRACT COMPLIANCE CLAUSE**

It is hereby declared to be the public policy of the City of Peoria, that it will not execute a contract for goods and/or services with any individual, business enterprise, supplier/vendor; maintain a financial relationship with any financial institution; or use the services of any labor organization or member thereof found to be in violation of the provisions of the Municipal Code for the City of Peoria, Chapter 17, Article III, Division 4, Section 17-118.

This clause covers contractors, vendors, suppliers, borrowers and/or recipients of city resources, purchasers and/or developers of city owned property, and any other individuals or entities providing goods and/or services to the City of Peoria; and are hereinafter referred to as "Contractor."

If any Contractor conducting business with the City of Peoria fails to comply with the fair employment and affirmative action provisions of Chapter 17, Article III, Division 4 of the municipal code (hereinafter Chapter 17), the city, at its option, may do any or all of the following:

- (1) Cancel, terminate, or suspend the contract in whole or in part;
- (2) Declare the contractor ineligible for further contracts for one calendar year;
- (3) The Fair Employment and Housing Commission (hereinafter FEHC), in accordance with its rules and regulations, shall have the power to impose a penalty upon any Contractor failing to comply with Chapter 17 in an amount not less than \$50.00; nor more than as provided in Chapter 1, Section 1-5 of the municipal code, for each day that the Contractor fails to comply, upon a specific finding of such violation. The FEHC may order a Contractor found guilty of failure to comply with the provisions of Chapter 17 to pay all or a portion of the legal costs incurred by the city as a result of prosecution of such violations. Penalties assessed under this clause may be recovered from the Contractor by setoff against unpaid portion of the contract price; and
- (4) Such other sanctions as may be imposed by the FEHC pursuant to the provisions of Chapter 17 and other applicable ordinance provisions of the municipal code.

During the performance of this contract, the Contractor agrees:

- (A) That it will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual harassment, ancestry, national origin, place of birth, age, or a physical and/or mental disability which would not interfere with the efficient performance of the job in question. The contractor/vendor will take affirmative action to comply with the provisions of Peoria City Code, Chapter 17 and will require any subcontractor to submit to the City of Peoria a written commitment to comply with this division. The Contractor will distribute copies of this commitment to all persons who participate in recruitment, screening, referral, and selection of job applicants, prospective job applicants, members, or prospective contractors.

The Contractor agrees that the provisions of Chapter 17, of the Municipal Code of the City of Peoria is hereby incorporated by reference, as if set out verbatim

- (B) That it will examine each one of its workforce job classifications to determine if minorities and/or females are underutilized; and it will take appropriate affirmative action steps to rectify such identified underutilization.
- (C) That if it hires additional employees in order to perform this contract or any portion thereof, it will determine the availability of minority and females in the area(s) from which it may reasonably recruit; and every good faith effort will be made in its selection process to minimize or eliminate identified areas of minority and/or female underutilization for each job classification for which there are employment opportunities.
- (D) That during the performance of this contract, the Contractor will maintain its eligibility status to conduct business with the City of Peoria under the provisions of the EEO certification registration program.
- (E) That in all solicitations or advertisements for employees placed by it or on its behalf, it will state that all applicants will be afforded equal opportunity without discrimination because of race, color, sex, religion, national origin, age, or physical and/or mental disability.
- (F) That it will send to each labor organization or representative of workers with which it has or is bound by a collective bargaining agreement or understanding, a notice advising such labor organization or representative of the Contractor's obligations under Chapter 17. If any such labor organization or representative fails or refuses to cooperate with the Contractor in its efforts to comply with Chapter 17, the Contractor will promptly so notify the Equal Opportunity Office (hereinafter EOO) and/or the FEHC for the City of Peoria.
- (G) That it will submit reports as required and furnish all relevant information as may from time to time be requested the EOO and/or the FEHC.
- (H) That it will permit access to all relevant books, records, accounts and work sites by EOO staff members for purposes of investigation to ascertain compliance with Chapter 17.
- (I) That it will include verbatim or by reference the provisions of Section 17-120 of Chapter 17 so that such provisions will be binding in the same manner as with other provisions of this contract. The Contractor will be liable for compliance with applicable provisions of this clause by all its subcontractors; and further, it will promptly notify the EOO and/or FEHC in the event any subcontractor fails or refuses to comply therewith. In addition, no Contractor will utilize any subcontractor declared by the EOO and/or FEHC to be non-responsive and therefore, ineligible for contracts or subcontracts with the City of Peoria.
- (J) That during the performance of this contract, the Contractor agrees: that it will have written sexual harassment policies that shall include, at a minimum, the following information: (i) the illegality of sexual harassment; (ii) the definition of sexual harassment under state law; (iii) a description of sexual harassment utilizing examples; (iv) the contractor's internal complaint process including penalties; (v) the legal recourse, investigative and complaint process available through the Illinois Department of Human Rights and the Human Rights Commission; (vi) directions on how to contact the Department of Human Rights and the Commission; and (vii) protection against retaliation as provided by Section 6-101 of this Act (Public Act 87-1257). A copy of the policies shall be provided to the Illinois Department of Human

Rights or the City of Peoria upon request.

- (K) That during the performance of this contract, the Contractor agrees that they do not and will not maintain or provide for their employees, any segregated facilities at any of their establishments, or permit employees to perform their services at any location under their control where segregated facilities are maintained.

As used in this document, the term segregated facilities means any waiting rooms, work areas, rest rooms and wash rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, housing facilities provided for employees which are segregated by explicit directive or are in fact segregated on the basis of race, religion, color, national origin, because of habit, local custom, or otherwise.

(Revised 01/04)



**MINORITY AND WOMEN'S BUSINESS ENTERPRISE  
(M/WBE) PARTICIPATION  
REQUIREMENTS FOR GOOD-FAITH  
EFFORTS**

**(Projects exceeding \$50,000)**

*Description of Program*

- A. It is the policy of the City of Peoria to encourage participation of M/WBE's on all city-funded construction projects. In complying with this clause bidders are required, when subcontracting opportunities are available, to make a good-faith effort to meet the goals established for M/WBE participation. The participation goals are cited in Section VI on the Subcontractor Utilization Statement.
- B. Failure to submit the documentation requested in Sections II and III of this document may cause (1) the bid to be rejected and determined non-responsive; (2) subject the bidders to the sanctions described in Section VIII.

**Pre-Bid Efforts when Awarding Subcontracts**

- A. Bidders are required to contact and solicit, in writing, bids from M/WBEs for available subcontracting. In seeking solicitations, bidders are to identify the portion(s) of work to be subcontracted and offer to break down any portion(s) of work into economically feasible units in order to facilitate M/WBE participation. Bidders also are to provide the name of a specific contact person in their notice to the M/WBEs. Contact shall be made prior to bid opening. The name of each company contacted, the date and method must be submitted with bid documents.

The low bidder shall provide to the City of Peoria, upon request, copies of faxes, letters, and e-mails sent to M/WBEs

- B. Bidders who are a MBE or WBE are not exempt from soliciting bids for available subcontracting. The bidder is required to contact, in writing, firms that will help the bidder meet the participation goal for the targeted group opposite to which the bidder belongs. If the bidder is identified as both a MBE and WBE, the participation goals shall be deemed to have been met.

In seeking solicitations, bidders are to identify the portion(s) of work to be subcontracted and offer to break down any portion(s) of work into economically feasible units in order to facilitate M/WBE participation. Bidders also are to provide the name of a specific contact person in their notice to the M/WBEs. Contact shall be made prior to bid opening. A list containing the name of each company contacted, the date and method must be submitted with bid documents.

The low bidder shall provide to the City of Peoria, upon request, copies of faxes, letters, and e-mails sent to M/WBEs.

### **III. Good-Faith Efforts Documentation when Utilizing Subcontractors**

- A. All Bidders must provide proof of its compliance with the pre-bid requirements and good-faith efforts to the City. Both the pre-bid documentation and the support documentation requested below must be submitted with bid documents.
1. All Bidders must submit a properly completed **“Subcontractor Utilization Statement.”** All Bidders must provide the scope of work to be performed, the dollar amount to be paid, and the percentage amount of the contract for each company listed.
  2. All Bidders must submit a list of qualified M/WBE's who submitted proposals but will not be utilized. This list must include a justification for not accepting the proposed bid.
- B. Disputes arising from the enforcement of these requirements will be resolved by the Equal Opportunity Office.

### **IV. Waiver Requirements When Self-Performing All Work**

- A. All bidders will make every effort to make subcontract opportunities available to M/WBEs. However, if such an opportunity cannot be made available, the Bidder must seek a waiver by submitting **“M/WBE Participation Waiver Request.”** The waiver request must be submitted to the City of Peoria with bid documents.
- B. For the M/WBE waiver request to receive consideration, the following supportive documentation that applies must accompany the form:

1. A narrative describing the Bidder's good faith efforts to secure M/WBE participation prior to bid opening.
2. A notarized affidavit attesting the Bidder did not receive inquiries or proposals from qualified M/WBEs in response to the required notification prior to bid opening.
3. A written explanation for why the Bidder believes no subcontracting opportunities exist. *If the City of Peoria determines that the explanation is insufficient it reserves the right to halt the bid award process to request additional information from the Bidder. The Bidder will receive the request for information in writing.*
4. A written explanation for why the Bidder believes it is impracticable to award any subcontract(s) on the project in question. *If the Equal Opportunity Office determines that the explanation is insufficient it reserves the right to halt the bid award process to request additional information from the Bidder. The Bidder will receive the request for information in writing.*

#### V. Change In Use of Subcontractors or Self-Performance Status

Before the General Contractor can deviate from utilizing any of the subcontractors listed on the Subcontractor Utilization Statement or its declared intent to self-perform, it must submit a completed **Notification of Change in Participation** form to the City of Peoria. Upon notification construction on the project may be delayed or halted until a review is conducted by the Equal Opportunity Office.

Regarding a self-performance change, if a subcontracting opportunity has been made available, the General Contractor must identify all good faith efforts made to meet the M/WBE participation goals, unless the change was due to an emergency.

#### VI. Procedures for Counting M/WBE Participation toward Goals (based upon Department of Transportation regulations)

- i. When an M/WBE participates in a contract, count only the value of the work actually performed by the M/WBE toward M/WBE participation goals.
1. Count the entire amount of that portion of a construction contract (or other contract not covered by paragraph (i)(2) of this section) that is performed by the M/WBE's own forces. Include the cost of supplies and materials obtained by the M/WBE for the work of the contract including supplies purchased or equipment leased by the M/WBE (except supplies and equipment the M/WBE subcontractor purchases or leases from the prime contractor or its affiliate).

2. Count the entire amount of fees or commissions performed by an M/WBE firm towards M/WBE goals if that firm provides the Apparent Low Bidder a bona fide professional, technical, consultant, or managerial service or provides bonds or insurance specifically required in a City of Peoria contract.
3. If an M/WBE subcontracts a portion of its work to an M/WBE, 100% of the value of the subcontracted work may be counted toward the M/WBE goal, but any portion of the work the M/WBE subcontracts to a non-M/WBE does not count toward the M/WBE goal.
  - ii. When an M/WBE participates in a joint venture on a City contract, only count the dollar value of the portion of the work that the M/WBE performs with its own forces toward M/WBE goals.
  - iii. Count expenditures to an M/WBE contractor toward M/WBE goals if, and only if, the M/WBE is performing a commercially useful function on that contract.
    1. An M/WBE performs a commercially useful function when it is responsible for performing, managing, and supervising its contracted work; moreover, with respect to materials and supplies used on the contract, it must also be responsible for negotiating its price, and purchasing and managing those supplies.
    2. An M/WBE does not perform a commercially useful function if its role is limited to that of an extra participant in a transaction, contract, or project through which funds are passed in order to obtain the appearance of M/WBE participation. It should be noted that an effort contrived to give the appearance of M/WBE participation is not considered a good faith effort and is considered an ethical violation that is subject to sanctions outlined in section V.
    3. If an M/WBE does not perform or exercise responsibility for at least 30% of the total cost of its contract with its own work force, you must presume that it is not performing a commercially useful function and the dollar amount of that work will not count toward the M/WBE goals.
    4. When an M/WBE is presumed the City of Peoria not to be performing a commercially useful function as provided in paragraph (iii)(3) of this section, the M/WBE may present evidence to rebut this presumption. Your rebuttal is subject to review by the City of Peoria.

iv. Use the following factors in determining if an M/WBE trucking company is performing a commercially useful function:

1. The M/WBE trucking company must manage and supervise the trucking work it is being paid to perform. A contrived arrangement for the purpose of giving the appearance of meeting M/WBE goals is not considered a good faith effort.
  2. The M/WBE trucking company must own and operate at least one fully licensed, insured, and operational truck used on the contract.
  3. The M/WBE trucking company receives credit for the total dollar value of the transportation services it provides on the contract using trucks it owns, insures, and operates.
  4. The M/WBE trucking company may lease trucks from another M/WBE trucking firm, including an owner-operator who is certified as an M/WBE. The M/WBE who leases trucks from another M/WBE receives total credit for the dollar value of the transportation services the M/WBE trucking lessee provides on the contract.
  5. The M/WBE trucking company may also lease trucks from a non-M/WBE trucking firm, including an owner-operator. The M/WBE who leases trucks from a non-M/WBE is only entitled to credit for the fee or commission it receives as a result of the lease arrangement. The M/WBE does not receive credit for the total dollar value of the transportation services provided by the lessee since these services are not provided by an M/WBE.
  6. A lease agreement with an M/WBE trucking firm must indicate that the M/WBE has exclusive use of and control over the truck. This does not preclude the leased truck from working for others during the term of the lease with the consent of the M/WBE, so long as the lease gives the M/WBE absolute priority for use of the leased truck. Leased trucks must display the name and identification number of the M/WBE.
- v. Count expenditures with M/WBEs for materials and supplies toward M/WBE goals in the following manner:

1. If the materials or supplies are obtained from an M/WBE manufacturer, count 100% of the cost of the materials or supplies toward M/WBE goals.

***Note: For purposes of this paragraph (v)(1), a manufacturer is a firm that operates or maintains a factory or establishment that produces, on the premises, the materials, supplies, articles, or equipment required under the***

*contract and of the general character described by the specifications.*

2. If the materials or supplies are purchased from an M/WBE regular dealer, count 60% of the cost of the materials or supplies toward M/WBE goals.

***Note: For purposes of this section, a regular dealer is a firm that owns, operates or maintains a store, warehouse, or other establishment in which the materials, supplies, articles or equipment of the general character described by the specifications and required under the contract are brought, kept in stock, and regularly sold or leased to the public in the usual course of business.***

- (A) *To be a regular dealer, the firm must be an established, regular business that engages, as its principal business and under its own name, in the purchase and sale or lease of the products in question.*
- (B) *A person may be a regular dealer in such bulk items as petroleum products, steel, cement, gravel, stone, or asphalt without owning, operating, or maintaining a place of business as provided in this paragraph (v)(2), if the person both owns and operates distribution equipment for the products. Any supplementing of regular dealers' own distribution equipment shall be by a long-term lease agreement and not on an ad hoc or contract-by-contract basis.*
- (C) *Packagers, brokers, manufacturers' representatives, or other persons who arrange or expedite transactions are not regular dealers within the meaning of the paragraph (v)(2).*

3. If materials or supplies are purchased from an M/WBE which is neither a manufacturer nor a regular dealer, count only 5% of the contract amount toward the M/WBE goals.

## VII. Record Keeping and Reporting

- A. The General Contractor and subcontractors agree to maintain records demonstrative of its good faith efforts to comply with the participation goals attached to the project. This would include, but not limited to, names of M/WBEs and non-minority firms awarded subcontracts, including dollar amount of the contract, payments to subcontractors, and weekly certified payroll reports. These records shall be made available to the City of Peoria.
- B. All information will be provided through ePrismSoft, an electronic web based compliance tracking software. Access to ePrismSoft has been furnished by the City of Peoria. To activate access, the General Contractor and subcontractors must contact Human Capital Development at [webnfo@eprismsoft.com](mailto:webnfo@eprismsoft.com) or 309/692-6400.

## VIII. Sanctions

- A. The Equal Opportunity Office may recommend the rejection of the apparent low bid where the information submitted by the Apparent Low Bidder fails to objectively demonstrate compliance with the M/WBE Good-Faith Efforts requirements. The Apparent Low Bidder will be notified of this decision and the reasons in writing. The Apparent Low Bidder may request a hearing within five (5) business days of this notice. The request must be submitted to the Equal Opportunity Office. The hearing will be held no later than seven (7) business days after receipt of request. The City Manager or designee will conduct all hearings.
- B. Upon a finding that any party has not complied with the provisions of this clause, any one or a combination of the following actions may be taken:
  1. Declare the Apparent Low Bidder non-responsive and therefore ineligible for contract award.
  2. Declare the Apparent Low Bidder ineligible for further contracts for a calendar year.
  3. File a formal complaint against Apparent Low Bidder, and/or subcontractor with the Fair Employment and Housing Commission.

org. 05/08/08 rev.  
04/17/12

## HUMAN RIGHTS ACT

The contract will be subject to and governed by the rules and regulations of the Illinois Human Rights Act, including Public Act 87-1257 (effective July 1, 1993) which requires that every bidder shall have a written sexual harassment policy that includes, at a minimum, the following information:

- a. The illegality of sexual harassment;
- b. The definition of sexual harassment under State law;
- c. A description of sexual harassment, utilizing examples;
- d. The bidder's internal complaint process including penalties;
- e. The legal recourse, investigative and complaint process available through the Illinois Department of Human Rights and the Illinois Human Rights Commission;
- f. Directions on how to contact the Department and the Commission;
- g. Protection against retaliation as provided in the Act.

Bidders are hereby placed on notice, a copy of its policy shall be provided to the Department upon request.

SAXI-93  
effective 7-1-93  
per Legal Dept

INDEX  
FOR  
SUPPLEMENTAL SPECIFICATIONS  
AND RECURRING SPECIAL PROVISIONS

Adopted January 1, 2014

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

ERRATA Standard Specifications for Road and Bridge Construction (Adopted 1-1-12) (Revised 1-1-14)

SUPPLEMENTAL SPECIFICATIONS

Std. Spec. Sec.	Page No.
101 Definition of Terms .....	1
102 Advertisement, Bidding, Award, and Contract Execution .....	2
105 Control of Work .....	3
106 Control of Materials .....	5
107 Legal Regulations and Responsibility to Public .....	6
108 Prosecution and Progress .....	14
109 Measurement and Payment .....	15
202 Earth and Rock Excavation .....	17
211 Topsoil and Compost .....	18
253 Planting Woody Plants .....	19
280 Temporary Erosion and Sediment Control .....	21
312 Stabilized Subbase .....	22
406 Hot-Mix Asphalt Binder and Surface Course .....	23
407 Hot-Mix Asphalt Pavement (Full-Depth) .....	26
420 Portland Cement Concrete Pavement .....	30
424 Portland Cement Concrete Sidewalk .....	32
440 Removal of Existing Pavement and Appurtenances .....	33
503 Concrete Structures .....	34
504 Precast Concrete Structures .....	37
506 Cleaning and Painting New Steel Structures .....	38
512 Piling .....	39
516 Drilled Shafts .....	40
521 Bearings .....	41
540 Box Culverts .....	42
588 Bridge Relief Joint System .....	43
589 Elastic Joint Sealer .....	45
602 Catch Basin, Manhole, Inlet, Drainage Structure, and Valve Vault Construction, Adjustment, and Reconstruction .....	46
603 Adjusting Frames and Grates of Drainage and Utility Structures .....	47
606 Concrete Gutter, Curb, Median, and Paved Ditch .....	49
610 Shoulder Inlets with Curb .....	50
639 Precast Prestressed Concrete Sight Screen .....	51
642 Shoulder Rumble Strips .....	52
643 Impact Attenuators .....	53
644 High Tension Cable Median Barrier .....	55
701 Work Zone Traffic Control and Protection .....	57
706 Impact Attenuators, Temporary .....	60
707 Movable Traffic Barrier .....	63
708 Temporary Water Filled Barrier .....	65
730 Wood Sign Support .....	67
780 Pavement Striping .....	68
860 Master Controller .....	73
1001 Cement .....	74
1003 Fine Aggregates .....	75
1004 Coarse Aggregates .....	77
1006 Metals .....	81
1011 Mineral Filler .....	83

1017	Packaged, Dry, Combined Materials for Mortar .....	84
1018	Packaged Rapid Hardening Mortar or Concrete .....	85
1019	Controlled Low-Strength Material .....	86
1020	Portland Cement Concrete .....	87
1024	Grout and Nonshrink Grout .....	126
1030	Hot-Mix Asphalt .....	127
1040	Drain Pipe, Tile, Drainage Mat, and Wall Drain .....	132
1042	Precast Concrete Products .....	133
1070	Foundation and Breakaway Devices .....	134
1073	Controller .....	135
1081	Materials for Planting .....	136
1082	Preformed Bearing Pads .....	137
1083	Elastomeric Bearings .....	138
1095	Pavement Markings .....	139
1101	General Equipment .....	142
1102	Hot-Mix Asphalt Equipment .....	144
1105	Pavement Marking Equipment .....	146
1106	Work Zone Traffic Control Devices .....	147

CHECK SHEET  
FOR  
RECURRING SPECIAL PROVISIONS

Adopted January 1, 2014

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

<u>CHECK SHEET #</u>	<u>RECURRING SPECIAL PROVISIONS</u>	<u>PAGE NO.</u>
1 <input type="checkbox"/> Additional State Requirements for Federal-Aid Construction Contracts (Eff. 2-1-69)(Rev. 1-1-10)	149	
2 <input type="checkbox"/> Subletting of Contracts (Federal-Aid Contracts) (Eff. 1-1-88) (Rev. 5-1-93)	152	
3 <input type="checkbox"/> EEO (Eff. 7-21-78) (Rev. 11-18-80)	153	
4 <input checked="" type="checkbox"/> Specific Equal Employment Opportunity Responsibilities Non Federal-Aid Contracts (Eff. 3-20-69) (Rev. 1-1-94)	163	
5 <input type="checkbox"/> Required Provisions - State Contracts (Eff. 4-1-65) (Rev. 1-1-13)	168	
6 <input type="checkbox"/> Asbestos Bearing Pad Removal (Eff. 11-1-03)	173	
7 <input type="checkbox"/> Asbestos Waterproofing Membrane and Asbestos Hot-Mix Asphalt Surface Removal (Eff. 6-1-89) (Rev. 1-1-09)	174	
8 <input type="checkbox"/> Haul Road Stream Crossings, Other Temporary Stream Crossings, and In-Stream Work Pads (Eff. 1-2-92) (Rev. 1-1-98)	175	
9 <input type="checkbox"/> Construction Layout Stakes Except for Bridges (Eff. 1-1-99) (Rev. 1-1-07)	176	
10 <input checked="" type="checkbox"/> Construction Layout Stakes (Eff. 5-1-93) (Rev. 1-1-07)	179	
11 <input type="checkbox"/> Use of Geotextile Fabric for Railroad Crossing (Eff. 1-1-95) (Rev. 1-1-07)	182	
12 <input type="checkbox"/> Subsealing of Concrete Pavements (Eff. 11-1-84) (Rev. 1-1-07)	184	
13 <input type="checkbox"/> Hot-Mix Asphalt Surface Correction (Eff. 11-1-87) (Rev. 1-1-09)	188	
14 <input type="checkbox"/> Pavement and Shoulder Resurfacing (Eff. 2-1-00) (Rev. 1-1-09)	190	
15 <input type="checkbox"/> PCC Partial Depth Hot-Mix Asphalt Patching (Eff. 1-1-98) (Rev. 1-1-07)	191	
16 <input type="checkbox"/> Patching with Hot-Mix Asphalt Overlay Removal (Eff. 10-1-95) (Rev. 1-1-07)	193	
17 <input type="checkbox"/> Polymer Concrete (Eff. 8-1-95) (Rev. 1-1-08)	194	
18 <input type="checkbox"/> PVC Pipeliner (Eff. 4-1-04) (Rev. 1-1-07)	196	
19 <input type="checkbox"/> Pipe Underdrains (Eff. 9-9-87) (Rev. 1-1-07)	197	
20 <input type="checkbox"/> Guardrail and Barrier Wall Delineation (Eff. 12-15-93) (Rev. 1-1-12)	198	
21 <input type="checkbox"/> Bicycle Racks (Eff. 4-1-94) (Rev. 1-1-12)	202	
22 <input type="checkbox"/> Temporary Modular Glare Screen System (Eff. 1-1-00) (Rev. 1-1-07)	204	
23 <input type="checkbox"/> Temporary Portable Bridge Traffic Signals (Eff. 8-1-03) (Rev. 1-1-07)	206	
24 <input type="checkbox"/> Work Zone Public Information Signs (Eff. 9-1-02) (Rev. 1-1-07)	208	
25 <input type="checkbox"/> Night Time Inspection of Roadway Lighting (Eff. 5-1-96)	209	
26 <input type="checkbox"/> English Substitution of Metric Bolts (Eff. 7-1-96)	210	
27 <input type="checkbox"/> English Substitution of Metric Reinforcement Bars (Eff. 4-1-96) (Rev. 1-1-03)	211	
28 <input type="checkbox"/> Calcium Chloride Accelerator for Portland Cement Concrete (Eff. 1-1-01) (Rev. 1-1-13)	212	
29 <input type="checkbox"/> Portland Cement Concrete Inlay or Overlay for Pavements (Eff. 11-1-08) (Rev. 1-1-13)	213	
30 <input type="checkbox"/> Quality Control of Concrete Mixtures at the Plant (Eff. 8-1-00) (Rev. 1-1-14)	216	
31 <input checked="" type="checkbox"/> Quality Control/Quality Assurance of Concrete Mixtures (Eff. 4-1-92) (Rev. 1-1-14)	224	
32 <input type="checkbox"/> Digital Terrain Modeling for Earthwork Calculations (Eff. 4-1-07)	240	
33 <input type="checkbox"/> Pavement Marking Removal (Eff. 4-1-09)	242	
34 <input type="checkbox"/> Preventive Maintenance – Bituminous Surface Treatment (Eff. 1-1-09) (Rev. 1-1-12)	243	
35 <input type="checkbox"/> Preventive Maintenance – Cape Seal (Eff. 1-1-09) (Rev. 1-1-12)	249	
36 <input type="checkbox"/> Preventive Maintenance – Micro-Surfacing (Eff. 1-1-09) (Rev. 1-1-12)	264	
37 <input type="checkbox"/> Preventive Maintenance – Slurry Seal (Eff. 1-1-09) (Rev. 1-1-12)	275	
38 <input type="checkbox"/> Temporary Raised Pavement Markers (Eff. 1-1-09) (Rev. 1-1-14)	285	
39 <input type="checkbox"/> Restoring Bridge Approach Pavements Using High-Density Foam (Eff. 1-1-09) (Rev. 1-1-12)	286	

CHECK SHEET  
FOR  
LOCAL ROADS AND STREETS RECURRING SPECIAL PROVISIONS

Adopted January 1, 2014

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

LOCAL ROADS AND STREETS RECURRING SPECIAL PROVISIONS

<u>CHECK SHEET #</u>		<u>PAGE NO.</u>
LRS 1	Reserved.....	290
LRS 2	<input type="checkbox"/> Furnished Excavation (Eff. 1-1-99) (Rev. 1-1-07).....	291
LRS 3	<input checked="" type="checkbox"/> Work Zone Traffic Control (Eff. 1-1-99) (Rev. 1-1-10) .....	292
LRS 4	<input checked="" type="checkbox"/> Flaggers in Work Zones (Eff. 1-1-99) (Rev. 1-1-07) .....	293
LRS 5	<input checked="" type="checkbox"/> Contract Claims (Eff. 1-1-02) (Rev. 1-1-07).....	294
LRS 6	<input type="checkbox"/> Bidding Requirements and Conditions for Contract Proposals (Eff. 1-1-02) (Rev. 1-1-13) .....	295
LRS 7	<input type="checkbox"/> Bidding Requirements and Conditions for Material Proposals (Eff. 1-1-02) (Rev. 1-1-13) .....	301
LRS 8	Reserved.....	307
LRS 9	<input type="checkbox"/> Bituminous Surface Treatments (Eff. 1-1-99) (Rev. 1-1-11).....	308
LRS 10	Reserved.....	309
LRS 11	<input checked="" type="checkbox"/> Employment Practices (Eff. 1-1-99).....	310
LRS 12	<input type="checkbox"/> Wages of Employees on Public Works (Eff. 1-1-99) (Rev. 1-1-14) .....	312
LRS 13	<input checked="" type="checkbox"/> Selection of Labor (Eff. 1-1-99)(Rev. 1-1-12) .....	314
LRS 14	<input type="checkbox"/> Paving Brick and Concrete Paver Pavements and Sidewalks (Eff. 1-1-04) (Rev. 1-1-09) .....	315
LRS 15	<input checked="" type="checkbox"/> Partial Payments (Eff. 1-1-07) .....	318
LRS 16	<input type="checkbox"/> Protests on Local Lettings (Eff. 1-1-07) (Rev. 1-1-13) .....	319
LRS 17	<input type="checkbox"/> Substance Abuse Prevention Program (Eff. 1-1-08)(Rev. 1-8-08) .....	320
LRS 18	<input type="checkbox"/> Multigrade Cold Mix Asphalt (Eff. 1-1-07) (Rev. 1-1-13).....	321

The following Special Provisions supplement the "Standard Specifications for Road and Bridge Construction", Adopted January 1, 2012, the latest edition of the "Manual on Uniform Traffic Control Devices for Streets and Highways", and the "Manual of Test Procedures of Materials" in effect on the date of invitation of bids, and the Supplemental Specifications and Recurring Special Provisions indicated on the Check Sheet included here in which apply to and govern the construction of Forrest Hill Ave. (Sec12-00362-00-PV), and in case of conflict with any part, or parts, of said Specifications, the said Special Provisions shall take precedence and shall govern.

#### **SEQUENCE OF CONSTRUCTION**

The Contractor shall submit a progress schedule to the Resident Engineer before any work begins. The schedule shall identify the proposed sequence of work, the controlling item of work for each stage, and a calendar day schedule based on typical working day conditions. The progress schedule shall be updated by the Contractor as the work proceeds. Payment under this contract may be withheld if the Contractor has not submitted a satisfactory progress schedule.

Proposed improvements shall be constructed in an orderly and continuous manner. The Contractor shall make daily progress and not interrupt construction activity unless weather or unexpected utility conflicts prevent progress. The Contractor shall be solely responsible for coordinating utility relocations and providing sufficient materials, labor and equipment to complete the project within the contract time. Once the Contractor begins to remove driveways or street pavement, the Contractor is expected to work expeditiously in completing the project. The Contractor shall inform the Resident Engineer on a weekly basis what work will be performed the next week. The Contractor shall also inform the Resident Engineer of any changes to the weekly work plan at the earliest opportunity.

The City of Peoria expects the project work to begin with construction of water main and storm drainage inlets, manholes and storm sewer. This work shall be started at the earliest opportunity and shall be accomplished without overnight lane closures. Upon completion of curb and gutter the Contractor shall remove the existing asphalt using the curb and gutter to control the milling depth and pavement cross slope. Once the existing asphalt pavement has been removed to the slope and elevation defined in the construction plans, the new hot-mix asphalt pavement shall be placed.

#### **TRAFFIC CONTROL & PROTECTION**

This work shall consist of all the furnishing of labor, materials, and equipment necessary to control and direct traffic traveling within the project limits for the purposes of protecting persons and property within the work zone from damage and injury. The Contractor's efforts shall be guided by the standard detail drawings produced by the Illinois Department of Transportation and accepted standard practice. Section 701 of the Standard Specifications provides material and equipment requirements and operational practices to be employed by the Contractor. Section 701 is modified by this special provision to remove responsibility from the Engineer and City of Peoria for the administration, approval, and consent of the traffic control.

In general, protection of the public shall be in accordance with Chapter 26, Article V of the Code of the City of Peoria, Illinois entitled "Excavation Generally," except that Sections 26-139, 26-140, 26-141 and 26-142 shall not apply.

The construction drawings do not include project specific traffic control plans to be followed by the Contractor. The Contractor shall develop traffic control plans for the various elements of work in accordance with the standard details included by reference. The traffic control measures shall be tailored to the Sequence of Work that is employed by the Contractor. The Contractor is solely responsible for traffic control and protection within the project limits from the inception of the work until the final completion. The Resident Engineer is available to the Contractor for consultation about the minimum requirements of the Standard Details and Standard Specifications.

The Contractor is expected to maintain a minimum of one lane per direction open to traffic at all times for traffic. The exception to that would be when paving operations require closure of one lane. It is absolutely necessary that one lane of roadway can be used by fire, police, and other emergency vehicles at all times under all weather conditions. The contractor shall, at all times, maintain a means for sidewalk traffic to detour the work zone. The Contractor will be responsible for scheduling his operations to provide access to all businesses located along the improvement that have current access to the street. No less than one entrance to each commercial parking lot or building shall remain open at all times during construction.

Traffic control and protection measures shall also be placed along intersecting streets to notify drivers of the construction activity of the construction activity ahead.

The Contractor shall sweep and remove any soil tracked onto the street by the end of the workday or before four (4) hours has elapsed, whichever is sooner.

All labor, materials, and equipment required to plan and implement a traffic control plan throughout the contract duration will be paid for at the contract unit price per Lump Sum for Traffic Control and Protection, (Special).

#### **CUTTING EXISTING PAVEMENTS, SIDEWALKS, AND CURB & GUTTER**

At locations where new construction will abut existing asphalt or concrete pavements, driveways, sidewalk, or curb and gutter, a uniformly straight cut shall be obtained by the use of a diamond concrete saw. The use of pneumatic tools to make these cuts will not be allowed. This work shall be considered as included in the contract unit prices for the various pay items of the proposed construction involved and no additional compensation will be allowed.

#### **PROTECTION OF EXISTING TREES**

All necessary precautions shall be taken to prevent damage to existing trees. Roots of two inch (2") diameter or more shall not be severed. Precautions shall be taken to prevent damage to the bark of existing trees by machinery or other means. Any damage shall be corrected as directed by the Engineer at the expense of the Contractor.

#### **ABANDONED EXISTING STORM SEWER PIPES**

Where existing storm sewers are to be abandoned in place, the remaining pipe opening shall be sealed using concrete or brick masonry units and grout to prevent the infiltration of ground water into the abandoned pipe. Connections to the existing box culverts shall also be sealed if the existing storm sewers are being removed or abandoned. This work will not be paid for separately but will be considered as included in the contract unit prices for the various storm sewer pay items and no additional compensation will be allowed.

#### **SALVAGEABLE MATERIALS**

All materials deemed salvageable by the Engineer shall remain the property of the City of Peoria and shall be stored on the job site as directed by the Engineer. The Contractor shall dispose of any materials off site that the Engineer determines should not be salvaged. This work will not be paid for separately and is considered to be included in the cost of the various removal items.

**BITUMINOUS MATERIALS COST ADJUSTMENTS (BDE) (RETURN FORM WITH BID)**

Effective: November 2, 2006

Revised: August 1, 2013

**Description.** Bituminous material cost adjustments will be made to provide additional compensation to the Contractor, or credit to the Department, for fluctuations in the cost of bituminous materials when optioned by the Contractor. The adjustments shall apply to permanent and temporary hot-mix asphalt (HMA) mixtures, bituminous surface treatments (cover and seal coats), and preventative maintenance type surface treatments. The adjustments shall not apply to bituminous prime coats, tack coats, crack filling/sealing, or joint filling/sealing.

The bidder shall indicate on the attached form whether or not this special provision will be part of the contract and submit the completed form with his/her bid. Failure to submit the form, or failure to fill out the form completely, shall make this contract exempt of bituminous materials cost adjustments.

**Method of Adjustment.** Bituminous materials cost adjustments will be computed as follows.

$$CA = (BPI_P - BPI_L) \times (\%AC_V / 100) \times Q$$

Where: CA = Cost Adjustment, \$.

$BPI_P$  = Bituminous Price Index, as published by the Department for the month the work is performed, \$/ton (\$/metric ton).

$BPI_L$  = Bituminous Price Index, as published by the Department for the month prior to the letting, \$/ton (\$/metric ton).

$\%AC_V$  = Percent of virgin Asphalt Cement in the Quantity being adjusted. For HMA mixtures, the  $\% AC_V$  will be determined from the adjusted job mix formula. For bituminous materials applied, a performance graded or cutback asphalt will be considered to be 100%  $AC_V$  and undiluted emulsified asphalt will be considered to be 65%  $AC_V$ .

Q = Authorized construction Quantity, tons (metric tons) (see below).

For HMA mixtures measured in square yards:  $Q, \text{ tons} = A \times D \times (G_{mb} \times 46.8) / 2000$ . For HMA mixtures measured in square meters:  $Q, \text{ metric tons} = A \times D \times (G_{mb} \times 1) / 1000$ . When computing adjustments for full-depth HMA pavement, separate calculations will be made for the binder and surface courses to account for their different  $G_{mb}$  and  $\% AC_V$ .

For bituminous materials measured in gallons:  $Q, \text{ tons} = V \times 8.33 \text{ lb/gal} \times SG / 2000$

For bituminous materials measured in liters:  $Q, \text{ metric tons} = V \times 1.0 \text{ kg/L} \times SG / 1000$

Where: A = Area of the HMA mixture, sq yd (sq m).  
D = Depth of the HMA mixture, in. (mm).  
 $G_{mb}$  = Average bulk specific gravity of the mixture, from the approved mix design.  
V = Volume of the bituminous material, gal (L).  
SG = Specific Gravity of bituminous material as shown on the bill of lading.

Basis of Payment. Bituminous materials cost adjustments may be positive or negative but will only be made when there is a difference between the  $BPI_L$  and  $BPI_P$  in excess of five percent, as calculated by:

$$\text{Percent Difference} = \{(BPI_L - BPI_P) \div BPI_L\} \times 100$$

Bituminous materials cost adjustments will be calculated for each calendar month in which applicable bituminous material is placed; and will be paid or deducted when all other contract requirements for the work placed during the month are satisfied. The adjustments shall not apply during contract time subject to liquidated damages for completion of the entire contract.

Return With Bid

**ILLINOIS DEPARTMENT  
OF TRANSPORTATION**

**OPTION FOR  
BITUMINOUS MATERIALS COST ADJUSTMENTS**

The bidder shall submit this completed form with his/her bid. Failure to submit the form, or failure to fill out the form completely, shall make this contract exempt of bituminous materials 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?

Yes  No

**Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

60602

606.02

### **CONCRETE GUTTER, CURB, MEDIAN, AND PAVED DITCH (BDE)**

Effective: April 1, 2014

Revised: August 1, 2014

Add the following to Article 606.02 of the Standard Specifications:

"(i) Polyurethane Joint Sealant ..... 1050.04"

Revise the fifth paragraph of Article 606.07 of the Standard Specifications to read:

"Transverse contraction and longitudinal construction joints shall be sealed according to Article 420.12, except transverse joints in concrete curb and gutter shall be sealed with polysulfide or polyurethane joint sealant."

Add the following to Section 1050 of the Standard Specifications:

**"1050.04 Polyurethane Joint Sealant.** The joint sealant shall be a polyurethane sealant, Type S, Grade NS, Class 25 or better, Use T ( $T_1$  or  $T_2$ ), according to ASTM C 920."

102005a

1020.05a

### **CONCRETE MIX DESIGN – DEPARTMENT PROVIDED (BDE)**

Effective: January 1, 2012

Revised: January 1, 2014

For the concrete mix design requirements in Article 1020.05(a) of the Supplemental Specifications and Recurring Special Provisions, the Contractor has the option to request the Engineer determine mix design material proportions for Class PV, PP, RR, BS, DS, SC, and SI concrete. A single mix design for each class of concrete will be provided. Acceptance by the Contractor to use the mix design developed by the Engineer shall not relieve the Contractor from meeting specification requirements.

## FRICTION AGGREGATE (BDE)

Effective: January 1, 2011

Revise Article 1004.01(a)(4) of the Standard Specifications to read:

- “(4) Crushed Stone. Crushed stone shall be the angular fragments resulting from crushing undisturbed, consolidated deposits of rock by mechanical means. Crushed stone shall be divided into the following, when specified.
- a. Carbonate Crushed Stone. Carbonate crushed stone shall be either dolomite or limestone. Dolomite shall contain 11.0 percent or more magnesium oxide (MgO). Limestone shall contain less than 11.0 percent magnesium oxide (MgO).
  - b. Crystalline Crushed Stone. Crystalline crushed stone shall be either metamorphic or igneous stone, including but is not limited to, quartzite, granite, rhyolite and diabase.”

Revise Article 1004.03(a) of the Standard Specifications to read:

**“1004.03 Coarse Aggregate for Hot-Mix Asphalt (HMA).** The aggregate shall be according to Article 1004.01 and the following.

(a) Description. The coarse aggregate for HMA shall be according to the following table.

Use	Mixture	Aggregates Allowed
Class A	Seal or Cover	<u>Allowed Alone or in Combination:</u> Gravel Crushed Gravel Carbonate Crushed Stone Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Steel Slag Crushed Concrete
HMA All Other	Stabilized Subbase or Shoulders	<u>Allowed Alone or in Combination:</u> Gravel Crushed Gravel Carbonate Crushed Stone Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Steel Slag <sup>1/</sup> Crushed Concrete

Use	Mixture	Aggregates Allowed
HMA High ESAL Low ESAL	Binder IL-25.0, IL-19.0, or IL-19.0L  SMA Binder	<u>Allowed Alone or in Combination:</u>  Crushed Gravel Carbonate Crushed Stone <sup>2/</sup> Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Concrete <sup>3/</sup>
HMA High ESAL Low ESAL	C Surface and Leveling Binder IL-12.5, IL-9.5, or IL-9.5L  SMA Ndesign 50 Surface	<u>Allowed Alone or in Combination:</u>  Crushed Gravel Carbonate Crushed Stone <sup>2/</sup> Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Steel Slag <sup>4/</sup> Crushed Concrete <sup>3/</sup>
HMA High ESAL	D Surface and Leveling Binder IL-12.5 or IL-9.5  SMA Ndesign 50 Surface	<u>Allowed Alone or in Combination:</u>  Crushed Gravel Carbonate Crushed Stone (other than Limestone) <sup>2/</sup> Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) <sup>5/</sup> Crushed Steel Slag <sup>4/ 5/</sup> Crushed Concrete <sup>3/</sup>  <u>Other Combinations Allowed:</u>  <i>Up to...</i> <i>With...</i> 25% Limestone      Dolomite 50% Limestone      Any Mixture D aggregate other than Dolomite 75% Limestone      Crushed Slag (ACBF) <sup>5/</sup> or Crushed Sandstone
HMA High ESAL	E Surface IL-12.5 or IL-9.5  SMA Ndesign 80 Surface	<u>Allowed Alone or in Combination:</u>  Crushed Gravel Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) <sup>5/</sup> Crushed Steel Slag <sup>5/</sup> Crushed Concrete <sup>3/</sup>  No Limestone.

Use	Mixture	Aggregates Allowed	
<u>Other Combinations Allowed:</u>			
		<i>Up to...</i>	<i>With...</i>
		50% Dolomite <sup>2/</sup>	Any Mixture E aggregate
		75% Dolomite <sup>2/</sup>	Crushed Sandstone, Crushed Slag (ACBF) <sup>5/</sup> , Crushed Steel Slag <sup>5/</sup> , or Crystalline Crushed Stone
		75% Crushed Gravel or Crushed Concrete <sup>3/</sup>	Crushed Sandstone, Crystalline Crushed Stone, Crushed Slag (ACBF) <sup>5/</sup> , or Crushed Steel Slag <sup>5/</sup>
HMA High ESAL	F Surface IL-12.5 or IL-9.5  SMA Ndesign 80 Surface	<u>Allowed Alone or in Combination:</u>	
		Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) <sup>5/</sup> Crushed Steel Slag <sup>5/</sup> No Limestone.	
<u>Other Combinations Allowed:</u>			
		<i>Up to...</i>	<i>With...</i>
		50% Crushed Gravel, Crushed Concrete <sup>3/</sup> , or Dolomite <sup>2/</sup>	Crushed Sandstone, Crushed Slag (ACBF) <sup>5/</sup> , Crushed Steel Slag <sup>5/</sup> , or Crystalline Crushed Stone

- 1/ Crushed steel slag allowed in shoulder surface only.
- 2/ Carbonate crushed stone shall not be used in SMA Ndesign 80. In SMA Ndesign 50, carbonate crushed stone shall not be blended with any of the other aggregates allowed alone in Ndesign 50 SMA binder or Ndesign 50 SMA surface.
- 3/ Crushed concrete will not be permitted in SMA mixes.
- 4/ Crushed steel slag shall not be used as leveling binder.
- 5/ When either slag is used, the blend percentages listed shall be by volume."

**GRANULAR MATERIALS (BDE)**

Effective: November 1, 2012

Revise the title of Article 1003.04 of the Standard Specifications to read:

**"1003.04 Fine Aggregate for Bedding, Trench Backfill, Embankment, Porous Granular Backfill, Sand Backfill for Underdrains, and French Drains."**

Revise Article 1003.04(c) of the Standard Specifications to read:

"(c) Gradation. The fine aggregate gradations for granular embankment, granular backfill, bedding, and trench backfill for pipe culverts and storm sewers shall be FA 1, FA 2, or FA 6 through FA 21.

The fine aggregate gradation for porous granular embankment, porous granular backfill, french drains, and sand backfill for underdrains shall be FA 1, FA 2, or FA 20, except the percent passing the No. 200 (75  $\mu\text{m}$ ) sieve shall be  $2\pm 2$ ."

Revise Article 1004.05(c) of the Standard Specifications to read:

"(c) Gradation. The coarse aggregate gradations shall be as follows.

Application	Gradation
Blotter	CA 15
Granular Embankment, Granular Backfill, Bedding, and Trench Backfill for Pipe Culverts and Storm Sewers	CA 6, CA 9, CA 10, CA 12, CA 17, CA 18, and CA 19
Porous Granular Embankment, Porous Granular Backfill, and French Drains	CA 7, CA 8, CA 11, CA 15, CA 16 and CA 18"

## HOT-MIX ASPHALT - DENSITY TESTING OF LONGITUDINAL JOINTS (BDE)

Effective: January 1, 2010

Revised: April 1, 2012

Description. This work shall consist of testing the density of longitudinal joints as part of the quality control/quality assurance (QC/QA) of hot-mix asphalt (HMA). Work shall be according to Section 1030 of the Standard Specifications except as follows.

Quality Control/Quality Assurance (QC/QA). Delete the second and third sentence of the third paragraph of Article 1030.05(d)(3) of the Standard Specifications.

Add the following paragraphs to the end of Article 1030.05(d)(3) of the Standard Specifications:

"Longitudinal joint density testing shall be performed at each random density test location. Longitudinal joint testing shall be located at a distance equal to the lift thickness or a minimum of 4 in. (100 mm), from each pavement edge. (i.e. for a 5 in. (125 mm) lift the near edge of the density gauge or core barrel shall be within 5 in. (125 mm) from the edge of pavement.) Longitudinal joint density testing shall be performed using either a correlated nuclear gauge or cores.

- a. Confined Edge. Each confined edge density shall be represented by a one-minute nuclear density reading or a core density and shall be included in the average of density readings or core densities taken across the mat which represents the Individual Test.
- b. Unconfined Edge. Each unconfined edge joint density shall be represented by an average of three one-minute density readings or a single core density at the given density test location and shall meet the density requirements specified herein. The three one-minute readings shall be spaced ten feet apart longitudinally along the unconfined pavement edge and centered at the random density test location."

Revise the Density Control Limits table in Article 1030.05(d)(4) of the Standard Specifications to read:

"Mixture Composition	Parameter	Individual Test (includes confined edges)	Unconfined Edge Joint Density Minimum
IL-4.75	$N_{design} = 50$	93.0 – 97.4%	91.0%
IL-9.5, IL-12.5	$N_{design} \geq 90$	92.0 – 96.0%	90.0%
IL-9.5, IL-9.5L, IL-12.5	$N_{design} < 90$	92.5 – 97.4%	90.0%
IL-19.0, IL-25.0	$N_{design} \geq 90$	93.0 – 96.0%	90.0%
IL-19.0, IL-19.0L, IL-25.0	$N_{design} < 90$	93.0 – 97.4%	90.0%
SMA	$N_{design} = 50 \text{ & } 80$	93.5 – 97.4%	91.0%
All Other	$N_{design} = 30$	93.0 - 97.4%	90.0%"

55000

550.00

## **LRFD STORM SEWER BURIAL TABLES (BDE)**

Effective: November 1, 2013

Revise Article 550.02 of the Standard Specifications to read as follows:

"Item	Article Section
(a) Clay Sewer Pipe	1040.02
(b) Extra Strength Clay Pipe	1040.02
(c) Concrete Sewer, Storm Drain, and Culvert Pipe	1042
(d) Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe	1042
(e) Reinforced Concrete Elliptical Culvert, Storm Drain, and Sewer Pipe (Note 1) .....	1042
(f) Reinforced Concrete Arch Culvert, Storm Drain, and Sewer Pipe (Note 1)	1042
(g) Polyvinyl Chloride (PVC) Pipe	1040.03
(h) Corrugated Polyvinyl Chloride (PVC) Pipe with a Smooth Interior	1040.03
(i) Corrugated Polypropylene (CPP) Pipe with Smooth Interior	1040.07
(j) Rubber Gaskets and Preformed Flexible Joint Sealants for Concrete Pipe .....	1056
(k) Mastic Joint Sealer for Pipe	1055
(l) External Sealing Band	1057
(m) Fine Aggregate (Note 2)	1003.04
(n) Coarse Aggregate (Note 3)	1004.05
(o) Reinforcement Bars and Welded Wire Fabric	1006.10
(p) Handling Hole Plugs	1042.16
(q) Polyethylene (PE) Pipe with a Smooth Interior	1040.04
(r) Corrugated Polyethylene (PE) Pipe with a Smooth Interior	1040.04

Note 1. The class of elliptical and arch pipe used for various storm sewer sizes and heights of fill shall conform to the requirements for circular pipe.

Note 2. The fine aggregate shall be moist.

Note 3. The coarse aggregate shall be wet."

Revise the table for permitted materials in Article 550.03 of the Standard Specifications as follows:

"Class	Materials
A	Rigid Pipes: Clay Sewer Pipe Extra Strength Clay Pipe Concrete Sewer, Storm Drain, and Culvert Pipe Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe Reinforced Concrete Elliptical Culvert, Storm Drain, and Sewer Pipe Reinforced Concrete Arch Culvert, Storm Drain, and Sewer Pipe
B	Rigid Pipes: Clay Sewer Pipe Extra Strength Clay Pipe Concrete Sewer, Storm Drain, and Culvert Pipe Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe Reinforced Concrete Elliptical Culvert, Storm Drain, and Sewer Pipe Reinforced Concrete Arch Culvert, Storm Drain, and Sewer Pipe Flexible Pipes: Polyvinyl Chloride (PVC) Pipe Corrugated Polyvinyl Chloride Pipe (PVC) with a Smooth Interior Polyethylene (PE) Pipe with a Smooth Interior Corrugated Polyethylene (PE) Pipe with a Smooth Interior Corrugated Polypropylene (CPP) Pipe with a Smooth Interior"

Replace the storm sewers tables in Article 550.03 of the Standard Specifications with the following:

STORM SEWERS KIND OF MATERIAL PERMITTED AND STRENGTH REQUIRED FOR A GIVEN PIPE DIAMETERS AND FILL HEIGHTS OVER THE TOP OF THE PIPE																	
Nominal Diameter in.	Type 1								Type 2								
	Fill Height: 3' and less With 1' minimum cover								Fill Height: Greater than 3' not exceeding 10'								
	RCCP	CSP	ESCP	PVC	CPVC	PE	CPE	CPP	RCCP	CSP	ESCP	PVC	CPVC	PE	CPE	CPP	
10	NA	3	X	X	X	X	X	NA	NA	1	*X	X	X	X	X	NA	
12	IV	NA	X	X	X	X	X	X	II	1	*X	X	X	X	X	X	
15	IV	NA	NA	X	X	NA	X	X	II	1	*X	X	X	NA	X	X	
18	IV	NA	NA	X	X	X	X	X	II	2	X	X	X	X	X	X	
21	III	NA	NA	X	X	NA	NA	NA	II	2	X	X	X	NA	NA	NA	
24	III	NA	NA	X	X	X	X	X	II	2	X	X	X	X	X	X	
27	III	NA	NA	NA	NA	NA	NA	NA	II	3	X	NA	NA	NA	NA	NA	
30	IV	NA	NA	X	X	X	X	X	II	3	X	X	X	X	X	X	
33	III	NA	NA	NA	NA	NA	NA	NA	II	NA	X	NA	NA	NA	NA	NA	
36	III	NA	NA	X	X	X	X	X	II	NA	X	X	X	X	NA	X	
42	II	NA	X	X	NA	X	X	NA	II	NA	X	X	NA	X	NA	NA	
48	II	NA	X	X	NA	X	X	NA	II	NA	X	X	NA	X	NA	NA	
54	II	NA	NA	NA	NA	NA	NA	NA	II	NA	NA	NA	NA	NA	NA	NA	
60	II	NA	NA	NA	NA	NA	NA	NA	X	II	NA	NA	NA	NA	NA	X	
66	II	NA	NA	NA	NA	NA	NA	NA	X	II	NA	NA	NA	NA	NA	NA	
72	II	NA	NA	NA	NA	NA	NA	NA	X	II	NA	NA	NA	NA	NA	NA	
78	II	NA	NA	NA	NA	NA	NA	NA	X	II	NA	NA	NA	NA	NA	NA	
84	II	NA	NA	NA	NA	NA	NA	NA	X	II	NA	NA	NA	NA	NA	NA	
90	II	NA	NA	NA	NA	NA	NA	NA	X	III	NA	NA	NA	NA	NA	NA	
96	II	NA	NA	NA	NA	NA	NA	NA	X	III	NA	NA	NA	NA	NA	NA	
102	II	NA	NA	NA	NA	NA	NA	NA	X	III	NA	NA	NA	NA	NA	NA	
108	II	NA	NA	NA	NA	NA	NA	NA	X	III	NA	NA	NA	NA	NA	NA	

RCCP Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe

CSP Concrete Sewer, Storm drain, and Culvert Pipe

PVC Polyvinyl Chloride Pipe

CPVC Corrugated Polyvinyl Chloride Pipe

ESCP Extra Strength Clay Pipe

PE Polyethylene Pipe with a Smooth Interior

CPE Corrugated Polyethylene Pipe with a Smooth Interior

CPP Corrugated Polypropylene pipe with a Smooth Interior

X This material may be used for the given pipe diameter and fill height.

NA This material is Not Acceptable for the given pipe diameter and fill height.

\* May also use Standard Strength Clay Pipe

STORM SEWERS (Metric) KIND OF MATERIAL PERMITTED AND STRENGTH REQUIRED FOR A GIVEN PIPE DIAMETERS AND FILL HEIGHTS OVER THE TOP OF THE PIPE																		
Nominal Diameter in.	Type 1								Type 2									
	Fill Height: 1 m <sup>1</sup> and less With 300 mm minimum cover								Fill Height: Greater than 1 m not exceeding 3 m									
	RCCP	CSP	ESCP	PVC	CPVC	PE	CPE	CPP	RCCP	CSP	ESCP	PVC	CPVC	PE	CPE	CPP		
250	NA	3	X	X	X	X	X	NA	NA	1	*X	X	X	X	X	NA		
300	IV	NA	X	X	X	X	X	X	II	1	*X	X	X	X	X	X		
375	IV	NA	NA	X	X	NA	X	X	II	1	*X	X	X	NA	X	X		
450	IV	NA	NA	X	X	X	X	X	II	2	X	X	X	X	X	X		
525	III	NA	NA	X	X	NA	NA	NA	II	2	X	X	X	NA	NA	NA		
600	III	NA	NA	X	X	X	X	X	II	2	X	X	X	X	X	X		
675	III	NA	NA	NA	NA	NA	NA	NA	II	3	X	NA	NA	NA	NA	NA		
750	IV	NA	NA	X	X	X	X	X	II	3	X	X	X	X	X	X		
825	III	NA	NA	NA	NA	NA	NA	NA	II	NA	X	NA	NA	NA	NA	NA		
900	III	NA	NA	X	X	X	X	X	II	NA	X	X	X	X	X	X		
1050	II	NA	X	X	NA	X	X	NA	II	NA	X	X	X	NA	X	NA		
1200	II	NA	X	X	NA	X	X	X	II	NA	X	X	X	NA	X	NA		
1350	II	NA	NA	NA	NA	NA	NA	NA	II	NA	NA	NA	NA	NA	NA	NA		
1500	II	NA	NA	NA	NA	NA	NA	NA	II	NA	NA	NA	NA	NA	NA	NA	X	
1650	II	NA	NA	NA	NA	NA	NA	NA	II	NA	NA	NA	NA	NA	NA	NA	NA	
1800	II	NA	NA	NA	NA	NA	NA	NA	II	NA	NA	NA	NA	NA	NA	NA	NA	
1950	II	NA	NA	NA	NA	NA	NA	NA	II	NA	NA	NA	NA	NA	NA	NA	NA	
2100	II	NA	NA	NA	NA	NA	NA	NA	II	NA	NA	NA	NA	NA	NA	NA	NA	
2250	II	NA	NA	NA	NA	NA	NA	NA	III	NA	NA	NA	NA	NA	NA	NA	NA	
2400	II	NA	NA	NA	NA	NA	NA	NA	III	NA	NA	NA	NA	NA	NA	NA	NA	
2550	II	NA	NA	NA	NA	NA	NA	NA	III	NA	NA	NA	NA	NA	NA	NA	NA	
2700	II	NA	NA	NA	NA	NA	NA	NA	III	NA	NA	NA	NA	NA	NA	NA	NA	

RCCP Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe

CSP Concrete Sewer, Storm drain, and Culvert Pipe

PVC Polyvinyl Chloride Pipe

CPVC Corrugated Polyvinyl Chloride Pipe

ESCP Extra Strength Clay Pipe

PE Polyethylene Pipe with a Smooth Interior

CPE Corrugated Polyethylene Pipe with a Smooth Interior

CPP Corrugated Polypropylene pipe with a Smooth Interior

X This material may be used for the given pipe diameter and fill height.

NA This material is Not Acceptable for the given pipe diameter and fill height.

\* May also use Standard Strength Clay Pipe

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

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

RCCP Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe

CSP Concrete Sewer, Storm drain, and Culvert Pipe

PVC Polyvinyl Chloride Pipe

CPVC Corrugated Polyvinyl Chloride Pipe

ESCP Extra Strength Clay Pipe

PE Polyethylene Pipe with a Smooth Interior

CPE Corrugated Polyethylene Pipe with a Smooth Interior

CPP Corrugated Polypropylene pipe with a Smooth Interior

X This material may be used for the given pipe diameter and fill height.

NA This material is Not Acceptable for the given pipe diameter and fill height.

\* May also use Standard Strength Clay Pipe

Note RCCP with a number instead of a Roman numeral shall be furnished according to AASHTO M170 Section 6. This number represents the D-load to produce a 0.01 in crack.

STORM SEWERS (metric) KIND OF MATERIAL PERMITTED AND STRENGTH REQUIRED FOR A GIVEN PIPE DIAMETERS AND FILL HEIGHTS OVER THE TOP OF THE PIPE																
Nominal Diameter in.	Type 3								Type 4							
	Fill Height: Greater than 3 m not exceeding 4.5 m								Fill Height: Greater than 4.5 m not exceeding 6 m							
	RCCP	CSP	ESCP	PVC	CPVC	PE	CPE	CPP	RCCP	CSP	ESCP	PVC	CPVC	PE	CPP	
250	NA	2	X	X	X	X	X	NA	NA	3	X	X	X	X	NA	
300	III	2	X	X	X	X	NA	X	IV	NA	NA	X	X	X	NA	
375	III	3	X	X	X	NA	NA	X	IV	NA	NA	X	X	NA	X	
450	III	NA	X	X	X	X	NA	X	IV	NA	NA	X	X	X	NA	
525	III	NA	NA	X	X	NA	NA	NA	IV	NA	NA	X	X	NA	NA	
600	III	NA	NA	X	X	X	NA	NA	IV	NA	NA	X	X	X	NA	
675	III	NA	NA	NA	NA	NA	NA	NA	IV	NA	NA	NA	NA	NA	NA	
750	III	NA	NA	X	X	X	NA	X	IV	NA	NA	X	X	X	NA	
825	III	NA	NA	NA	NA	NA	NA	NA	IV	NA	NA	NA	NA	NA	NA	
900	III	NA	NA	X	X	X	NA	NA	IV	NA	NA	X	X	X	NA	
1050	III	NA	NA	X	NA	X	NA	NA	IV	NA	NA	X	NA	X	NA	
1200	III	NA	NA	X	NA	X	NA	NA	IV	NA	NA	X	NA	X	NA	
1350	III	NA	NA	NA	NA	NA	NA	NA	IV	NA	NA	NA	NA	NA	NA	
1500	III	NA	NA	NA	NA	NA	NA	NA	IV	NA	NA	NA	NA	NA	NA	
1650	III	NA	NA	NA	NA	NA	NA	NA	IV	NA	NA	NA	NA	NA	NA	
1800	III	NA	NA	NA	NA	NA	NA	NA	IV	NA	NA	NA	NA	NA	NA	
1950	III	NA	NA	NA	NA	NA	NA	NA	IV	NA	NA	NA	NA	NA	NA	
2100	III	NA	NA	NA	NA	NA	NA	NA	IV	NA	NA	NA	NA	NA	NA	
2250	III	NA	NA	NA	NA	NA	NA	NA	80	NA	NA	NA	NA	NA	NA	
2400	III	NA	NA	NA	NA	NA	NA	NA	80	NA	NA	NA	NA	NA	NA	
2550	IV	NA	NA	NA	NA	NA	NA	NA	80	NA	NA	NA	NA	NA	NA	
2700	70	NA	NA	NA	NA	NA	NA	NA	80	NA	NA	NA	NA	NA	NA	

RCCP

Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe  
Concrete Sewer, Storm drain, and Culvert Pipe

CSP

Polyvinyl Chloride Pipe

PVC

Corrugated Polyvinyl Chloride Pipe

CPVC

Extra Strength Clay Pipe

ESCP

Polyethylene Pipe with a Smooth Interior

PE

Corrugated Polyethylene Pipe with a Smooth Interior

CPE

Corrugated Polypropylene pipe with a Smooth Interior

CPP

This material may be used for the given pipe diameter and

X

fill height.

NA

This material is Not Acceptable for the given pipe diameter

and fill height.

\*

May also use Standard Strength Clay Pipe

Note RCCP with a number instead of a Roman numeral shall be furnished according to AASHTO M170 Section 6. This number represents the metric D-load to produce a 25.4 micro-meter crack.

Nominal Diameter in.	STORM SEWERS KIND OF MATERIAL PERMITTED AND STRENGTH REQUIRED FOR A GIVEN PIPE DIAMETERS AND FILL HEIGHTS OVER THE TOP OF THE PIPE							
	Type 5 Fill Height: Greater than 20' not exceeding 25'			Type 6 Fill Height: Greater than 25' not exceeding 30'			Type 7 Fill Height: Greater than 30' not exceeding 35'	
	RCCP	PVC	CPVC	RCCP	PVC	CPVC	RCCP	CPVC
10	NA	X	X	NA	X	X	NA	X
12	IV	X	X	V	X	X	V	X
15	IV	X	X	V	X	X	V	X
18	IV	X	X	V	X	X	V	X
21	IV	X	X	V	X	X	V	X
24	IV	X	X	V	X	X	V	X
27	IV	NA	NA	V	NA	NA	V	NA
30	IV	X	X	V	X	X	V	X
33	IV	NA	NA	V	NA	NA	V	NA
36	IV	X	X	V	X	X	V	X
42	IV	X	NA	V	X	NA	V	NA
48	IV	X	NA	V	X	NA	V	NA
54	IV	NA	NA	V	NA	NA	V	NA
60	IV	NA	NA	V	NA	NA	V	NA
66	IV	NA	NA	V	NA	NA	V	NA
72	V	NA	NA	V	NA	NA	V	NA
78	2020	NA	NA	2370	NA	NA	2730	NA
84	2020	NA	NA	2380	NA	NA	2740	NA
90	2030	NA	NA	2390	NA	NA	2750	NA
96	2040	NA	NA	2400	NA	NA	2750	NA
102	2050	NA	NA	2410	NA	NA	2760	NA
108	2060	NA	NA	2410	NA	NA	2770	NA

RCCP Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe

PVC Polyvinyl Chloride Pipe

CPVC Corrugated Polyvinyl Chloride Pipe

ESCP Extra Strength Clay Pipe

X This material may be used for the given pipe diameter and fill height.

NA This material is Not Acceptable for the given pipe diameter and fill height.

Note RCCP with a number instead of a Roman numeral shall be furnished according to AASHTO M170 Section 6. This number represents the D-load to produce a 0.01 in crack.

STORM SEWERS (metric) KIND OF MATERIAL PERMITTED AND STRENGTH REQUIRED FOR A GIVEN PIPE DIAMETERS AND FILL HEIGHTS OVER THE TOP OF THE PIPE								
Nominal Diameter in.	Type 5			Type 6			Type 7	
	Fill Height: Greater than 20' not exceeding 25'			Fill Height: Greater than 25' not exceeding 30'			Fill Height: Greater than 30' not exceeding 35'	
	RCCP	PVC	CPVC	RCCP	PVC	CPVC	RCCP	CPVC
250	NA	X	X	NA	X	X	NA	X
300	IV	X	X	V	X	X	V	X
375	IV	X	X	V	X	X	V	X
450	IV	X	X	V	X	X	V	X
525	IV	X	X	V	X	X	V	X
600	IV	X	X	V	X	X	V	X
675	IV	NA	NA	V	NA	NA	V	NA
750	IV	X	X	V	X	X	V	X
825	IV	NA	NA	V	NA	NA	V	NA
900	IV	X	X	V	X	X	V	X
1050	IV	X	NA	V	X	NA	V	NA
1200	IV	X	NA	V	X	NA	V	NA
1350	IV	NA	NA	V	NA	NA	V	NA
1500	IV	NA	NA	V	NA	NA	V	NA
1650	IV	NA	NA	V	NA	NA	V	NA
1800	V	NA	NA	V	NA	NA	V	NA
1950	100	NA	NA	110	NA	NA	130	NA
2100	100	NA	NA	110	NA	NA	130	NA
2250	100	NA	NA	110	NA	NA	130	NA
2400	100	NA	NA	120	NA	NA	130	NA
2550	100	NA	NA	120	NA	NA	130	NA
2700	100	NA	NA	120	NA	NA	130	NA

RCCP Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe

PVC Polyvinyl Chloride Pipe

CPVC Corrugated Polyvinyl Chloride Pipe

ESCP Extra Strength Clay Pipe

X This material may be used for the given pipe diameter and fill height.

NA This material is Not Acceptable for the given pipe diameter and fill height.

Note RCCP with a number instead of a Roman numeral shall be furnished according to AASHTO M170 Section 6. This number represents the metric D-load to produce a 25.4 micro-meter crack.

Revise the sixth paragraph of Article 550.06 of the Standard Specifications to read:

“PVC, PE and CPP pipes shall be joined according to the manufacturer’s specifications.”

Revise the first and second paragraphs of Article 550.08 of the Standard Specifications to read:

**“550.08 Deflection Testing for Storm Sewers.** All PVC, PE, and CPP storm sewers shall be tested for deflection not less than 30 days after the pipe is installed and the backfill compacted. The testing shall be performed in the presence of the Engineer.

For PVC, PE, and CPP storm sewers with diameters 24 in. (600 mm) or smaller, a mandrel drag shall be used for deflection testing. For PVC, PE, and CPP storm sewers with diameters over 24 in. (600 mm), deflection measurements other than by a mandrel shall be used.”

Revise the fifth paragraph of Article 550.08 to read as follows.

“The outside diameter of the mandrel shall be 95 percent of the base inside diameter. For all PVC pipe the base inside diameter shall be defined using ASTM D 3034 methodology. For all PE and CPP pipe, the base inside diameter shall be defined as the average inside diameter based on the minimum and maximum tolerances specified in the corresponding ASTM or AASHTO material specifications.”

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

**“1040.03 Polyvinyl Chloride (PVC) Pipe.** Acceptance testing of PVC pipe and fittings shall be accomplished during the same construction season in which they are installed. The section properties shall be according to the manufacturer pre-submitted geometric properties on file with the Department. The manufacturer shall submit written certification that the material meets those properties. The pipe shall meet the following additional requirements.”

Delete Articles 1040.03(e) and (f) of the Standard Specifications.

Revise Articles 1040.04(c) and (d) of the Standard Specifications to read:

(c) **PE Profile Wall Pipe for Insertion Lining.** The pipe shall be according to ASTM F 894. When used for insertion lining of pipe culverts, the pipe liner shall have a minimum pipe stiffness of 46 psi (317 kPa) at five percent deflection for nominal inside diameters of 42 in. (1050 mm) or less. For nominal inside diameters of greater than 42 in. (1050 mm), the pipe liner shall have a minimum pipe stiffness of 32.5 psi (225 kPa) at five percent deflection. All sizes shall have wall construction that presents essentially smooth internal and external surfaces.

(d) **PE Pipe with a Smooth Interior.** The pipe shall be according to ASTM F 714 (DR 32.5) with a minimum cell classification of PE 335434 as defined in ASTM D 3350. The section properties shall be according to the manufacturer pre-submitted geometric properties on file with the Department. The manufacturer shall submit written certification that the material meets those properties and the resin used to manufacture the pipe meets or exceeds the minimum cell classification requirements.”

Add the following to Section 1040 of the Standard Specifications:

**“1040.08 Polypropylene (PP) Pipe.** Storage and handling shall be according to the manufacturer’s recommendations, except in no case shall the pipe be exposed to direct sunlight for more than six months. Acceptance testing of the pipe shall be accomplished during the same construction season in which it is installed. The section properties shall be according to the manufacturer pre-submitted geometric properties on file with the Department. The

manufacturer shall submit written certification that the material meets those properties. The pipe shall meet the following additional requirements.

- (a) Corrugated PP Pipe with a Smooth Interior. The pipe shall be according to AAHSTO M 330 (nominal size – 12 to 60 in. (300 to 1500 mm)). The pipe shall be Type S or D.
- (b) Perforated Corrugated PP Pipe with A Smooth Interior. The pipe shall be according to AASHTO M 330 (nominal size – 12 to 60 in. (300 to 1500 mm)). The pipe shall be Type SP. In addition, the top centerline of the pipe shall be marked so that it is readily visible from the top of the trench before backfilling, and the upper ends of the slot perforations shall be a minimum of ten degrees below the horizontal."

780.14

780.14

**PAVEMENT MARKING FOR BIKE SYMBOL (BDE)**

Effective: January 1, 2014

Add the following to the SYMBOLS table in Article 780.14 of the Standard Specifications:

"Symbol	Large Size Sq. Ft. (sq m)	Small Size Sq. ft. (sq m)
Bike Symbol	6.0 (0.56)	--"

**PAVEMENT PATCHING (BDE)**

Effective: January 1, 2010

Revise the first sentence of the second paragraph of Article 701.17(e)(1) of the Standard Specifications to read:

"In addition to the traffic control and protection shown elsewhere in the contract for pavement, two devices shall be placed immediately in front of each open patch, open hole, and broken pavement where temporary concrete barriers are not used to separate traffic from the work area."

110303

1103.03

**PORLAND CEMENT CONCRETE EQUIPMENT (BDE)**

Effective: November 1, 2013

Add the following to the first paragraph of Article 1103.03(a)(5) of the Standard Specifications to read:

"As an alternative to a locking key, the start and finish time for mixing may be automatically printed on the batch ticket. The start and finish time shall be reported to the nearest second."

44002

440.02

## **PORLAND CEMENT CONCRETE PARTIAL DEPTH HOT-MIX ASPHALT PATCHING (BDE)**

Effective: April 1, 2014

Description. This work shall consist of partial depth removal of the existing Portland cement concrete pavement structure and replacement with hot-mix asphalt (HMA).

The partial depth removal on a lane width or less shall be classified by type/size as follows.

Type I	Less than 8 sq. yd. (9 sq. m)
Type II	8 sq. yd. (9 sq. m) or more, but less than 50 sq. yd. (42 sq. m)
Type III	50 sq. yd. (42 sq. m) or more, but less than 100 sq. yd. (84 sq. m)
Type IV	100 sq. yd. (84 sq. m) or more

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

Item	Article/Section
(a) Bituminous Material for Prime Coat .....	406.02
(b) Hot-Mix Asphalt (Note 1) .....	1030

Note1. If the patch is going to be resurfaced, the HMA for partial depth patches shall be a surface mixture of the same type as the proposed resurfacing or as approved by the Engineer. If the patch is not going to be resurfaced, the mix shall be as shown on the plans.

Equipment. Equipment shall be according to the following Articles/Sections of the Standard Specifications.

Item	Article/Section
(a) Self-Propelled Milling Machine .....	1101.16
(b) Concrete Saw .....	442.03(f)
(c) Wheel Saw .....	442.03(g)
(d) Rollers .....	442.03
(e) Mechanical Sweeper .....	1101.03
(f) Air Equipment (Note 1)	

Note 1. The air equipment shall be capable of supplying compressed air at a minimum pressure of 100 psi (690 kPa) and shall have sufficient flow rate to remove all disturbed pavement debris. The equipment shall also be according to ASTM D 4285.

## CONSTRUCTION REQUIREMENTS

General. The minimum patch dimension shall be 24 in. x 24 in. (600 mm x 600 mm).

Partial Depth Removal. Partial depth removal of the pavement shall be accomplished by the use of a milling machine and/or the wheel saw. The patch area shall be cleaned by air equipment or mechanical sweeper and all disturbed pavement debris and any loose or unsound concrete shall be removed. Materials resulting from the removal shall be disposed of according to Article 202.03 of the Standard Specifications.

Exposed reinforcement shall be removed back to the point where the steel is in contact with sound concrete. Where high steel is encountered, the depth of the patch may be reduced as directed by the Engineer.

Replacement with HMA. When the Engineer determines the exposed pavement will be suitable for a partial depth patch, a bituminous prime coat shall be applied according to Article 406.05(b) of the Standard Specifications.

The prepared patch shall be filled with HMA with a maximum lift thickness of 3 in. (75 mm). Where more than one lift is needed, the top lift shall be a minimum of 2 in. (50 mm) thick. At the option of the Contractor, the 2 in. (50 mm) top layer may be constructed using HMA surface course. The HMA shall be compacted to the satisfaction of the Engineer.

Patch Maintenance. Patches opened to traffic which are high or become rough by rutting, shoving, or heaving shall be corrected by trimming off high areas and/or filling depressions. Filled areas shall be rolled again.

Areas Unsuitable for a Partial Depth Patch. When the Engineer determines the exposed pavement will not be suitable for a partial depth patch, or removal is one half or more of the pavement thickness, the remaining portion of the pavement shall be removed and a full depth patch shall be constructed according to Section 442 of the Standard Specifications for the Class of full depth patches included in the contract. The exposed area may be filled with HMA and the full depth patch constructed at a later date. HMA shall be placed as specified for the partial depth repair.

Method of Measurement. Partial depth removal of the Portland cement concrete pavement will be measured for payment in place and the area computed in square yards (square meters).

HMA for partial depth patching of the Portland cement concrete pavement and for the backfilling of partial depth removal when it is determined the area is not suitable for a partial depth patch will be measured for payment in Tons (Metric Tons) according to Article 406.13 of the Standard Specifications.

Basis of Payment. Partial depth removal of the Portland cement concrete pavement will be paid for at the contract unit price per Square Yard (Square Meter) for PARTIAL DEPTH REMOVAL, VARIABLE DEPTH.

HMA for partial depth patching and for backfilling areas unsuitable for a partial depth patch will be paid for at the contract unit price per Ton (Metric Ton) for PARTIAL DEPTH PATCHING.

When the Engineer determines to convert any partial depth patch to a full depth patch after the partial depth removal of the Portland cement concrete pavement has begun, the partial depth removal will still be paid for at the contract unit price for PARTIAL DEPTH REMOVAL. The remaining removal for the full depth patch will be considered as included in the appropriate full depth patching pay item.

102016

1020.16

## **QUALITY CONTROL/QUALITY ASSURANCE OF CONCRETE MIXTURES (BDE)**

Effective: January 1, 2012

Revised: January 1, 2014

Revise Note 7/ of Schedule B of Recurring Special Provision Check Sheet #31 of the Standard Specifications to read:

- 7/ The test of record for strength shall be the day indicated in Article 1020.04. For cement aggregate mixture II, a strength requirement is not specified and testing is not required. Additional strength testing to determine early falsework and form removal, early pavement or bridge opening to traffic, or to monitor strengths is at the discretion of the Contractor. Strength shall be defined as the average of two 6 x 12 in. (150 x 300 mm) cylinder breaks, three 4 x 8 in. (100 x 200 mm) cylinder breaks, or two beam breaks for field tests. Per Illinois Modified AASHTO T 23, cylinders shall be 6 x 12 in. (150 x 300 mm) when the nominal maximum size of the coarse aggregate exceeds 1 in. (25 mm).

## REMOVAL AND DISPOSAL OF REGULATED SUBSTANCES (BDE)

Effective: January 1, 2012

Revised: November 2, 2012

Revise Article 669.01 of the Standard Specifications to read:

**“669.01 Description.** This work shall consist of the transportation and proper disposal of contaminated soil and water. This work shall also consist of the removal, transportation, and proper disposal of underground storage tanks (UST), their content and associated underground piping to the point where the piping is above the ground, including determining the content types and estimated quantities.”

Revise Article 669.08 of the Standard Specifications to read:

**“669.08 Contaminated Soil and/or Groundwater Monitoring.** The Contractor shall hire a qualified environmental firm to monitor the area containing the regulated substances. The affected area shall be monitored with a photoionization detector (PID) utilizing a lamp of 10.6eV or greater or a flame ionization detector (FID). Any field screen reading on the PID or FID in excess of background levels indicates the potential presence of contaminated material requiring handling as a non-special waste, special waste, or hazardous waste. No excavated soils can be taken to a clean construction and demolition debris (CCDD) facility or an uncontaminated soil fill operation with detectable PID or FID meter readings that are above background. The PID or FID meter shall be calibrated on-site and background level readings taken and recorded daily. All testing shall be done by a qualified engineer/technician. Such testing and monitoring shall be included in the work. The Contractor shall identify the exact limits of removal of non-special waste, special waste, or hazardous waste. All limits shall be approved by the Engineer prior to excavation. The Contractor shall take all necessary precautions.

Based upon the land use history of the subject property and/or PID or FID readings indicating contamination, a soil or groundwater sample shall be taken from the same location and submitted to an approved laboratory. Soil or groundwater samples shall be analyzed for the contaminants of concern, including pH, based on the property's land use history or the parameters listed in the maximum allowable concentration (MAC) for chemical constituents in uncontaminated soil established pursuant to Subpart F of 35 Illinois Administrative Code 1100.605. The analytical results shall serve to document the level of soil contamination. Soil and groundwater samples may be required at the discretion of the Engineer to verify the level of soil and groundwater contamination.

Samples shall be grab samples (not combined with other locations). The samples shall be taken with decontaminated or disposable instruments. The samples shall be placed in sealed containers and transported in an insulated container to the laboratory. The container shall maintain a temperature of 39 °F (4 °C). All samples shall be clearly labeled. The labels shall indicate the sample number, date sampled, location and elevation, and any other observations.

The laboratory shall use analytical methods which are able to meet the lowest appropriate practical quantitation limits (PQL) or estimated quantitation limit (EQL) specified in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods", EPA Publication No. SW-846 and "Methods for the Determination of Organic Compounds in Drinking Water", EPA, EMSL, EPA-600/4-88/039. For parameters where the specified cleanup objective is below the acceptable detection limit (ADL), the ADL shall serve as the cleanup objective. For other parameters the ADL shall be equal to or below the specified cleanup objective."

Replace the first two paragraphs of Article 669.09 of the Standard Specifications with the following:

**"669.09 Contaminated Soil and/or Groundwater Management and Disposal.** The management and disposal of contaminated soil and/or groundwater shall be according to the following:

- (a) Soil Analytical Results Exceed Most Stringent MAC. When the soil analytical results indicate that detected levels exceed the most stringent maximum allowable concentration (MAC) for chemical constituents in uncontaminated soil established pursuant to Subpart F of 35 Illinois Administrative Code 1100.605, the soil shall be managed as follows:
  - (1) When analytical results indicate inorganic chemical constituents exceed the most stringent MAC but they are still considered within area background levels by the Engineer, the excavated soil can be utilized within the construction limits as fill, when suitable. Such soil excavated for storm sewers can be placed back into the excavated trench as backfill, when suitable, unless trench backfill is specified. If the soils cannot be utilized within the construction limits, they shall be managed and disposed of off-site as a non-special waste, special waste, or hazardous waste as applicable.
  - (2) When analytical results indicate chemical constituents exceed the most stringent MAC but do not exceed the MAC for a Metropolitan Statistical Area (MSA) County, the excavated soil can be utilized within the construction limits as fill, when suitable, or managed and disposed of off-site as "uncontaminated soil" at a CCDD facility or an uncontaminated soil fill operation within an MSA County provided the pH of the soil is within the range of 6.25 - 9.0, inclusive.
  - (3) When analytical results indicate chemical constituents exceed the most stringent MAC but do not exceed the MAC for an MSA County excluding Chicago, or the MAC within the Chicago corporate limits, the excavated soil can be utilized within the construction limits as fill, when suitable, or managed and disposed of off-site as "uncontaminated soil" at a CCDD facility or an uncontaminated soil fill operation within an MSA County excluding Chicago or within the Chicago corporate limits provided the pH of the soil is within the range of 6.25 - 9.0, inclusive.

- (4) When analytical results indicate chemical constituents exceed the most stringent MAC but do not exceed the MAC for an MSA County excluding Chicago, the excavated soil can be utilized within the construction limits as fill, when suitable, or managed and disposed of off-site as "uncontaminated soil" at a CCDD facility or an uncontaminated soil fill operation within an MSA County excluding Chicago provided the pH of the soil is within the range of 6.25 - 9.0, inclusive.
  - (5) When the Engineer determines soil cannot be managed according to Articles 669.09(a)(1) through (a)(4) above, the soil shall be managed and disposed of off-site as a non-special waste, special waste, or hazardous waste as applicable.
- (b) Soil Analytical Results Do Not Exceed Most Stringent MAC. When the soil analytical results indicate that detected levels do not exceed the most stringent MAC but the pH of the soil is less than 6.25 or greater than 9.0, the excavated soil can be utilized within the construction limits or managed and disposed of off-site as "uncontaminated soil" according to Article 202.03. However the excavated soil cannot be taken to a CCDD facility or an uncontaminated soil fill operation.
- (c) Groundwater. When groundwater analytical results indicate the detected levels are above Appendix B, Table E of 35 Illinois Administrative Code 742, the most stringent Tier 1 Groundwater Remediation Objectives for Groundwater Component of the Groundwater Ingestion Route for Class 1 groundwater, the groundwater shall be managed off-site as a special waste.

All groundwater encountered within lateral trenches may be managed within the trench and allowed to infiltrate back into the ground. If the groundwater cannot be managed within the trench it must be removed as a special or hazardous waste. The Contractor is prohibited from managing groundwater within the trench by discharging it through any existing or new storm sewer. The Contractor shall install backfill plugs within the area of groundwater contamination.

One backfill plug shall be placed down gradient to the area of groundwater contamination. Backfill plugs shall be installed at intervals not to exceed 50 ft (15 m). Backfill plugs are to be 4 ft (1.2 m) long, measured parallel to the trench, full trench width and depth. Backfill plugs shall not have any fine aggregate bedding or backfill, but shall be entirely cohesive soil or any class of concrete. The Contractor shall provide test data that the material has a permeability of less than  $10^{-7}$  cm/sec according to ASTM D 5084, Method A or per another test method approved by the Engineer."

Revise Article 669.14 of the Standard Specifications to read:

**"669.14 Final Environmental Construction Report.** At the end of the project, the Contractor will prepare and submit three copies of the Environmental Construction Report on the activities conducted during the life of the project, one copy shall be submitted to the Resident Engineer, one copy shall be submitted to the District's Environmental Studies Unit, and one copy shall be submitted with an electronic copy in Adobe.pdf format to the Geologic

and Waste Assessment Unit, Bureau of Design and Environment, IDOT, 2300 South Dirksen Parkway, Springfield, Illinois 62764. The technical report shall include all pertinent information regarding the project including, but not limited to:

- (a) Measures taken to identify, monitor, handle, and dispose of soil or groundwater containing regulated substances, to prevent further migration of regulated substances, and to protect workers,
- (b) Cost of identifying, monitoring, handling, and disposing of soil or groundwater containing regulated substances, the cost of preventing further migration of regulated substances, and the cost for worker protection from the regulated substances. All cost should be in the format of the contract pay items listed in the contract plans (identified by the preliminary environmental site investigation (PESA) site number),
- (c) Plan sheets showing the areas containing the regulated substances,
- (d) Field sampling and testing results used to identify the nature and extent of the regulated substances,
- (e) Waste manifests (identified by the preliminary environmental site investigation (PESA) site number) for special or hazardous waste disposal, and
- (f) Landfill tickets (identified by the preliminary environmental site investigation (PESA) site number) for non-special waste disposal."

Revise the second paragraph of Article 669.16 of the Standard Specifications to read:

"The transportation and disposal of soil and other materials from an excavation determined to be contaminated will be paid for at the contract unit price per cubic yard (cubic meter) for NON-SPECIAL WASTE DISPOSAL, SPECIAL WASTE DISPOSAL, or HAZARDOUS WASTE DISPOSAL."

80283

## **REMOVAL AND DISPOSAL OF SURPLUS MATERIALS (BDE)**

Effective: November 2, 2012

Revise the first four paragraphs of Article 202.03 of the Standard Specifications to read:

**"202.03 Removal and Disposal of Surplus, Unstable, Unsuitable, and Organic Materials.** Suitable excavated materials shall not be wasted without permission of the Engineer. The Contractor shall dispose of all surplus, unstable, unsuitable, and organic materials, in such a manner that public or private property will not be damaged or endangered.

Suitable earth, stones and boulders naturally occurring within the right-of-way may be placed in fills or embankments in lifts and compacted according to Section 205. Broken concrete without protruding metal bars, bricks, rock, stone, reclaimed asphalt pavement with no expansive aggregate, or uncontaminated dirt and sand generated from construction or demolition activities may be used in embankment or in fill. If used in fills or embankments, these materials shall be placed and compacted to the satisfaction of the Engineer; shall be buried under a minimum of 2 ft (600 mm) of earth cover (except when the materials include only uncontaminated dirt); and shall not create an unsightly appearance or detract from the natural topographic features of an area. Broken concrete without protruding metal bars, bricks, rock, or stone may be used as riprap as approved by the Engineer. If the materials are used for fill in locations within the right-of-way but outside project construction limits, the Contractor must specify to the Engineer, in writing, how the landscape restoration of the fill areas will be accomplished. Placement of fill in such areas shall not commence until the Contractor's landscape restoration plan is approved by the Engineer.

Aside from the materials listed above, all other construction and demolition debris or waste shall be disposed of in a licensed landfill, recycled, reused, or otherwise disposed of as allowed by State or Federal laws and regulations. When the Contractor chooses to dispose of uncontaminated soil at a clean construction and demolition debris (CCDD) facility or at an uncontaminated soil fill operation, it shall be the Contractor's responsibility to have the pH of the material tested to ensure the value is between 6.25 and 9.0, inclusive. A copy of the pH test results shall be provided to the Engineer.

A permit shall be obtained from IEPA and made available to the Engineer prior to open burning of organic materials (i.e., plant refuse resulting from pruning or removal of trees or shrubs) or other construction or demolition debris. Organic materials originating within the right-of-way limits may be chipped or shredded and placed as mulch around landscape plantings within the right-of-way when approved by the Engineer. Chipped or shredded material to be placed as mulch shall not exceed a depth of 6 in. (150 mm)."

## **WARM MIX ASPHALT (BDE)**

Effective: January 1, 2012

Revised: November 1, 2013

**Description.** This work shall consist of designing, producing and constructing Warm Mix Asphalt (WMA) in lieu of Hot Mix Asphalt (HMA) at the Contractor's option. Work shall be according to Sections 406, 407, 408, 1030, and 1102 of the Standard Specifications, except as modified herein. In addition, any references to HMA in the Standard Specifications, or the special provisions shall be construed to include WMA.

WMA is an asphalt mixture which can be produced at temperatures lower than allowed for HMA utilizing approved WMA technologies. WMA technologies are defined as the use of additives or processes which allow a reduction in the temperatures at which HMA mixes are produced and placed. WMA is produced by the use of additives, a water foaming process, or combination of both. Additives include minerals, chemicals or organics incorporated into the asphalt binder stream in a dedicated delivery system. The process of foaming injects water into the asphalt binder stream, just prior to incorporation of the asphalt binder with the aggregate.

Approved WMA technologies may also be used in HMA provided all the requirements specified herein, with the exception of temperature, are met. However, asphalt mixtures produced at temperatures in excess of 275 °F (135 °C) will not be considered WMA when determining the grade reduction of the virgin asphalt binder grade.

### **Materials.**

Add the following to Article 1030.02 of the Standard Specifications.

"(h) Warm Mix Asphalt (WMA) Technologies (Note 3)"

Add the following note to Article 1030.02 of the Standard Specifications.

"Note 3. Warm mix additives or foaming processes shall be selected from the current Bureau of Materials and Physical Research Approved List, "Warm-Mix Asphalt Technologies".

### **Equipment.**

Revise the first paragraph of Article 1102.01 of the Standard Specifications to read:

**"1102.01 Hot-Mix Asphalt Plant.** The hot-mix asphalt (HMA) plant shall be the batch-type, continuous-type, or dryer drum plant. The plants shall be evaluated for prequalification rating and approval to produce HMA according to the current Bureau of Materials and Physical Research Policy Memorandum, "Approval of Hot-Mix Asphalt Plants and Equipment". Once approved, the Contractor shall notify the Bureau of Materials and Physical Research to obtain approval of all plant modifications. The plants shall not be used to produce mixtures concurrently for more than one project or for private work unless permission is granted in writing by the Engineer. The plant units shall be so designed, coordinated and operated that they will function properly and produce HMA having uniform temperatures and compositions within the tolerances specified. The plant units shall meet the following requirements."

Add the following to Article 1102.01(a) of the Standard Specifications.

**"(13) Equipment for Warm Mix Technologies.**

- a. Foaming. Metering equipment for foamed asphalt shall have an accuracy of  $\pm 2$  percent of the actual water metered. The foaming control system shall be electronically interfaced with the asphalt binder meter.
- b. Additives. Additives shall be introduced into the plant according to the supplier's recommendations and shall be approved by the Engineer. The system for introducing the WMA additive shall be interlocked with the aggregate feed or weigh system to maintain correct proportions for all rates of production and batch sizes."

**Mix Design Verification.**

Add the following to Article 1030.04 of the Standard Specifications.

**"(e) Warm Mix Technologies.**

- (1) Foaming. WMA mix design verification will not be required when foaming technology is used alone (without WMA additives). However, the foaming technology shall only be used on HMA designs previously approved by the Department.
- (2) Additives. WMA mix designs utilizing additives shall be submitted to the Engineer for mix design verification.

**Production.**

Revise the second paragraph of Article 1030.06(a) of the Standard Specifications to read:

"At the start of mix production for HMA, WMA, and HMA using WMA technologies, QC/QA mixture start-up will be required for the following situations; at the beginning of production of a new mixture design, at the beginning of each production season, and at every plant utilized to produce mixtures, regardless of the mix."

**Quality Control/Quality Assurance Testing.**

Revise the table in Article 1030.05(d)(2)a. of the Standard Specifications to read:

Parameter	Frequency of Tests High ESAL Mixture Low ESAL Mixture	Frequency of Tests All Other Mixtures	Test Method See Manual of Test Procedures for Materials
Aggregate Gradation  % passing sieves: 1/2 in. (12.5 mm), No. 4 (4.75 mm), No. 8 (2.36 mm), No. 30 (600 $\mu$ m) No. 200 (75 $\mu$ m)  Note 1.	1 washed ignition oven test on the mix per half day of production  Note 4.	1 washed ignition oven test on the mix per day of production  Note 4.	Illinois Procedure
Asphalt Binder Content by Ignition Oven	1 per half day of production	1 per day	Illinois-Modified AASHTO T 308

Parameter	Frequency of Tests High ESAL Mixture Low ESAL Mixture	Frequency of Tests All Other Mixtures	Test Method See Manual of Test Procedures for Materials
<b>Note 2.</b> VMA	Day's production ≥ 1200 tons:  1 per half day of production	N/A	Illinois-Modified AASHTO R 35
<b>Note 3.</b>	Day's production < 1200 tons:  1 per half day of production for first 2 days and 1 per day thereafter (first sample of the day)		
Air Voids  Bulk Specific Gravity of Gyratory Sample	Day's production ≥ 1200 tons:  1 per half day of production	1 per day	Illinois-Modified AASHTO T 312
<b>Note 5.</b>	Day's production < 1200 tons:  1 per half day of production for first 2 days and 1 per day thereafter (first sample of the day)		
Maximum Specific Gravity of Mixture	Day's production ≥ 1200 tons:  1 per half day of production	1 per day	Illinois-Modified AASHTO T 209
	Day's production < 1200 tons:  1 per half day of production for first 2 days and 1 per day thereafter (first sample of the day)		

**Note 1.** The No. 8 (2.36 mm) and No. 30 (600  $\mu\text{m}$ ) sieves are not required for All Other Mixtures.

**Note 2.** The Engineer may waive the ignition oven requirement for asphalt binder content if the aggregates to be used are known to have ignition asphalt binder content calibration factors which exceed 1.5 percent. If the ignition oven requirement is waived, other Department approved methods shall be used to determine the asphalt binder content.

**Note 3.** The  $G_{sb}$  used in the voids in the mineral aggregate (VMA) calculation shall be the same average  $G_{sb}$  value listed in the mix design.

**Note 4.** The Engineer reserves the right to require additional hot bin gradations for batch

**Note 5.** The WMA compaction temperature for mixture volumetric testing shall be  $270 \pm 5^\circ\text{F}$  ( $132 \pm 3^\circ\text{C}$ ) for quality control testing. The WMA compaction temperature for quality assurance testing will be  $270 \pm 5^\circ\text{F}$  ( $132 \pm 3^\circ\text{C}$ ) if the mixture is not allowed to cool to room temperature. If the mixture is allowed to

cool to room temperature it shall be reheated to standard HMA compaction temperatures."

Construction Requirements.

Revise the second paragraph of Article 406.06(b)(1) of the Standard Specifications to read:

"The HMA shall be delivered at a temperature of 250 to 350 °F (120 to 175 °C). WMA shall be delivered at a minimum temperature of 215 °F (102 °C)."

Basis of Payment.

This work will be paid at the contract unit price bid for the HMA pay items involved. Anti-strip will not be paid for separately, but shall be considered as included in the cost of the work.

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

SPECIAL PROVISION  
FOR  
BIDDING REQUIREMENTS AND CONDITIONS FOR CONTRACT PROPOSALS

Effective: January 1, 2001  
Revised: January 1, 2014

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

Replace Article 102.01 of the Standard Specifications with the following:

Prequalification of Bidders. When prequalification is required and the Awarding Authority for contract construction work is the County Board of a County, the Council, the City Council, or the President and Board of Trustees of a city, village, or town, each prospective bidder, in evidence of competence, shall furnish the Awarding Authority as a prerequisite to the release of proposal forms by the Awarding Authority, a certified or photostatic copy of a "Certificate of Eligibility" issued by the Department of Transportation, according to the Department's "Prequalification Manual".

The two low bidders must file, within 24 hours after the letting, a sworn affidavit in triplicate, showing all uncompleted contracts awarded to them and all low bids pending award for Federal, State, County, Municipal and private work, using the blank form made available for this affidavit. One copy shall be filed with the Awarding Authority and two copies with IDOT's District office.

Issuance of Proposal Forms. The Awarding Authority reserves the right to refuse to issue a proposal form for bidding purposes for any of the following reasons:

- (a) Lack of competency and adequate machinery, plant, and other equipment, as revealed by the financial statement and experience questionnaires required in the prequalification procedures.
- (b) Uncompleted work which, in the judgment of the Awarding Authority, might hinder or prevent the prompt completion of additional work awarded.
- (c) False information provided on a bidder's "Affidavit of Availability".
- (d) Failure to pay, or satisfactorily settle, all bills due for labor and material on former contracts in force at the time of issuance of proposal forms.
- (e) Failure to comply with any prequalification regulations of the Department.
- (f) Default under previous contracts.
- (g) Unsatisfactory performance record as shown by past work for the Awarding Authority, judged from the standpoint of workmanship and progress.
- (h) When the Contractor is suspended from eligibility to bid at a public letting where the contract is awarded by, or requires approval of, the Department.
- (i) When any agent, servant, or employee of the prospective bidder currently serves as a member, employee, or agent of a governmental body that is financially involved in the proposal work.

- (j) When any agent, servant, or employee of the perspective bidder has participated in the preparation of plans or specifications for the proposed work.

Interpretation of Quantities in the Bid Schedule. The quantities appearing in the bid schedule are approximate and are prepared for the comparison of bids. Payment to the Contractor will be made only for the actual quantities of work performed and accepted or materials furnished according to the contract. The scheduled quantities of work to be done and materials to be furnished may be increased, decreased, or omitted as hereinafter provided.

Examination of Plans, Specifications, Special Provisions, and Site of Work. The bidder shall, before submitting a bid, carefully examine the provisions of the contract. The bidder shall inspect in detail the site of the proposed work, investigate and become familiar with all the local conditions affecting the contract and fully acquaint themselves with the detailed requirements of construction. Submission of a bid shall be a conclusive assurance and warranty the bidder has made these examinations and the bidder understands all requirements for the performance of the work. If his/her bid is accepted, the bidder shall be responsible for all errors in the proposal resulting from his/her failure or neglect to comply with these instructions. The Awarding Authority will, in no case, be responsible for any costs, expenses, losses, or change in anticipated profits resulting from such failure or neglect of the bidder to make these examinations.

The bidder shall take no advantage of any error or omission in the proposal and advertised contract. Any prospective bidder, who desires an explanation or interpretation of the plans, specification, or any of the contract documents, shall request such in writing from the Awarding Authority, in sufficient time to allow a written reply by the Awarding Authority that can reach all prospective bidders before the submission of their bids. Any reply given a prospective bidder concerning any of the contract documents, plans, and specifications will be furnished to all prospective bidders in the form determined by the Awarding Authority including, but not limited to, an addendum, if the information is deemed by the Awarding Authority to be necessary in submitting bids or if the Awarding Authority concludes the information would aid competition. Oral explanations, interpretations, or instructions given before the submission of bids unless at a prebid conference will not be binding on the Awarding Authority.

Preparation of the Proposal. Bidders shall submit their proposals on the form furnished by the Awarding Authority. The proposal shall be executed properly, and bids shall be made for all items indicated in the proposal form, except when alternate bids are asked, a bid on more than one alternate for each item is not required, unless otherwise provided. The bidder shall indicate in figures, a unit price for each of the separate items called for in the proposal form; the bidder shall show the products of the respective quantities and unit prices in the column provided for that purpose, and the gross sum shown in the place indicated in the proposal form shall be the summation of said products. All writing shall be with ink or typewriter, except the signature of the bidder which shall be written in ink.

If the proposal is made by an individual, that individual's name and business address shall be shown. If made by a firm or partnership, the name and business address of each member of the firm or partnership shall be shown. If made by a corporation, the proposal shall show the names, titles, and business addresses of the president, corporate secretary and treasurer. The proposal shall be signed by president or someone with authority to execute contracts and attested by the corporate secretary or someone with authority to execute or attest to the execution of contracts.

When prequalification is required, the proposal form shall be submitted by an authorized bidder in the same name and style as shown on the "Contractor's Statement of Experience and Financial Condition" used for prequalification.

Rejection of Proposals. The Awarding Authority reserves the right to reject any proposal for any of the conditions in "Issuance of Proposal Forms" or for any of the following reasons:

- (a) More than one proposal for the same work from an individual, firm, partnership, or corporation under the same name or different names.
- (b) Evidence of collusion among bidders.
- (c) Unbalanced proposals in which the bid prices for some items are, in the judgment of the Awarding Authority, out of proportion to the bid prices for other items.
- (d) If the proposal does not contain a unit price for each pay item listed, except in the case of authorized alternate pay items or lump sum pay items.
- (e) If the proposal form is other than that furnished by the Awarding Authority; or if the form is altered or any part thereof is detached.
- (f) If there are omissions, erasures, alterations, unauthorized additions, conditional or alternate bids, or irregularities of any kind which may tend to make the proposal incomplete, indefinite or ambiguous as to its meaning.
- (g) If the bidder adds any provisions reserving the right to accept or reject an award, or to enter into a contract pursuant to an award.
- (h) If the proposal is not accompanied by the proper proposal guaranty.
- (i) If the proposal is prepared with other than ink or typewriter, or otherwise fails to meet the requirements of the above "Preparation of Proposal" section.

Proposal Guaranty. Each proposal shall be accompanied by a bid bond on the Department form contained in the proposal, executed by a corporate surety company satisfactory to the Awarding Authority, by a bank cashier's check or a properly certified check for not less than five percent of the amount bid, or for the amount specified in the following schedule:

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

In the event that one proposal guaranty check is intended to cover two or more proposals, the amount must equal to the sum of the proposal guaranties which would be required for each individual proposal.

Bank cashier's checks or properly certified checks accompanying proposals shall be made payable to 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.

The proposal guaranty checks of all, except the two lowest responsible, will be returned promptly after the proposals have been checked, tabulated, and the relation of the proposals established. Proposal guaranty checks of the two lowest bidders will be returned as soon as the contract and contract bond of the successful bidder have been properly executed and approved. Bid bonds will not be returned.

After a period of three working days has elapsed after the date of opening proposals, the Awarding Authority may permit the two lowest bidders to substitute for the bank cashier's checks or certified checks submitted with their proposals as proposal guaranties, bid bonds on the Department forms executed by corporate surety companies satisfactory to the Awarding Authority.

Delivery of Proposals. If a special envelope is supplied by the Awarding Authority, each proposal should be submitted in that envelope furnished by the Awarding Authority and the blank spaces on the envelope shall be filled in correctly to clearly indicate its contents. When an envelope other than the special one furnished by the Awarding Authority is used, it shall be marked to clearly indicate its contents. When sent by mail, the sealed proposal shall be addressed to the Awarding Authority at the address and in care of the official in whose office the bids are to be received. All proposals shall be filed prior to the time and at the place specified in the Notice to Bidders. Proposals received after the time specified will be returned to the bidder unopened.

Withdrawal of Proposals. Permission will be given a bidder to withdraw a proposal if the bidder makes the request in writing or in person before the time for opening proposals.

Public Opening of Proposals. Proposals will be opened and read publicly at the time and place specified in the Notice to Bidders. Bidders, their authorized agents, and other interested parties are invited to be present.

Consideration of Proposals. After the proposals are opened and read, they will be compared on the basis of the summation of the products of the quantities shown in the bid schedule by the unit bid prices. In awarding contracts, the Awarding Authority will, in addition to considering the amounts stated in the proposals, take into consideration the responsibility of the various bidders as determined from a study of the data required under "Prequalification of Bidders", and from other investigations which it may elect to make.

The right is reserved to reject any or all proposals, to waive technicalities, or to advertise for new proposals, if in the judgment of the Awarding Authority, the best interests of the Awarding Authority will be promoted thereby.

Award of Contract. The award of contract will be made within 45 calendar days after the opening of proposals to the lowest responsible and qualified bidder whose proposal complies with all the requirements prescribed. The successful bidder will be notified by letter of intent that his/her bid has been accepted, and subject to the following conditions, the bidder will be the Contractor.

An approved contract executed by the Awarding Authority is required before the Awarding Authority is bound. An award may be cancelled any time by the Awarding Authority prior to execution in order to protect the public interest and integrity of the bidding process or for any other reason if, in the judgment of the Awarding Authority, the best interests of the Awarding Authority will be promoted thereby.

If a contract is not awarded within 45 days after the opening of proposals, bidders may file a written request with the Awarding Authority for the withdrawal of their bid, and the Awarding Authority will permit such withdrawal.

Requirement of Contract Bond. If the Awarding Authority requires a Contract Bond, the Contractor or Supplier shall furnish the Awarding Authority a performance and payment bond with good and sufficient sureties in the full amount of the award as the penal sum. The surety shall be acceptable to the Awarding Authority, shall waive notice of any changes and extensions of time, and shall submit its bond on the form furnished by the Awarding Authority.

Execution of Contract. The contract shall be executed by the successful bidder and returned, together with the Contract Bond, within 15 days after the contract has been mailed to the bidder.

If the bidder to whom the award is made is a corporation organized under the laws of a State other than Illinois, the bidder shall furnish the Awarding Authority a copy of the corporation's Certificate of Authority to do business in the State of Illinois with the return of the executed contract and bond. Failure to furnish such evidence of a Certificate of Authority within the time required will be considered as just cause for the annulment of the award and the forfeiture of the proposal guaranty to the Awarding Authority, not as a penalty, but in payment of liquidated damages sustained as a result of such failure.

Failure to Execute Contract. If the contract is not executed by the Awarding Authority within 15 days following receipt from the bidder of the properly executed contracts and bonds, the bidder shall have the right to withdraw his/her bid without penalty.

Failure of the successful bidder to execute the contract and file acceptable bonds within 15 days after the contract has been mailed to the bidder shall be just cause for the cancellation of the award and the forfeiture of the proposal guaranty which shall become the property of the Awarding Authority, not as penalty, but in liquidation of damages sustained. Award may then be made to the next lowest responsible bidder, or the work may be readvertised and constructed under contract, or otherwise, as the Awarding Authority may decide."

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

SPECIAL PROVISION  
FOR  
WAGES OF EMPLOYEES ON PUBLIC WORKS

Effective: January 1, 1999  
Revised: January 1, 2014

1. Prevailing Wages. All wages paid by the Contractor and each subcontractor shall be in compliance with The Prevailing Wage Act (820 ILCS 130), as amended, except where a prevailing wage violates a federal law, order, or ruling, the rate conforming to the federal law, order, or ruling shall govern. The Illinois Department of Labor publishes the prevailing wage rates on its website at [www.state.il.us/agency/idol/rates/rates.htm](http://www.state.il.us/agency/idol/rates/rates.htm). If the Illinois Department of Labor revises the prevailing wage rates, the revised prevailing wage rates on the Illinois Department of Labor's website shall apply to this contract and the Contractor will not be allowed additional compensation on account of said revisions. The Contractor shall review the wage rates applicable to the work of the contract at regular intervals in order to ensure the timely payment of current wage rates. The Contractor agrees that no additional notice is required. The Contractor shall be responsible to notify each subcontractor of the wage rates set forth in this contract and any revisions thereto.
2. Payroll Records. The Contractor and each subcontractor shall make and keep, for a period of not less than five years from the date of the last payment on a contract or subcontract, records of all laborers, mechanics, and other workers employed by them on the project; the records shall include information required by 820 ILCS 130/5 for each worker. Upon seven business days' notice, the Contractor and each subcontractor shall make available for inspection and copying at a location within this State during reasonable hours, the payroll records to the public body in charge of the project, its officers and agents, the Director of Labor and his deputies and agents, and to federal, State, or local law enforcement agencies and prosecutors.
3. Submission of Payroll Records. The Contractor and each subcontractor shall, no later than the 15th day of each calendar month, file a certified payroll for the immediately preceding month with the public body in charge of the project, except that the full social security number and home address shall not be included on weekly transmittals. Instead the payrolls shall include an identification number for each employee (e.g., the last four digits of the employee's social security number). The certified payroll shall consist of a complete copy of the payroll records except starting and ending times of work each day may be omitted

The certified payroll shall be accompanied by a statement signed by the Contractor or subcontractor or an officer, employee, or agent of the contractor or subcontractor which avers that: (i) he or she has examined the certified payroll records required to be submitted by the Act and such records are true and accurate; (ii) the hourly rate paid to each worker is not less than the general prevailing rate of hourly wages required; and (iii) the Contractor or subcontractor is aware that filing a certified payroll that he or she knows to be false is a Class A misdemeanor.

4. Employees Interviews. The Contractor and each subcontractor shall permit his/her employees to be interviewed on the job, during working hours, by compliance investigators of the Department or the Department of Labor.

10507b

105.07

## **UTILITIES – LOCATIONS/INFORMATION ON PLANS**

Effective: November 8, 2013

The locations of existing water mains, gas mains, sewers, electric power lines, telephone lines, and other utilities as shown on the plans are based on field investigation and locations provided by the utility companies, but they are not guaranteed. Unless elevations are shown, all utility locations shown on the cross sections are based on the approximate depth supplied by the utility company. It shall be the Contractor's responsibility to ascertain their exact location from the utility companies and by field inspection.

10731

107.31

## **LOCATION OF UNDERGROUND STATE MAINTAINED FACILITIES**

Effective: August 3, 2007      Revised: July 31, 2009

The Contractor shall be responsible for locating existing and proposed IDOT electrical facilities (traffic signal, overhead lighting, Intelligent Transportation System, etc.) prior to performing any work at his/her own expense if required. The Contractor shall also be liable for any damage to IDOT facilities resulting from inaccurate locating.

The Contractor may obtain, on request, plans for existing electrical facilities from the Department.

The Contractor shall also be responsible for locating and providing protection for IDOT facilities during all phases of construction. If at any time the facilities are damaged, the Contractor shall immediately notify the Department and make all necessary arrangements for repair to the satisfaction of the Engineer. This work will not be paid for separately, but shall be included in the contract bid price.

10805a

108.05a

## **DATE OF COMPLETION**

Effective March 1, 1990      Revised April 25, 2008

The Contractor shall schedule his operations so as to substantially complete ~~all work~~ roadwork and open all the roadway to traffic on or before November 14, 2014. ~~The Contractor shall note that this completion date is based on an expedited work schedule.~~

## **SUBBASE GRANULAR MATERIAL**

Effective: November 5, 2004

This work shall be in accordance with Section 311 of the Standard Specifications and as specified herein.

All Subbase Granular Material shall have a minimum IBR of 40.

40601  
**ANTI-STRIP ADDITIVE FOR HOT-MIX ASPHALT**

406.01

Effective July 30, 2010

If an anti-stripping additive is required for any hot-mix asphalt in accordance with Article 1030.04(c), the cost of the additive will not be paid for separately, but shall be considered as included in the contract unit price bid for the hot-mix asphalt item(s) involved.

40602  
**HOT-MIX ASPHALT – PRIME COAT (BMPR)**

406.02

Effective: February 19, 2013      Revised: March 1, 2014

Revise Note 1 of Article 406.02 of the Standard Specifications to read:

"Note 1. The bituminous material used for prime coat shall be one of the types listed in the following table.

When emulsified asphalts are used, any dilution with water shall be performed by the emulsion producer. The emulsified asphalt shall be thoroughly agitated within 24 hours of application and show no separation of water and emulsion.

Application	Bituminous Material Types
Prime Coat on Brick, Concrete, or HMA Bases	SS-1, SS-1h, SS-1hP, SS-1vh, CSS-1, CSS-1h, CSS-1hP, HFE-90, RC-70
Prime Coat on Aggregate Bases	MC-30, PEP"

Add the following to Article 406.03 of the Standard Specifications:

"(i) Regenerative Air Vacuum Sweeper.....1101.19"

Revise Article 406.05(b) of the Standard Specifications to read:

"(b) Prime Coat. The bituminous material shall be prepared according to Article 403.05 and applied according to Article 403.10. The use of RC-70 shall be limited to air temperatures less than 60°F (15°C)."

- (1) Brick, Concrete or HMA Bases. The base shall be cleaned of all dust, debris and any substance that will prevent the prime coat from adhering to the base. Cleaning shall be accomplished by sweeping to remove all large particles and air blasting to remove dust. As an alternate to air blasting, vacuum sweeping may be used to accomplish the dust removal. Vacuum sweeping shall be accomplished with a regenerative air vacuum sweeper. The base shall be free of standing water at the time of application. The prime coat shall be applied uniformly and at a rate that will provide a residual asphalt rate on the

prepared surface as specified in the following table.

Type of Surface to be Primed	Residual Asphalt Rate lb./sq. ft. (kg/sq. m)
Milled HMA, Aged Non-Milled HMA, Milled Concrete, Non-Milled Concrete & Tined Concrete	0.05 (0.244)
Fog Coat between HMA Lifts, IL-4.75 & Brick	0.025 (0.122)

The bituminous material for the prime coat shall be placed one lane at a time. The primed lane shall remain closed until the prime coat is fully cured and does not pickup under traffic. When placing prime coat through an intersection where it is not possible to keep the lane closed, the prime coat may be covered immediately following its application with fine aggregate mechanically spread at a uniform rate of 2 to 4 lb./sq. yd. (1 to 2 kg/sq. m).

- (2) Aggregate Bases. The prime coat shall be applied uniformly and at a rate that will provide a residual asphalt rate on the prepared surface of 0.25 lb./sq. ft.  $\pm$  0.01 (1.21 kg/sq. m  $\pm$  0.05).

The prime coat shall be permitted to cure until the penetration has been approved by the Engineer, but at no time shall the curing period be less than

24 hours for MC-30 or four hours for PEP. Pools of prime occurring in the depressions shall be broomed or squeegeed over the surrounding surface the same day the prime coat is applied.

The base shall be primed 1/2 width at a time. The prime coat on the second half/width shall not be applied until the prime coat on the first half/width has cured so that it will not pick up under traffic.

The residual asphalt binder rate will be verified a minimum of once per type of surface to be primed as specified herein for which at least 2,000 tons of HMA will be placed. The test will be according to the "Determination of Residual Asphalt in Prime and Tack Coat Materials" test procedure.

Prime coat shall be fully cured prior to placement of HMA to prevent pickup by haul trucks or paving equipment. If pickup occurs, paving shall cease in order to provide additional cure time.

Prime coat shall be placed no more than five days in advance of the placement of HMA. If after five days loss of prime coat is evident prior to covering with HMA, additional prime coat shall be placed as determined by the Engineer at no additional cost to the Department."

Revise the last sentence of the first paragraph of 406.13(b) to read:

"Water added to emulsified asphalt as allowed in article 406.02 will not be included in the quantities measured for payment."

Revise the second paragraph of Article 406.13(b) of the Standard Specifications to read:

"Aggregate for covering prime coat will not be measured for payment."

Revise the first paragraph of Article 406.14 of the Standard Specifications to read:

"Prime Coat will be paid for at the contract unit price per Pound (Kilogram) of residual asphalt applied for BITUMINOUS MATERIALS (PRIME COAT), or POLYMERIZED BITUMINOUS MATERIALS (PRIME COAT)"

Revise Article 407.06(b) of the Standard Specifications to read:

"A bituminous prime coat shall be applied between each lift of HMA according to Article 406.05(b)."

Revise Article 1032.02 of the Standard Specifications to read:

**"1032.02 Measurement.** Asphalt binders, emulsified asphalts, rapid curing liquid asphalt, medium curing liquid asphalts, slow curing liquid asphalts, asphalt fillers, and road oils will be measured by weight.

A weight ticket for each truck load shall be furnished to the inspector. The truck shall be weighed at a location approved by the Engineer. The ticket shall show the weight of the empty truck (the truck being weighed each time before it is loaded), the weight of the loaded truck, and the net weight of the bituminous material.

When an emulsion or cutback is used for prime coat, the percentage of asphalt residue of the actual certified product shall be shown on the producer's bill of lading or attached certificate of analysis. If the producer adds extra water to an emulsion at the request of the purchaser, the amount of water shall also be shown on the bill of lading.

Payment will not be made for bituminous materials in excess of 105 percent of the amount specified by the Engineer."

Add the following to the table in article 1032.04 of the Standard Specifications:

"SS-1vh	160 - 180	70 - 80"
---------	-----------	----------

Add the following to Article 1032.06 of the Standard Specifications:

"(g) Non Tracking Emulsified Asphalt SS-1vh:

Requirements for SS-1vh			
Test	SPEC	AASHTO Test Method	
Saybolt Viscosity @ 25C,	SFS	20-200	T 72
Storage Stability, 24hr.,	%	1 max.	T 59
Residue by Evaporation,	%	50 min.	T 59
Sieve Test,	%	0.3 max.	T 59
Tests on Residue from Evaporation			
Penetration @25°C, 100g., 5 sec., dmm	20 max.	T 49	
Softening Point,	°C	65 min.	T 53
Solubility,	%	97.5 min.	T 44

Orig. DSR @ 82°C,	kPa	1.00 min.	T 315"
-------------------	-----	-----------	--------

Revise the last table of Article 1032.06 to read:

Grade	Use
SS-1, SS-1h, CSS-1, CSS-1h, HFE-90, SS-1hP, CSS-1hP, SS-1vh	Prime or fog seal
PEP	Bituminous surface treatment prime
RS-2, HFE-90, HFE-150, HFE-300, CRSP, HFP, CRS-2, HFRS-2	Bituminous surface treatment
CSS-1h Latex Modified	Microsurfacing"

Add the following to Article 1101 of the Standard Specifications:

"1101.19 Regenerative Air Vacuum Sweeper. The regenerative air vacuum sweeper shall blast re-circulated, filtered air through a vacuum head having a minimum width of 6.0 feet at a minimum rate of 20,000 cubic feet per minute."

44003

440.03

## PROTECTION OF FRAMES AND LIDS OF UTILITY STRUCTURES

Effective March 6, 1991      Revised January 1, 2007

This work shall consist of protecting frames and lids of utility structures in the pavement after the adjacent hot-mix asphalt surface has been removed to the required depth by cold milling or by hand methods.

After the area has been swept clean and before the lane is opened to traffic, a hot bituminous mixture shall be placed around the casting, flush with its surface and decreasing to a featheredge in a distance of 4 feet (1.2 m) around the entire surface of the casting. Cold mix or milled material will not be permitted. This mixture shall remain in place until the day surfacing operations are undertaken within the immediate area of the structure. Prior to placing the surface course, the temporary hot-mix asphalt mixture shall be removed and disposed of by the Contractor as specified in Article 202.03 of the Standard Specifications.

The temporary tapers and their removal shall be considered included in the contract unit price per Square Meter (Square Yard) for HOT-MIX ASPHALT SURFACE REMOVAL of the depth specified, and no additional compensation will be allowed.

55000

550.00

**STORM SEWER, (WATER MAIN QUALITY PIPE)**

Effective January 1, 2011

Revised August 1, 2014

This work consists of constructing storm sewer to meet water main standards, as required by the IEPA or when otherwise specified. The work shall be performed in accordance with applicable parts of Section 550 of the Standard Specifications, applicable sections of the current edition of the IEPA Regulations (Title 35 of the Illinois Administrative Code, Subtitle F, Chapter II, Section 653.119), the applicable sections of the current edition of the "Standard Specifications for Water and Sewer Main Construction in Illinois", and as herein specified.

This provision shall govern the installation of all storm sewers which do not meet IEPA criteria for separation distance between storm sewers and water mains. Separation criteria for storm sewers placed adjacent to water mains and water service lines are as follows:

- (1) Water mains and water service lines shall be located at least 10 feet (3.05 meters) horizontally from any existing or proposed drain, storm sewer, sanitary sewer, or sewer service connections.
- (2) Water mains and water service lines may be located closer than 10 feet (3.05 meters) to a sewer line when:
  - (a) Local conditions prevent a lateral separation of 10 feet (3.05 meters); and
  - (b) The water main or water service invert is 18 inches (460 mm) above the crown of the sewer; and
  - (c) The water main or water service is either in a separate trench or in the same trench on an undisturbed earth shelf located to one side of the sewer.
- (3) A water main or water service shall be separated from a sewer so that its invert is a minimum of 18 inches (460 mm) above the crown of the drain or sewer whenever water mains or services cross storm sewers, sanitary sewers or sewer service connections. The vertical separation shall be maintained for that portion of the water main or water services located within 10 feet (3.05 meters) horizontally of any sewer or drain crossed.

When it is impossible to meet (1), (2) or (3) above, the storm sewer shall be constructed of concrete pressure pipe, slip-on or mechanical joints ductile iron pipe, or PVC pipe equivalent to water main standards of construction. Construction shall extend on each side of the crossing until the perpendicular distance from the water main or water service to the sewer or drain line is at least 10 feet (3.05 meters). Storm sewer meeting water main requirements shall be constructed of the following pipe materials:

Concrete Pressure Pipe

Concrete pressure pipe shall conform to the latest ANSI/AWWA C300, C301, C302, or C303.

Joints shall conform to Article 41-2.07B of the "Standard Specifications for Water and Sewer Main Construction in Illinois."

Ductile Iron Pipe

Ductile Iron pipe shall conform to ANSI A 21.51 (AWWA C151), class or thickness designed per ANSI A 21.50 (AWWA C150), tar (seal) coated and/or cement lined per ANSI A 21.4 (AWWA C104), with a mechanical or rubber ring (slip seal or push on) joints.

Joints for ductile iron pipe shall be in accordance with the following applicable specifications.

- |                      |   |                    |
|----------------------|---|--------------------|
| 1. Mechanical Joints | - | AWWA C111 and C600 |
| 2. Push-On Joints    | - | AWWA C111 and C600 |

Plastic Pipe

Plastic pipe shall be marked with the manufacturer's name (or trademark); ASTM or AWWA specification; Schedule Number, Dimension Ratio (DR) Number or Standard Dimension Ratio (SDR) Number; and Cell Class. The pipe and fittings shall also meet NSF Standard 14, and bear the NSF seal of approval. Fittings shall be compatible with the type of pipe used. The plastic pipe options shall be in accordance with the following:

1. Polyvinyl Chloride (PVC) conforming to ASTM Standard D 1785. Schedule 80 is the minimum required for all pipe sizes, except when the pipe is to be threaded, and then it shall be Schedule 120. It shall be made from PVC compound meeting ASTM D 1784, Class 12454.
2. Polyvinyl Chloride (PVC) conforming to ASTM D 2241. A minimum wall thickness of SDR 26 is required for all pipe sizes (Note: The lower the SDR number, the higher the wall thickness and pressure rating). It shall be made from PVC compound meeting ASTM D 1784, Class 12454.
3. Chlorinated Polyvinyl Chloride (CPVC) conforming to ASTM f 441. A minimum of Schedule 80 is required for all pipe sizes. Threaded joints are not allowed. It shall be made from CPVC compound meeting ASTM D 1784, Class 23447.
4. Chlorinated Polyvinyl Chloride (CPVC) conforming to ASTM F 442. A minimum wall thickness of SDR 26 is required for all pipe sizes (Note: The lower the SDR number, the higher the wall thickness and pressure rating). It shall be made from CPVC compound meeting ASTM D 1784.
5. Polyvinyl Chloride (PVC) conforming to ANSI/AWWA C900. A minimum of wall thickness of DR 25 is required for all pipe sizes (Note: The lower the DR number, the higher the wall thickness and pressure rating). It shall be made from PVC compound meeting ASTM D 1784, Class 12454.
6. Polyvinyl Chloride (PVC) conforming to ANSI/AWWA C905. A minimum of wall thickness of DR 26 is required for all pipe sizes (Note: The lower the DR number, the higher the wall thickness and pressure rating). It shall be made from PVC compound meeting ASTM D 1784, Class 12454.

Joining of plastic pipe shall be by push-on joint, solvent welded joint, heat welded joint, flanged joint, or threaded joint, in accordance with the pipe manufacturer's instructions and industry standards. Special precautions shall be taken to insure clean, dry contact surfaces when making solvent or heat welded joints. Adequate setting time shall be allowed for maximum strength.

Elastometric seals (gaskets) used for push-on joints shall comply with ASTM F477.

Solvent cement shall be specific for the plastic pipe material and shall comply with ASTM D 2564 (PVC) or ASTM F 493 (CPVC) and be approved by NSF.

This work will be measured and paid for at the contract unit price per Foot (Meter) for STORM SEWER (WATER MAIN QUALITY PIPE) of the diameter and type specified.

88600a

886.00a

**DETECTOR LOOPS, TYPE 1**

Effective March 1, 1996

Revised August 3, 2007

This work shall be in accordance with Sections 886 and 1079 of the Standard Specifications except as modified herein.

All detector loops shall utilize a separate pair of lead-ins and a Type II splice shall be used for all detector lead-ins.

All proposed detector loops shall be cut in the proposed binder course or milled surface prior to the final overlay. The riser area shall be chipped out and filled with epoxy.

All loop risers that are affected by construction shall be modified as needed and reflected through the new pavement. The cost of performing this work shall be considered incidental to this pay item and shall be taken into consideration in the bid price. There will be no additional compensation.

All detector loops shall be re-installed in the original locations. The Engineer of Traffic shall be notified prior to detector loop installation. Please contact Randy Laninga at (309) 671-4477 forty-eight (48 hrs.) hours prior to milling. Operations will alter the signal timing when the loops are removed.

The above work will be paid for at the contract unit price per Foot (Meter) for DETECTOR LOOP, TYPE I and shall be payment in full for all labor, materials, and equipment required to perform the work and install the detector loops described above.

High ESAL, MIXTURE COMPOSITION (% PASSING)											
Sieve Size	11-25.0 mm	11-19.0 mm	11-12.5 mm	11-9.5 mm	11-7.5 mm	11-4.75 mm	SMA <sup>a</sup>	SMA <sup>a</sup>	min	max	min
1 in. (25 mm)	90	100	100						100		
3/4 in. (19 mm)	90	82	100	100					100		
1/2 in. (12.5 mm)	45	75	50	85	90	100	100	80	100	100	
3/8 in. (9.5 mm)				89	90	100			65	90	100
#4 (4.75 mm)	24	42 <sub>24</sub>	24	50 <sub>24</sub>	28	65	32	69	90	100	36
#8 (2.36 mm)	16	31	20	36	28	48 <sub>34</sub>	32	52 <sub>34</sub>	70	90	16
#16 (1.18 mm)	10	22	10	25	10	32	10	32	50	65	
#30 (0.60 µm)											18

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

Revise the following table in Article 1030.04(a)(1):

All Other	HMA Shoulders Stabilized Subbase (HMA),
Low ESAL	11-19.0L binder; 11-9.5L surface
High ESAL	11-2.5 surface; 11-9.5 surface; 11-4.75; SMA 11-25.0 binder; 11-19.0 binder;

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

#### Design Composition and Volumetric Requirements

Effective: April 25, 2014

VERIFICATION AND PRODUCTION (D-4)  
HMA MIXTURE DESIGN REQUIREMENTS, VOLUMETRIC REQUIREMENTS,

#50 (300 $\mu\text{m}$ )	4	12	4	12	4	15	4	15	15	30			
#100 (150 $\mu\text{m}$ )	3	9	3	9	3	10	3	10	10	18			
#200 (75 $\mu\text{m}$ )	3	6	3	6	4	6	4	6	7	9 <sup>6/</sup>	7.0	9.0 <sup>6/</sup>	7.5
Ratio Dust/Asph alt Binder		1.0		1.0		1.0		1.0		1.0		1.5	1.5

- 1/ Based on percent of total aggregate weight.
- 2/ The mixture composition shall not exceed 40 percent passing the #4 (4.75 mm) sieve for binder courses with  $N_{\text{design}} \geq 90$ .
- 3/ The mixture composition shall not exceed 44 percent passing the #8 (2.36 mm) sieve for surface courses with  $N_{\text{design}} \geq 90$ .
- 4/ The maximum percent passing the 20  $\mu\text{m}$  sieve shall be  $\leq 3$  percent.
- 5/ When establishing the Adjusted Job Mix Formula (AJMF) the #8 (2.36mm) sieve shall not be adjusted above 24 percent.
- 6/ Additional minus No. 200 (0.075 mm) material required by the mix design shall be mineral filler, unless otherwise approved by the Engineer."

Delete Article 1030.04(a)(4) of the Standard Specifications.

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

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

VOLUMETRIC REQUIREMENTS High ESAL						
N <sub>design</sub>	Voids in the Mineral Aggregate (VMA), % minimum					Voids Filled with Asphalt Binder (VFA), %
	IL-25.0	IL-19.0	IL-12.5	IL-9.5	IL-4.75 <sup>1/</sup>	
50					18.5	65 – 78 <sup>2/</sup>
70						
90						
105	12.0	13.0	14.0	15.0		65 - 75

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

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

Delete Article 1030.04(b) (4) of the Standard Specifications.

Add table in Article 1030.04(b) as follows:

**"(5) SMA Mixtures.**

<b>Volumetric Requirements SMA<sup>1/</sup></b>			
<b>N<sub>design</sub></b>	<b>Design Air Voids Target %</b>	<b>Voids in the Mineral Aggregate (VMA), % min.</b>	<b>Voids Filled with Asphalt (VFA), %</b>
80 <sup>4/</sup>	3.5	17 <sup>2/</sup> 16 <sup>3/</sup>	75 - 83

- 1/ Maximum Draindown shall be 0.3%.
- 2/ Applies when specific gravity of coarse aggregate is  $\geq 2.760$ .
- 3/ Applies when specific gravity of coarse aggregate is  $< 2.760$ .
- 4/ For surface course, coarse aggregate shall be Class B Quality; the coarse aggregate can be crushed steel slag, crystalline crushed stone or crushed sandstone. For binder course, coarse aggregate shall be crushed stone (dolomite), crushed gravel, crystalline crushed stone, or crushed sandstone. Blending of different types of aggregate will not be permitted.

Revise the "Control Limits" table in Article 1030.05(d)(4) of the Standard Specifications to read:

<b>CONTROL LIMITS</b>					
<b>Parameter</b>	<b>High ESAL Low ESAL Individual Test</b>	<b>High ESAL Low ESAL Moving Avg. of 4</b>	<b>All Other Individual Test</b>	<b>IL-4.75 Individual Test</b>	<b>IL-4.75 Moving Avg. of 4</b>
<b>% Passing:</b> <sup>1/</sup>					
1/2 in. (12.5 mm)	$\pm 6\%$	$\pm 4\%$	$\pm 15\%$		
No. 4 (4.75 mm)	$\pm 5\%$	$\pm 4\%$	$\pm 10\%$		
No. 8 (2.36 mm)	$\pm 5\%$	$\pm 3\%$			
No. 16 (1.18 mm)				$\pm 4\%$	$\pm 3\%$
No. 30 (600 $\mu\text{m}$ )	$\pm 4\%$	$\pm 2.5\%$			
Total Dust Content No. 200 (75 $\mu\text{m}$ )	$\pm 1.5\%$	$\pm 1.0\%$	$\pm 2.5\%$	$\pm 1.5\%$	$\pm 1.0\%$
Asphalt Binder Content	$\pm 0.3\%$	$\pm 0.2\%$	$\pm 0.5\%$	$\pm 0.3\%$	$\pm 0.2\%$
Voids	$\pm 1.2\%$	$\pm 1.0\%$	$\pm 1.2\%$	$\pm 1.2\%$	$\pm 1.0\%$
VMA	-0.7% <sup>2/</sup>	-0.5% <sup>2/</sup>		-0.7% <sup>2/</sup>	-0.5% <sup>2/</sup>

**Design Verification and Production**

**Description.** The following states the requirements for Hamburg Wheel and Tensile Strength testing for High ESAL, IL-4.75, and Stone Matrix Asphalt (SMA) Hot-Mix Asphalt (HMA) mixes during mix design verification and production. The following also defines an acceptable test

strip. In addition it provides the plant requirements for hydrated lime addition systems used in the production of High ESAL, IL-4.75 and SMA mixtures.

When the options of Warm Mix Asphalt, Reclaimed Asphalt Shingles, or Reclaimed Asphalt Pavement are used by the Contractor, the Hamburg Wheel and tensile strength requirements in this special provision will be superseded by the special provisions for Warm Mix Asphalt and/or by the District special provision for Reclaimed Asphalt Pavement and Reclaimed Asphalt Shingles as applicable.

#### Mix Design Testing.

Add the following to Article 1030.04 of the Standard Specifications:

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

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

(1)Hamburg Wheel Test criteria.

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

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

For IL 4.75mm Designs (N-50) the maximum rut depth is 9.0mm at 15,000 repetitions.

(2) Tensile Strength Criteria. The minimum allowable conditioned tensile strength shall be 415 kPa (60 psi) for non-polymer modified performance graded (PG) asphalt binder and 550 kPa (80 psi) for polymer modified PG asphalt binder. The maximum allowable unconditioned tensile strength shall be 1,380 kPa (200 psi)."

#### Production Testing.

Revise Article 1030.06(a) to read:

"(a) High ESAL and IL-4.75 Mixtures. For each contract, a 300 ton (275 metric tons) test strip, except for IL -4.75 it will be 400 ton (363 metric ton), will be required at the beginning of HMA production for each mixture with a quantity of 3,000 tons (2,750 metric tons) or more according to the Manual of Test Procedures for Materials 'Hot-Mix Asphalt Test Strip Procedures'."

Before start-up, target values shall be determined by applying gradation correction factors to the JMF when applicable. These correction factors shall be determined from previous experience. The target values, when approved by the Engineer, shall be used to control HMA production. Plant settings and control charts shall be set according to target values.

Before constructing the test strip, target values shall be determined by applying gradation correction factors to the JMF when applicable. After any JMF adjustment, the JMF shall become the Adjusted Job Mix Formula (AJMF). Upon completion of the first acceptable test strip, the JMF shall become the AJMF regardless of whether or not the JMF has been adjusted. If an adjustment/plant change is made, the Engineer may require a new test strip to be constructed. If the HMA placed during the initial test strip is determined to be unacceptable to remain in place by the Engineer, it shall be removed and replaced.

The limitations between the JMF and AJMF are as follows.

Parameter	Adjustment
1/2 in. (12.5 mm)	$\pm 5.0\%$
No. 4 (4.75 mm)	$\pm 4.0\%$
No. 8 (2.36 mm)	$\pm 3.0\%$
No. 30 (600 $\mu\text{m}$ )	*
No. 200 (75 $\mu\text{m}$ )	*
Asphalt Binder Content	$\pm 0.3\%$

\* In no case shall the target for the amount passing be greater than the JMF.

Any adjustments outside the above limitations will require a new mix design.

Mixture sampled to represent the test strip shall include additional material sufficient for the Department to conduct Hamburg Wheel testing according to Illinois Modified AASHTO T 324 [approximately 60 lbs. (27 kg) total].

Revise the title of Article 1030.06(b) of the Standard Specifications to read:

"(b) Low ESAL and All Other Mixtures."

Add the following to Article 1030.06 of the Standard Specifications:

"(c) Hamburg Wheel Test. All HMA mixtures shall be sampled within the first 500 tons (450 metric tons) on the first day of production or during start up with a split reserved for the Department. The mix sample shall be tested according to the Illinois Modified AASHTO T 324 and shall meet the requirements specified herein. Mix production shall not exceed 1,500 tons (1,350 metric tons) or one day's production, whichever comes first, until the testing is completed and the mixture is found to be in conformance. The requirement to cease mix production may be waived if the plant produced mixture demonstrates conformance prior to start of mix production for a contract.

The Department may conduct additional Hamburg Wheel Tests on production material as determined by the Engineer. If the mixture fails to meet the Hamburg Wheel criteria, no further mixture will be accepted until the Contractor takes such action as is necessary to furnish a mixture meeting the criteria."

The Contractor shall immediately cease production upon notification by the Engineer of failing Hamburg Wheel test. All prior produced material may be paved out provided all other mixture criteria are being met. No additional mixture shall be produced until the Engineer receives passing Hamburg Wheel tests.

Test Strip.

Revise Article 406.14(b) of the Standard Specifications to read.

- "(b) If the HMA placed during the initial test strip (1) is determined to be unacceptable to remain in place by the Engineer, and (2) was not produced within 2.0 to 6.0 percent air voids or within the individual control limits of the JMF, the mixture and test strip will not be paid for and the mixture shall be removed at the Contractor's expense. An additional test strip and mixture will be paid for in full, if produced within 2.0 to 6.0 percent air voids and within the individual control limits of the JMF."

Revise Article 406.14(c) of the Standard Specifications to read.

- "(c) If the HMA placed during the initial test strip (1) is determined to be unacceptable to remain in place by the Engineer, and (2) was produced within 2.0 to 6.0 percent air voids and within the individual control limits of the JMF, the mixture shall be removed. Removal will be paid in accordance to Article 109.04 of the Standard Specifications. This initial mixture and test strip will be paid for at the contract unit prices. The additional mixture will be paid for at the contract unit price, and any additional test strips will be paid for at one half the unit price of each test strip."

Plant Requirements for Hydrated Lime Addition Systems.

Revise the fourth sentence of the third paragraph of Article 1030.04(c) of the Standard Specifications to read:

"The method of application shall be according to Article 1102.01(a)(10)."

Replace the first three sentences of the second paragraph of Article 1102.01(a)(10) of the Standard Specifications to read:

"When hydrated lime is used as the anti-strip additive, a separate bin or tank and feeder system shall be provided to store and accurately proportion the lime onto the aggregate either as a slurry, as dry lime applied to damp aggregates, or as dry lime injected onto the hot aggregates prior to adding the liquid asphalt cement. If the hydrated lime is added either as a slurry or as dry lime on damp aggregates, the lime and aggregates shall be mixed by a power driven pugmill to provide a uniform coating of the lime prior to entering the dryer. If dry hydrated lime is added to the hot dry aggregates in a dryer-drum plant, the lime shall be added in such a manner that the lime will not become entrained into the air stream of the dryer-drum and that thorough dry mixing shall occur prior to the injection point of the liquid asphalt. When a batch plant is used, the hydrated lime shall be added to the mixture in the weigh hopper or as approved by the Engineer."

Basis of Payment.

Revise the seventh paragraph of Article 406.14 of the Standard Specifications to read:

"For all mixes designed and verified under the Hamburg Wheel criteria, the cost of furnishing and introducing anti-stripping additives in the HMA will not be paid for separately, but shall be considered as included in the contract unit price of the HMA item involved.

No additional compensation will be awarded to the Contractor because of reduced production rates associated with the addition of the anti-stripping additive."

## **RECLAIMED ASPHALT PAVEMENT AND RECLAIMED ASPHALT SHINGLES (D-4)**

Effective April 25, 2014      Revised August 1, 2014

Revise Section 1031 of the Standard Specifications to read:

### **"SECTION 1031. RECLAIMED ASPHALT PAVEMENT AND RECLAIMED ASPHALT SHINGLES**

**1031.01 Description.** Reclaimed asphalt pavement and reclaimed asphalt shingles shall be according to the following.

- (a) Reclaimed Asphalt Pavement (RAP). RAP is the material resulting from cold milling or crushing an existing hot-mix asphalt (HMA) pavement. RAP will be considered processed FRAP after completion of both crushing and screening to size. The Contractor shall supply written documentation that the RAP originated from routes or air fields under federal, state, or local agency jurisdiction.
- (b) Reclaimed Asphalt Shingles (RAS). Reclaimed asphalt shingles (RAS). RAS is from the processing and grinding of preconsumer or post-consumer shingles. RAS shall be a clean and uniform material with a maximum of 0.5 percent unacceptable material, as defined in Bureau of Materials and Physical Research Policy Memorandum "Reclaimed Asphalt Shingle (RAS) Sources", by weight of RAS. All RAS used shall come from a Bureau of Materials and Physical Research approved processing facility where it shall be ground and processed to 100 percent passing the 3/8 in. (9.5 mm) sieve and 90 percent passing the #4 (4.75 mm) sieve. RAS shall meet the testing requirements specified herein. In addition, RAS shall meet the following Type 1 or Type 2 requirements.
  - (1) Type 1. Type 1 RAS shall be processed, preconsumer asphalt shingles salvaged from the manufacture of residential asphalt roofing shingles.
  - (2) Type 2. Type 2 RAS shall be processed post-consumer shingles only, salvaged from residential, or four unit or less dwellings not subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP).

**1031.02 Stockpiles.** RAP and RAS stockpiles shall be according to the following.

- (a) RAP Stockpiles. The Contractor shall construct individual, sealed RAP stockpiles meeting one of the following definitions. Additional processed RAP (FRAP) shall be stockpiled in a separate working pile, as designated in the QC Plan, and only added to the sealed stockpile when test results for the working pile are complete and are found to meet tolerances specified herein for the original sealed FRAP stockpile. Stockpiles shall be sufficiently separated to prevent intermingling at the base. All stockpiles (including unprocessed RAP and FRAP) shall be identified by signs indicating the type as listed below (i.e. "Non- Quality, FRAP #4 or Type 2 RAS", etc.).

- (1) Fractionated RAP (FRAP). FRAP shall consist of RAP from Class I, Superpave

HMA (High and Low ESAL) or equivalent mixtures. The coarse aggregate in FRAP shall be crushed aggregate and may represent more than one aggregate type and/or quality but shall be at least C quality. All FRAP shall be processed prior to testing and sized into fractions with the separation occurring on or between the #4 (4.75 mm) and 1/2 in. (12.5 mm) sieves. Agglomerations shall be minimized such that 100 percent of the RAP in the coarse fraction shall pass the maximum sieve size specified for the mix the FRAP will be used in.

- (2) Restricted FRAP (B quality) stockpiles shall consist of RAP from Class I, Superpave (High ESAL), or HMA (High ESAL). If approved by the Engineer, the aggregate from a maximum 3.0 inch single combined pass of surface/binder milling will be classified as B quality. All millings from this application will be processed into FRAP as described previously.
- (3) Conglomerate. Conglomerate RAP stockpiles shall consist of RAP from Class I, Superpave HMA (High and Low ESAL) or equivalent mixtures. The coarse aggregate in this RAP shall be crushed aggregate and may represent more than one aggregate type and/or quality but shall be at least C quality. This RAP may have an inconsistent gradation and/or asphalt binder content prior to processing. All conglomerate RAP shall be processed (FRAP) prior to testing. Conglomerate RAP stockpiles shall not contain steel slag or other expansive material as determined by the Department.
- (4) Conglomerate "D" Quality (DQ). Conglomerate DQ RAP stockpiles shall consist of RAP from HMA shoulders, bituminous stabilized subbases or Superpave (Low ESAL)/HMA (Low ESAL) IL-19.0L binder mixture. The coarse aggregate in this RAP may be crushed or round but shall be at least D quality. This RAP may have an inconsistent gradation and/or asphalt binder content. Conglomerate DQ RAP stockpiles shall not contain steel slag or other expansive material as determined by the Department.
- (5) Non-Quality. RAP stockpiles that do not meet the requirements of the stockpile categories listed above shall be classified as "Non-Quality".

RAP or FRAP containing contaminants, such as earth, brick, sand, concrete, sheet asphalt, bituminous surface treatment (i.e. chip seal), pavement fabric, joint sealants, plant cleanout etc., will be unacceptable unless the contaminants are removed to the satisfaction of the Engineer. Sheet asphalt shall be stockpiled separately.

- (b) RAS Stockpiles. Type 1 and Type 2 RAS shall be stockpiled separately and shall be sufficiently separated to prevent intermingling at the base. Each stockpile shall be signed indicating what type of RAS is present.

However, a RAS source may submit a written request to the Department for approval to blend mechanically a specified ratio of type 1 RAS with type 2 RAS. The source will not be permitted to change the ratio of the blend without the Department prior written approval. The Engineer's written approval will be required, to mechanically blend RAS with any fine aggregate produced under the AGCS, up to an equal weight of RAS, to improve workability. The fine aggregate shall be "B Quality" or better from an approved Aggregate Gradation Control System source. The fine aggregate shall be one that is approved for use in the HMA mixture and accounted for in the mix design and during HMA production.

Records identifying the shingle processing facility supplying the RAS, RAS type and lot number shall be maintained by project contract number and kept for a minimum of 6 years.

three years.

**1031.03 Testing.** FRAP and RAS testing shall be according to the following.

- (a) **FRAP Testing.** When used in HMA, the FRAP shall be sampled and tested either during processing or after stockpiling. It shall also be sampled during HMA production.
- (1) **During Stockpiling.** For testing during stockpiling, washed extraction samples shall be run at the minimum frequency of one sample per 500 tons (450 metric tons) for the first 2,000 tons (1,800 metric tons) and one sample per 2,000 tons (1800 metric tons) thereafter. A minimum of five tests shall be required for stockpiles less than 4,000 tons (3,600 metric tons).
  - (2) **Incoming Material.** For testing as incoming material, washed extraction samples shall be run at a minimum frequency of one sample per 2,000 tons (1,800 metric tons) or once per week, whichever comes first.
  - (3) **After Stockpiling.** For testing after stockpiling, the Contractor shall submit a plan for approval to the District proposing a satisfactory method of sampling and testing the RAP/FRAP pile either in-situ or by restockpiling. The sampling plan shall meet the minimum frequency required above and detail the procedure used to obtain representative samples throughout the pile for testing.

Before extraction, each field sample of FRAP, shall be split to obtain two samples of test sample size. One of the two test samples from the final split shall be labeled and stored for Department use. The Contractor shall extract the other test sample according to Department procedure. The Engineer reserves the right to test any sample (split or Department-taken) to verify Contractor test results.

- (b) **RAS Testing.** RAS shall be sampled and tested during stockpiling according to Bureau of Materials and Physical Research Policy Memorandum, "Reclaimed Asphalt Shingle (RAS) Sources". The Contractor shall also sample as incoming material at the HMA plant.

- (1) **During Stockpiling.** Washed extraction and testing for unacceptable materials shall be run at the minimum frequency of one sample per 200 tons (180 metric tons) for the first 1,000 tons (900 metric tons) and one sample per 1000 tons (900 metric tons) thereafter. A minimum of five samples are required for stockpiles less than 1,000 tons (900 metric tons). Once a  $\leq$  1,000 ton (900 metric ton), five-sample/test stockpile has been established it shall be sealed. Additional incoming RAS shall be in a separate working pile as designated in the Quality Control plan and only added to the sealed stockpile when the test results of the working pile are complete and are found to meet the tolerances specified herein for the original sealed RAS stockpile.
- (2) **Incoming Material.** For testing as incoming material at the HMA plant, washed extraction shall be run at the minimum frequency of one sample per 250 tons (227 metric tons). A minimum of five samples are required for stockpiles less than 1000 tons (900 metric tons). The incoming material test results shall meet the tolerances specified herein.

The Contractor shall obtain and make available all test results from start of the initial stockpile sampled and tested at the shingle processing facility in accordance with the facility's QC Plan.

Before extraction, each field sample shall be split to obtain two samples of test sample size. One of the two test samples from the final split shall be labeled and stored for Department use. The Contractor shall extract the other test sample according to Department procedures. The Engineer reserves the right to test any sample (split or Department-taken) to verify Contractor test results.

**1031.04 Evaluation of Tests.** Evaluation of tests results shall be according to the following.

(a) Evaluation of FRAP Test Results. All test results shall be compiled to include asphalt binder content, gradation and, when applicable (for slag),  $G_{mm}$ . A five test average of results from the original pile will be used in the mix designs. Individual extraction test results run thereafter, shall be compared to the average used for the mix design, and will be accepted if within the tolerances listed below.

Parameter	FRAP
No. 4 (4.75 mm)	$\pm 6\%$
No. 8 (2.36 mm)	$\pm 5\%$
No. 30 (600 $\mu\text{m}$ )	$\pm 5\%$
No. 200 (75 $\mu\text{m}$ )	$\pm 2.0\%$
Asphalt Binder	$\pm 0.3\%$
$G_{mm}$	$\pm 0.03$ <sup>1/</sup>

1/ For stockpile with slag or steel slag present as determined in the current Manual of Test Procedures Appendix B 21, "Determination of Reclaimed Asphalt Pavement Aggregate Bulk Specific Gravity".

If any individual sieve and/or asphalt binder content tests are out of the above tolerances when compared to the average used for the mix design, the FRAP stockpile shall not be used in Hot-Mix Asphalt unless the FRAP representing those tests is removed from the stockpile. All test data and acceptance ranges shall be sent to the District for evaluation.

The Contractor shall maintain a representative moving average of five tests to be used for Hot-Mix Asphalt production.

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)" or Illinois Modified AASHTO T-164-11, Test Method A.

(b) Evaluation of RAS Test Results. All of the test results, with the exception of percent unacceptable materials, shall be compiled and averaged for asphalt binder content and gradation. A five test average of results from the original pile will be used in the mix designs. Individual test results run thereafter, when compared to the average used for the mix design, will be accepted if within the tolerances listed below.

Parameter	RAS
No. 8 (2.36 mm)	$\pm 5\%$
No. 16 (1.18 mm)	$\pm 5\%$
No. 30 (600 $\mu\text{m}$ )	$\pm 4\%$
No. 200 (75 $\mu\text{m}$ )	$\pm 2.5\%$
Asphalt Binder Content	$\pm 2.0\%$

If any individual sieve and/or asphalt binder content tests are out of the above tolerances when compared to the average used for the mix design, the RAS shall not be used in Hot-Mix Asphalt unless the RAS representing those tests is removed from the stockpile. All test data and acceptance ranges shall be sent to the District for evaluation.

- (c) Quality Assurance by the Engineer. The Engineer may witness the sampling and splitting conduct assurance tests on split samples taken by the Contractor for quality control testing a minimum of once a month.

The overall testing frequency will be performed over the entire range of Contractor samples for asphalt binder content and gradation. The Engineer may select any or all split samples for assurance testing. The test results will be made available to the Contractor as soon as they become available.

The Engineer will notify the Contractor of observed deficiencies.

Differences between the Contractor's and the Engineer's split sample test results will be considered acceptable if within the following limits.

Test Parameter	Acceptable Limits of Precision	
% Passing. <sup>1/</sup>	FRAP	RAS
1 / 2 in.	5.0%	
No. 4	5.0%	
No. 8	3.0%	4.0%
No. 30	2.0%	3.0%
No. 200	2.2%	2.5%
Asphalt Binder Content	0.3%	1.0%
G <sub>mm</sub>	0.030	

1/ Based on washed extraction.

In the event comparisons are outside the above acceptable limits of precision, the Engineer will immediately investigate.

- (d) Acceptance by the Engineer. Acceptable of the material will be based on the validation of the Contractor's quality control by the assurance process.

#### **1031.05 Quality Designation of Aggregate in RAP and FRAP.**

- (a) RAP. The aggregate quality of the RAP for homogenous, conglomerate, and conglomerate "D" quality stockpiles shall be set by the lowest quality of coarse aggregate in the RAP stockpile and are designated as follows.
- (1) RAP from Class I, Superpave/HMA (High ESAL), or (Low ESAL) IL-9.5L surface mixtures are designated as containing Class B Quality Coarse Aggregate.
  - (2) RAP from Superpave/HMA (Low ESAL) IL-19.0L binder mixture is designated as Class D Quality Coarse Aggregate.
  - (3) RAP from Class I, Superpave/HMA (High ESAL) binder mixtures, bituminous base

course mixtures, and bituminous base course widening mixtures are designated as containing Class C Quality Coarse Aggregate.

- (4) RAP from bituminous stabilized subbase and BAM shoulders are designated as containing Class D Quality Coarse Aggregate.
- (b) FRAP. If the Engineer has documentation of the quality of the FRAP aggregate, the Contractor shall use the assigned quality provided by the Engineer.

If the quality is not known, the quality shall be determined as follows. Fractionated RAP stockpiles containing plus #4 (4.75 mm) sieve coarse aggregate shall have a maximum tonnage of 5,000 tons (4,500 metric tons). The Contractor shall obtain a representative sample witnessed by the Engineer. The sample shall be a minimum of 50 lbs. (25 kg). The sample shall be extracted according to Illinois Modified AASHTO T 164 by a consultant prequalified by the Department for the specified testing. The consultant shall submit the test results along with the recovered aggregate to the District Office. The cost for this testing shall be paid by the Contractor. The District will forward the sample to the BMP Aggregate Lab for MicroDeval Testing, according to Illinois Modified AASHTO T 327. A maximum loss of 15.0 percent will be applied for all HMA applications. The fine aggregate portion of the fractionated RAP shall not be used in any HMA mixtures that require a minimum of "B" quality aggregate or better, until the coarse aggregate fraction has been determined to be acceptable thru a MicroDeval Testing.

**1031.06 Use of FRAP and/or RAS in HMA.** The use of FRAP and/or RAS shall be a Contractor's option when constructing HMA in all contracts.

- (a) FRAP. The use of FRAP in HMA shall be as follows.
- (1) Coarse Aggregate Size (after extraction). The coarse aggregate in all FRAP shall be equal to or less than the nominal maximum size requirement for the HMA mixture to be produced.
- (2) Steel Slag Stockpiles. FRAP stockpiles containing steel slag or other expansive material, as determined by the Department, shall be homogeneous and will be approved for use in HMA (High ESAL and Low ESAL) mixtures regardless of lift or mix type.
- (3) Use in HMA Surface Mixtures (High and Low ESAL). FRAP stockpiles for use in HMA surface mixtures (High and Low ESAL) shall have coarse aggregate that is Class B quality or better. FRAP shall be considered equivalent to limestone for frictional considerations unless produced/screened to minus 3/8" inch.
- (4) Use in HMA Binder Mixtures (High and Low ESAL), HMA Base Course, and HMA Base Course Widening. FRAP stockpiles for use in HMA binder mixtures (High and Low ESAL), HMA base course, and HMA base course widening shall be FRAP in which the coarse aggregate is Class C quality or better.
- (5) Use in Shoulders and Subbase. FRAP stockpiles for use in HMA shoulders and stabilized subbase (HMA) shall be FRAP, Restricted FRAP, conglomerate, or conglomerate DQ.
- (b) RAS. RAS meeting Type 1 or Type 2 requirements will be permitted in all HMA applications as specified herein.

- (c) FRAP and/or RAS Usage Limits. Type 1 or Type 2 RAS may be used alone or in conjunction with FRAP in HMA mixtures up to a maximum of 5.0% by weight of the total mix.

When FRAP, RAS or FRAP in conjunction with RAS is used, the percent of virgin asphalt binder replacement (ABR) shall not exceed the amounts indicated in the table below for a given N Design.

Max Asphalt Binder Replacement for FRAP with RAS Combination

HMA Mixtures <sup>1/2/4/</sup>	Maximum % ABR		
	Binder/Leveling Binder	Surface	Polymer Modified <sup>3/</sup>
Ndesign			
30L	50	40	30
50	40	35	30
70	40	30	30
90	40	30	30
4.75 mm N-50			40
SMA N-80			30

- 1/ For HMA "All Other" (shoulder and stabilized subbase) N-30, the percent asphalt binder replacement shall not exceed 50% of the total asphalt binder in the mixture.
- 2/ When the binder replacement exceeds 15 percent for all mixes, except for SMA and IL-4.75, the high and low virgin asphalt binder grades shall each be reduced by one grade (i.e. 25 percent binder replacement using a virgin asphalt binder grade of PG64-22 will be reduced to a PG58-28). When constructing full depth HMA and the ABR is less than 15 percent, the required virgin asphalt binder grade shall be PG64-28.
- 3/ When the ABR for SMA or IL-4.75 is 15 percent or less, the required virgin asphalt binder shall be SBS PG76-22 and the elastic recovery shall be a minimum of 80. When the ABR for SMA or IL-4.75 exceeds 15%, the virgin asphalt binder grade shall be SBS PG70-28 and the elastic recovery shall be a minimum of 80.
- 4/ When FRAP or RAS is used alone, the maximum percent asphalt binder replacement designated on the table shall be reduced by 10%.

**1031.07 HMA Mix Designs.** At the Contractor's option, HMA mixtures may be constructed utilizing FRAP and/or RAS material meeting the detailed requirements specified herein.

- (a) FRAP and/or RAS. FRAP and /or RAS mix designs shall be submitted for verification. If additional FRAP or RAS stockpiles are tested and found to be within tolerance, as defined under "Evaluation of Tests" herein, and meet all requirements herein, the additional FRAP or RAS stockpiles may be used in the original design at the percent previously verified.

- (b) RAS. Type 1 and Type 2 RAS are not interchangeable in a mix design. A RAS stone bulk specific gravity (Gsb) of 2.500 shall be used for mix design purposes.

**1031.08 HMA Production.** HMA production utilizing FRAP and/or RAS shall be as follows.

To remove or reduce agglomerated material, a scalping screen, gator, crushing unit, or comparable sizing device approved by the Engineer shall be used in the RAS and FRAP feed system to remove or reduce oversized material. If material passing the sizing device adversely affects the mix production or quality of the mix, the sizing device shall be set at a size specified by the Engineer.

If during mix production, corrective actions fail to maintain FRAP, RAS or QC/QA test results within control tolerances or the requirements listed herein the Contractor shall cease production of the mixture containing FRAP or RAS and conduct an investigation that may require a new mix design.

- (a) RAS. RAS shall be incorporated into the HMA mixture either by a separate weight depletion system or by using the RAP weigh belt. Either feed system shall be interlocked with the aggregate feed or weigh system to maintain correct proportions for all rates of production and batch sizes. The portion of RAS shall be controlled accurately to within  $\pm 0.5$  percent of the amount of RAS utilized. When using the weight depletion system, flow indicators or sensing devices shall be provided and interlocked with the plant controls such that the mixture production is halted when RAS flow is interrupted.
- (b) HMA Plant Requirements. HMA plants utilizing FRAP and/or RAS shall be capable of automatically recording and printing the following information.

- (1) Dryer Drum Plants.
- a. Date, month, year, and time to the nearest minute for each print.
  - b. HMA mix number assigned by the Department.
  - c. Accumulated weight of dry aggregate (combined or individual) in tons (metric tons) to the nearest 0.1 ton (0.1 metric ton).
  - d. Accumulated dry weight of RAS and FRAP in tons (metric tons) to the nearest 0.1 ton (0.1 metric ton).
  - e. Accumulated mineral filler in revolutions, tons (metric tons), etc. to the nearest 0.1 unit.
  - f. Accumulated asphalt binder in gallons (liters), tons (metric tons), etc. to the nearest 0.1 unit.
  - g. Residual asphalt binder in the RAS and FRAP material as a percent of the total mix to the nearest 0.1 percent.
  - h. Aggregate RAS and FRAP moisture compensators in percent as set on the control panel. (Required when accumulated or individual aggregate and RAS and FRAP are printed in wet condition.)
  - i. When producing mixtures with FRAP and/or RAS, a positive dust control

system shall be utilized.

- j. Accumulated mixture tonnage.
- k. Dust Removed (accumulated to the nearest 0.1 ton)

(2) Batch Plants.

- a. Date, month, year, and time to the nearest minute for each print.
- b. HMA mix number assigned by the Department.
- c. Individual virgin aggregate hot bin batch weights to the nearest pound (kilogram).
- d. Mineral filler weight to the nearest pound (kilogram).
- e. RAS and FRAP weight to the nearest pound (kilogram).
- f. Virgin asphalt binder weight to the nearest pound (kilogram).
- g. Residual asphalt binder in the RAS and FRAP material as a percent of the total mix to the nearest 0.1 percent.

The printouts shall be maintained in a file at the plant for a minimum of one year or as directed by the Engineer and shall be made available upon request. The printing system will be inspected by the Engineer prior to production and verified at the beginning of each construction season thereafter.

**1031.09 RAP in Aggregate Surface Course and Aggregate Shoulders.** The use of RAP or FRAP in aggregate surface course and aggregate shoulders shall be as follows.

- (a) Stockpiles and Testing. RAP stockpiles may be any of those listed in Article 1031.02, except "Non-Quality" and "FRAP". The testing requirements of Article 1031.03 shall not apply. RAP used to construct aggregate surface course and aggregate shoulders shall be according to the current Bureau of Materials and Physical Research's Policy Memorandum, "Reclaimed Asphalt Pavement (RAP) for Aggregate Applications"
- (b) Gradation. One hundred percent of the RAP material shall pass the 1½ in. (37.5mm) sieve. The RAP material shall be reasonably well graded from coarse to fine. RAP material that is gap-graded, FRAP, or single sized will not be accepted for use as Aggregate Surface Course and Aggregate Shoulders."

110300

1103.00

## **PCC QC/QA ELECTRONIC REPORT SUBMITTAL**

Effective April 26, 2013

The Contractor's QC personnel shall be responsible for electronically submitting PRO and IND MI 654 Air, Slump, Quantity and PRO MI 655 PCC Strength Reports to the Department. The format for the electronic submittals will be the PCC QC/QA reporting program, which will be provided by the Department. Microsoft Office 2007 or newer is required for this program which must be provided by the Contractor.

110303

1103.03

## **PCC AUTOMATIC BATCHING EQUIPMENT**

Effective April 23, 2010      Revised November 8, 2013

Portland cement concrete provided shall be produced from batch plants that conform to the requirements of Article 1103.03 (a) and (b) of the Standard Specifications for Road and Bridge Construction. Semi-automatic batching will not be allowed.

In addition, the batching plant shall be a computerized plant interfaced with a printer and shall print actual batch weights, added water, tempering water, mixing time, and amount of each additive per batch. At the discretion of the Engineer, archived electronic versions of batch proportions will be acceptable. Truck delivery tickets will still be required as per Article 1020.11 (a)(7) of the Standard Specifications.

## PROJECT SPECIFIC SPECIAL PROVISIONS

### **EARTH EXCAVATION (SPECIAL)**

This work shall be completed in accordance with all requirements of Section 202 of the Standard Specifications. The location of the excavation is identified on the drawings as Basin 1 and Basin 2. The material excavated for the basins as shown in the plans shall be paid at the contract unit price per cubic yard for Earth Excavation (Special).

### **PIPE UNDERDRAINS 24"**

This work and materials shall be in accordance with Section 601 of the Standard Specifications. The pipe underdrain shall be measured in accordance with Article 601.07. The pipe underdrain shall be paid for at the contract unit price per foot for Pipe Underdrains 24".

### **HIGH-EARLY STRENGTH PCC PAVEMENT, 9"**

This work shall consist of placing material as shown on the construction detail for "Pavement Construction at Storm and Utility Manholes" at the locations identified on the plans. Article 420 shall govern the material and methods for completing this work with the following exceptions. Hand finishing methods may be used to complete the work. A vibrator shall be inserted into the concrete and worked through the material to consolidate the concrete before finishing operations. All edges of the surface shall be finished with a tooled edge. No reinforcing mesh or bars are required for this work. Type B Final Finish shall be applied. The thickness of the PCC material shall be equal to but not less than the depth of the Frame and Lid casting. The typical thickness will be 9 inches.

### **REBUILD EXISTING HANDHOLE**

This work shall consist of removing existing handholes at locations identified on the plans and constructing new handholes to match the proposed elevations of the new construction. This work shall be completed as specified in Article 895 of the Standard Specifications. This work will be paid for at the contract unit price per each for Rebuild Existing Handhole.

### **HANDRAIL REMOVAL**

This work shall consist of removing tubular steel handrails and concrete foundations at locations indicated on the plans. Section 501 of the Standard Specifications shall govern this work. Removal and disposal of all materials will be measured per linear foot of handrail removed and paid for at the contract unit price for Handrail Removal.

### **SLOPE WALL, SPECIAL**

This work shall be performed in accordance with the requirements of Section 511 of the Standard Specifications and the details provided in the drawings at the locations identified in the drawings. The item shall be measured in place along the plane of the slope in square yards and paid at the contract unit price for Slope Wall, Special.

### **LED STREET LIGHT POLE AND LUMINAIRE (COMPLETE)**

#### Description

This work shall consist of furnishing and installing a luminaire and associated light pole in accordance with Section 821 of the Standard Specifications, the details in the plans, and the following additions or exceptions.

Materials

The full cut-off luminaire shall have a structured LED 2 engine array driven at 700mA to provide a minimum of 13,000 initial lumens at 4000K. Distribution shall be IES Distribution Type 3. Provide a multi-tap type driver yet voltage will be 240VAC nominal. The luminaire enclosure shall be IP65 rated and be Black in color.

The luminaire shall be the D-Series manufactured by Lithonia, catalog number DSX1 KED 60C 700 40K T3M MVOLT RPA DBLXD; or equivalent.

The pole shall be 25 foot round straight aluminum with all thickness of 0.188. Include a vibration dampener inside of the pole. Pole shall be black in color. Lithonia, catalog number RSA 25 6G.

Basis of Payment

This work will be paid for at the contract unit price each for LED STREET LIGHT POLE AND LUMINAIRE (COMPLETE) which price shall include all labor, equipment, and material necessary to complete the work as specified.

**BIKE LANE MICRO OVERLAY, 3 PASSES (SPECIAL)**  
**PART 1 – GENERAL**

**1.1 Description**

- A. Bike lane coating is a highly specialized coating specifically designed for application onto HMA pavement to demarcate bike lanes.
- B. Bike lane coating has been scientifically formulated to provide the optimal balance of performance properties for a durable, long lasting color and texture to HMA pavement surfaces. Some of these performance properties include wear and crack resistance, color retention, adhesion, minimal water absorption and increased friction properties.
- C. Bike lane coating performance shall be tested and verified by an independent recognized testing laboratory. A Certificate of Analysis confirming these test results is available through an accredited applicator. Refer to the certified performance properties of bike lane coating outlined in Section 2.2 of this specification.
- D. Coating coloring shall meet the FHWA color requirements for bike paths.
- E. To ensure the most successful installation, it is required that an Accredited Applicator, place the bike lane coating.

**1.2 References**

- A. ASTM D-4541 Standard Test Method for Pull-Off Strength of Coatings Using Portable Adhesion Tester.
- B. ASTM D-4060 Test Method for Abrasion Resistance of Organic Coatings by the Taber Abrasion.
- C. ASTM D522-93A Standard Test Method for Mandrel Bend Test of Attached Organic Coatings.
- D. ASTM G-155 QUV Accelerated Weathering Environment. Standard practice for Operating Fluorescent Light Apparatus for UV Exposure of Nonmetallic Materials.
- E. ASTM D-2486 MEK rub test for chemical resistance.
- F. ASTM D-570 Standard Test Method for water absorption of plastics.
- G. ASTM E-303 British Pendulum test for friction.
- H. EPA 24 ASTM D3960-05 Volatile Organic Compounds.

**1.3 Definitions**

- A. "Accredited Applicator" is a licensed applicator who holds a Level 1 or higher certificate of accreditation. Accredited Applicators are reviewed on an annual basis and certificates are valid only for the calendar year. All Accredited Applicators have a foreman, supervisor or lead-hand that has successfully completed a Level I or Level II Training Program.
- Level 1 accreditation indicates that the Accredited Applicator has completed Level 1 training and typically completes a minimum of 20,000 SF of HMA pavement coating application per year.
  - Level 2 accreditation indicates that the Accredited Applicator has completed both Level 1 and Level 2 training and typically completes a minimum of 30,000 SF of HMA pavement coating application per year.
  - Level 3 accreditation indicates that the Accredited Applicator has completed both Level 1 and Level 2 training and typically completes a minimum of 80,000 SF of HMA pavement coating application per year. Level 3 applicators typically employ a crew leader and crew who are committed full time to HMA coating installations.
- B. "HMA pavement" is Hot-Mix Asphalt pavement.
- C. "The Work" is the application of the bike lane coating to the surface.
- D. "Owner" refers to the Illinois Department of Transportation and the Resident Engineer who has decision making authority for the work.

#### **1.4 Required Bid Submittal Documents**

As part of the documents required at pre-construction conference:

- A. A copy of the current year Level 1, 2 or 3 accreditation certificate available from the Accredited Applicator(s) or written verification from the supplier that the contractor is qualified to perform this work.
- B. Confirmation of coating color, Bike Path Green meeting FHWA color requirements, to be utilized for this project.
- C. Proof of coating performance through a Certificate of Analysis provided by the Accredited Applicator.

### **PART 2 – PRODUCTS**

#### **2.1 Materials**

Bike lane coating is an epoxy-modified, acrylic, waterborne coating specifically designed for application on HMA pavements.

- A. For application of bike lane coating to surfaces other than HMA pavement, it is recommended to test the application of the coating to a section of the surface before proceeding with the work.
- B. Bike lane coating is specially formulated to provide a safe, durable, long lasting color and texture to the selected surface.
- C. Bike lane coating shall be environmentally safe and meet EPA requirements for Volatile Organic Compounds (VOC).
- D. Colorant is a highly concentrated, high quality, UV stable pigment blend designed to be added to coating to provide color to the coating. One pint (.473 liter) of colorant Part B shall be added to the 5 gallon (20 liter) pail of Part A.
- E. Primer is formulated to enhance the adhesion of coating to pre-existing HMA pavement and/or previously coated HMA pavements.

## 2.2 Performance Properties of Coating

The following table outlines performance properties of bike lane coating which are backed up by Certificates of Analysis produced by an independent qualified testing facility. The Accredited Applicator shall provide a copy upon request.

**TABLE 1**  
**Typical Performance Properties of Coating**

Characteristic	Test Specification	Measured Result
Durability: Taber Abrasion Resistance	ASTM D-4060 1 day cure, H-10 wheel: cycles (dry)	<1.5 g/1000
Water Sensitivity	ASTM D570 Water absorption after 9 days: Remaining absorption after 1 hour of	<10% <1.0%
Color Stability	ASTM G-155 QUV 2,000 hours (CIE units)	Brick color $\Delta E < 1.5$
Flexibility: Mandrel Bend	ASTM D522-93A Flexibility as measured by Mandrel bend 0.5mm thick sample passes 10mm at 21°C 0.5mm thick sample passes 125mm at -18°C	
Chemical resistance	ASTM D-2486 Modified MEK scrubs 16 dry mils, number of scrubs until 50% substrate exposed	>5000
Adhesion to Asphalt	ASTM D-4541	Substrate failure
Friction Wet	ASTM E-303 British Pendulum Tester	>55
Environmental Sensitivity	EPA 24 ASTM D3960-05 Volatile Organic Compounds	VOC < 150

## ~~2.3 Equipment Specifications~~

Coating shall be delivered to the surface in multiple layers utilizing system containing a pump, spray assembly and coating hopper designed specific for the application of the coating. The entire system shall be portable and have a wheel assembly for easy movement to allow for continuous spraying. The following equipment is an integral part of the proper application of bike lane coating.

A. The sprayer shall be capable of applying the bike lane coating material to the surface in a thin, controlled film which will optimize the drying and curing time of the coating.

### ~~Spray Gun:~~

- low pressure air texture spray gun
- 3mm-4mm diameter tips which allow for optimal coating application yielding 5-6 mil of coating thickness on each pass and minimizes atomization and overspray.

### ~~Hose:~~

- maximum 25 ft. spray hose with a 5/8 ID

B. The coatings mixer is a motorized mixing device designed exclusively for use with coatings specified in Table 1.

C. Pump shall be of double diaphragm design to allow for aggregates in the coating and be driven by an air compressor capable of supplying at least 12-14 CFM of continuous air at 60-80 psi.

### ~~Pump:~~

- $\frac{1}{2}$ " double diaphragm pump (no motor, compressor not supplied)
- 2 gallon/minute at 90psi (typical operation is at 40 psi)
- Continuous recirculation of coating to keep solids in suspension

D. Hopper shall allow for continuous operation and hold at least 10 gallons of coating and be designed to allow coating to be drawn from the bottom.

### ~~Hopper:~~

- Integral hopper with pump, hose assemblies and an operating capacity of 10 gallons

## ~~2.4 Primer Specifications~~

Primer shall be supplied by the same manufacturer of the coating and be applied according to manufacturer's recommended procedures. Primer shall be applied prior to application of coating to enhance adhesion on older asphalt. Primer may be used but is not required on new asphalt. Solvent based primers will not be allowed. Primer shall be a single component non-reactive water based acrylic applied by sprayer and back rolled or brushed. Primer shall be dry to the touch prior to the application of the first layer of coating.

## **PART 3 – EXECUTION**

### **3.1 General**

The proper application of the bike lane coating is critically important for the work to be successful.

- A. To ensure the most successful installation, it is recommended that an Accredited Applicator who has been accredited in accordance with article 1.3 of this specification, apply the bike lane coating.
- B. A contractor who has not been properly accredited to perform this work, is required to receive the proper training before starting, and must have a manufacturer's representative on-site at time of application.

***Do not begin installation without confirmation of Applicator qualification (or training).***

### **3.2 Pre-Conditions**

#### **3.2.1 Pavement**

HMA pavement must be stable, well compacted and generally in excellent condition for the application of bike lane coating to be successful. The Engineer shall make the final determination as to the suitability of the existing HMA pavement.

#### **3.2.2 HMA Pavement Marking Removal**

Pavement markings may be removed by sandblasting, water-blasting, grinding, or other approved mechanical methods. The removal methods should, to the fullest extent possible, cause no significant damage to the pavement surface. The Engineer shall determine if the removal of the markings is satisfactory for the application of bike lane coating. Work shall not proceed until this approval is granted.

### **3.3 Application of Bike Lane Coating**

#### **3.3.1 Surface Preparation**

- A. The HMA pavement surface shall be dry and free from all foreign matter, including but not limited to dirt, dust, oil, de-icing materials, and chemical residue.
- B. Primer is required on pre-existing HMA pavement. An application rate of 3000 sq. ft per unit shall be used.
- C. Primer is required on latex modified asphalt pavements course.

- D. Primer is not required for new HMA pavement.
- E. For application of bike lane coating to surfaces other than HMA pavement, it is recommended to test the application of the coating to a section of the surface before proceeding with the work.

### **3.3.2 Application of Coating**

- A. Bike lane coating shall only be applied when the air temperature is at least 50° F and rising, and will not drop below 50° F within eight (8) hours of application of the coating material. There should be no precipitation expected within two (2) hours after the final layer of bike lane coating is dry to touch.
- B. Each application of bike lane coating material shall be the same color and shall be allowed to dry completely before applying the next layer.
- C. The coating application shall be spray applied using a sprayer and broomed to work the material into the surface. Subsequent applications shall be sprayed and rolled, using a 1" to 1½" nap roller or sprayed and broomed.

### **3.4 Coating Coverage**

- A. One 5 gallon (20 liter) pail of bike lane coating will cover approximately 700 square feet of pavement. Actual coverage may be affected by the texture of the surface. There will be less coverage with the first layer and higher coverage with subsequent layers.
- B. The required number of layers of bike lane coating is dependent upon the application. Three layers will generally be sufficient, depending upon surface texture and traffic. For areas that will be subjected to vehicle traffic, an additional layer is recommended.

### **3.5 Coating Thickness**

Approximate coating thickness is as outlined in Table 2 below:

No. of Layers	MINIMUM THICKNESS			
	WET		DRY	
	mm	mil	mm	mil
3	0.65	25.7	0.36	14.1
4	0.87	34.3	0.48	18.9

### **3.6 Opening to Traffic**

The bike lane coating must be 100% dry before traffic is permitted. Table 3 is a guide:

<b>Table 3</b> <b>Coating Dry Times (Typical)</b>		
<b>Air Temperature</b>	<b>Relative Humidity</b>	<b>Time to Dry (approx.)</b>
60°F (15°C)	80%	8 Hours
81°F (27°C)	57%	4 Hours
120°F (49°C)	5%	2 Hours

Substrate temperature, wind and humidity can also affect dry times. Generally, warm and dry conditions decrease the time required for the coatings to dry.

### **3.7 Edge Striping**

Once bike lane coating has dried, a hot, spray applied white strip may be installed adjacent the edge of bike path in accordance with the drawings and specifications.

## **PART 4 – MEASUREMENT AND PAYEMENT**

### **4.1 Method of Measurement**

The bike lane will be measured for payment in place in square yards (square meters). The bike lane area is the actual area of pavement that has received the coating. No deduction will be made for the area(s) occupied by manholes, inlets, drainage structures, bollards or by any appurtenances within the area.

### **4.2 Basis of Payment**

This work will be paid for at the contract unit price per square yard (square meter) of BIKE LANE MICRO OVERLAY, 3 PASSES. Payment will be full compensation for all material, equipment and labor to complete the work as per conditions in the contract and no additional compensation will be allowed.

## **SURFACE REMOVAL, VARIABLE DEPTH**

**Description:** This work shall consist of removing a portion of the existing hot-mix asphalt concrete surface course in accordance with the applicable portions of Section 440 and 1101 of the Standard Specifications, this special provision, details in the plans and as directed by the Engineer. The cold milled salvaged aggregate resulting from this operation shall become the property of the Contractor.

When the teeth become worn so that they do not produce a uniform surface texture, they shall all be changed at the same time (as a unit). Occasionally, individual teeth may be changed if they lock up or break, but this method shall not be used to avoid changing the set of teeth as a unit.

The moldboard is critical in obtaining the desired surface texture. It shall be straight, true, and free of excessive nicks or wear, and it shall be replaced as necessary to uniformly produce the required surface texture. Gouging of the pavement by more than 1/4 inch (6 mm) shall be sufficient cause to require replacement of all teeth. Occasional gouges, due to deteriorated pavement condition, or separation of lifts will not be cause to replace all teeth. The Engineer will be the sole judge of the cause of the pavement gouging and the corrective work required. Corrective work due to negligence or poor workmanship will be at the Contractor's expense.

### Construction Requirements

**General:** Weather conditions, when milling work is performed, must be such that short term or temporary pavement markings can be placed the day the surface is milled in accordance with Section 703 "Work Zone Pavement Markings."

An automatic grade control device shall be used when milling mainline pavement and shall be capable of controlling the elevation of the drum relative to either a preset grade control stringline or a grade reference device traveling on the adjacent pavement surface. The automatic grade control device may be utilized on only one side of the machine with an automatic slope control device controlling the opposite side. The traveling grade reference device shall not be less than 30 feet (9 m) in length for rural areas. For urban areas, a device not less than 20 feet (6 m) in length will be required. When milling cross roads, turn lanes, intersections, crossovers, or other miscellaneous areas, the Engineer may permit the use of a matching shoe.

The Contractor shall use the new constructed gutter for longitudinal grade control and set the cross slope as indicated on the typical section drawings.

Surface tests will be performed according to Article 407.09(a) of the Standard Specifications. The profile will be taken 3 ft. (0.9 m) from and parallel to each edge of pavement and 3 ft. (0.9 m) from and parallel to the centerline on each side. If a shadow area is found at the 3 ft. (0.9 m) points, the pavement smoothness tester will be moved sufficient distance either side to measure the Contractor's milling efforts. If any (milled) surface variations found to be over 1/4" in 10' (6 mm in 3 m), then the roadway shall be re-profiled at no additional cost. In addition, the Contractor shall be responsible for refilling, with approved hot-mix asphalt mixtures, any area that lowered the pavement profile as a result of his faulty milling operations if directed by the Engineer. The Contractor shall be

responsible for providing the pavement smoothness tester described elsewhere to retest the pavement profile obtained.

If the milling depth is intended to expose the original concrete pavement, then additional hand or machine work may be necessary to remove any remaining veneer of bituminous pavement which may be left in place behind the milling machine. Such work will be at the direction of the Engineer and at no extra cost to the State.

The Contractor shall provide a 10' (3 m) straightedge equipped with a carpenter's level or a 7' (2.1 m) electronic straightedge to check the cross slope of the roadway at regular intervals as directed by the Engineer.

Surface Texture: Each tooth on the cutting drum shall produce a series of discontinuous longitudinal striations. There shall be 16 to 20 striations (tooth marks) for each tooth for each 6' (1.8 m) in the longitudinal direction, and each striation shall be 1.7 inches  $\pm$  0.2 inch (43  $\pm$  5 mm) in length after the area is planed by the moldboard. Thus, the planed length between each pair of striations shall be 2.3 inches  $\pm$  0.2 inch (58  $\pm$  5 mm). There shall be 80 to 96 rows of discontinuous longitudinal striations for each 5' (1.5 m) in the transverse dimension. The areas between the striations in both the longitudinal and transverse directions shall be flat topped and coplaner. The moldboard shall be used to cut this plane; and any time the operation fails to produce this flat plane interspersed with a uniform pattern of discontinuous longitudinal striations, the operation shall be stopped and the cause determined and corrected before recommencing. Other similar patterns of uniform discontinuous longitudinal striations interspersed on a flat plane may be approved by the Engineer.

The startup milling speed shall be limited to a maximum of 50' (15 m) per minute. The Contractor shall limit his operations to this speed to demonstrate his ability to obtain the striations and rideability as described above. If the Contractor is able to demonstrate that he can consistently obtain the desired striations and rideability at a greater speed he will be permitted to run at the increased speed.

Cleanup: After cold milling a traffic lane and before opening the lane to traffic, the pavement shall be swept by a self-propelled street sweeper with power vacuum capability to prevent compaction of the cuttings onto the pavement. All loose material shall be removed from the roadway. Before the prime coat is placed, the pavement shall be cleaned of all foreign material to the satisfaction of the Engineer.

This cleanup work shall be considered included in the contract unit price per Square Yard (Square Meter) for SURFACE REMOVAL, VARIABLE DEPTH and no additional compensation will be allowed.

Method of Measurement:

Contract Quantities. The requirements for the use of Contract Quantities shall be Article 202.07(a) of the Standard Specifications.

Basis of Payment: The cold milling and planing will be paid for at the contract unit price per Square Yard (Square Meter) for SURFACE REMOVAL, VARIABLE DEPTH. Payment as specified will include variations in depth of cuts due to rutting, superelevations, and pavement crown and no additional compensation will be allowed.

## **WATER MAIN CONSTRUCTION**

Specifications for the watermain work shall consist of the documents contained in Divisions 1, 2, and 15 of the Contract Documents, Supplemental Technical Specification, Standard Specifications for Water and Sewer Main Construction in Illinois, Sixth Edition, dated July 2009, Standard Specifications for Road and Bridge Construction, adopted January 1, 2012 and the Supplementary Specifications and Recurring Special Provisions, adopted January 1, 2014. The more stringent requirements between the specifications listed shall take precedence whenever any contradiction exists.

### **WATERMAIN, 8" DIAMETER, DUCTILE IRON, OPEN CUT**

The contract unit price shall include furnishing all labor, equipment and materials, which are necessary for installation of the watermain. Joint Restraints, Tracer wire, location tape, polywrap, excavation, bedding, haunching, initial backfill, and disposal of any removed materials (soil, rock, watermain, water services, etc.) shall be included in the cost of the contract unit price of the watermain. The Contractor shall be solely responsible for the means, methods, techniques, sequences and procedures necessary for the construction of the pipeline(s). The minimum width and depth of the pipe trench shall be in accordance with the requirements of Specification Section 02210.

### **WATERMAIN, 6" DIAMETER, DUCTILE IRON, OPEN CUT**

The contract unit price shall include furnishing all labor, equipment and materials, which are necessary for installation of the watermain. Joint Restraints, Tracer wire, location tape, polywrap, excavation, bedding, haunching, initial backfill, and disposal of any removed materials (soil, rock, watermain, water services, etc.) shall be included in the cost of the contract unit price of the watermain. The Contractor shall be solely responsible for the means, methods, techniques, sequences and procedures necessary for the construction of the pipeline(s). The minimum width and depth of the pipe trench shall be in accordance with the requirements of Specification Section 02210.

### **16 INCH PVC SDR 21 CASING FOR WATER/SEWER CROSSING**

The contract unit price shall include furnishing all labor, equipment and materials, including the casing pipe, installation of the watermain in the casing pipe, sealing of the casing, casing spacers and other operations involved with the installation of the pipe in the casing.

### **16 INCH STEEL CASING PIPE FOR WATERMAIN (0.250 INCH WALL THICKNESS)**

The contract unit price shall include furnishing all labor, equipment and materials, including the steel casing pipe, which are necessary for installing the casing pipe, excavation of the entrance pit and receiving pit, installation of the watermain in the casing pipe, casing spacers, sealing of the casing, bracing the pit, and other operations involved with the installation of the steel casing pipe. In addition the Contract Unit Price shall include all excavation (soil or rock) de-watering, jacking, ramming, drilling or boring (rock or soil), backfilling, installation of end caps, sheeting, bracing, shoring, temporary construction, safety measures, etc. all as necessary for a complete and satisfactory installation. Installation of the water main in the casing will be included under this Contract Unit Price. The Contract Unit Price will also include all measures required to protect roadways, railroad tracks and embankments from settlement or damage of any type.

### **GATE VALVE AND BOX, 8" DIAMETER**

The contract unit price shall include furnishing all labor, equipment and materials, which are necessary for installation of the gate valve and box.

#### **GATE VALVE AND BOX, 6" DIAMETER**

The contract unit price shall include furnishing all labor, equipment and materials, which are necessary for installation of the gate valve and box.

#### **TAPPING SLEEVE AND TAPPING GATE VALVE, 8" DIAMETER**

The contract unit price shall include furnishing all labor, equipment and materials, which are necessary for the installation of the tapping sleeve, thrust block (if specified) and tapping valve and box. Illinois American Water Company shall perform the tapping of the existing watermain.

#### **TAPPING SLEEVE AND TAPPING GATE VALVE, 6" DIAMETER**

The contract unit price shall include furnishing all labor, equipment and materials, which are necessary for the installation of the tapping sleeve, thrust block (if specified) and tapping valve and box. Illinois American Water Company shall perform the tapping of the existing watermain.

#### **DUCTILE IRON FITTINGS**

The contract unit price shall include furnishing all labor, equipment, thrust block (if specified) and any other materials, which are necessary for the installation of the ductile iron fittings. Measurement of fittings shall be based on the fittings actually installed and the weights of the respective compact fitting as listed in AWWA Standard C153.

#### **FIRE HYDRANT (3-WAY)**

The contract unit price shall include furnishing all labor, equipment and materials, which are necessary for the installation of the fire hydrant.

#### **FIRE HYDRANT REMOVAL**

The contract unit price shall include furnishing all labor, equipment and materials (including fittings, backfill, select granular backfill, native backfill, and top soil) which are necessary for the removal of the existing fire hydrant and gate valve and box.

#### **SELECT GRANULAR BACKFILL**

The contract unit price shall include furnishing all labor, equipment and materials, which are necessary for installation of selected granular backfill. No payment will be made for aggregate needed outside the maximum normal trench width as described in Specification Section 02210, Part 3.05, Paragraph D. If for any reason the trench width exceeds the maximum trench width defined in Paragraph D above, the Contractor shall provide the additional aggregated for bedding and backfilling at no cost to the Owner as described in Specification Section 02210, Part 3.05, Paragraph E. This pay item also includes the removal, hauling and proper disposal of all excavated material.

#### **PAVEMENT REMOVAL FOR WATERMAIN**

The contract unit price shall include furnishing all labor, equipment and materials, which are necessary for the removal of the existing pavement (bituminous and concrete). Saw cutting of the limits of the pavement removal to provide a straight smooth removal edge shall be included in the cost of the contract unit price of the pavement removal for watermain.

**CONCRETE PAVEMENT PLACEMENT**

The contract unit price shall include furnishing all labor, equipment and materials, which are necessary for the placement of the concrete pavement. The concrete pavement shall match the existing pavement depth but shall not be less than 10 inches.

**WATERMAIN TESTING AND DISINFECTION**

The contract unit price shall include furnishing all labor, equipment and materials, which are necessary for the testing and disinfection of the watermain.

**CITY OF PEORIA**  
**SUBCONTRACTOR PAYMENT FORM**

**PRIME CONTRACTOR**

Name: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Phone: \_\_\_\_\_  
 Contact Person: \_\_\_\_\_

**PROJECT**

Name: \_\_\_\_\_  
 Pay Estimate No: \_\_\_\_\_  
 Percent Complete: \_\_\_\_\_ %  
 Work Period: \_\_\_\_\_ to \_\_\_\_\_

**INSTRUCTIONS:** Complete the table below. If additional space is needed attach extra pages as needed and included all information listed in the table below; along with project name and prime contractor.

<b>Subcontractor (Name)</b>	<b>Payment Amount</b>	<b>Payment Type (F-full/ P-partial)</b>
	\$	
	\$	
	\$	
	\$	
	\$	
	\$	
<b>Total Payment Amount for Work Completed</b>	<b>\$</b>	

This form is to verify the work completed and the amount paid to a subcontractor utilized on the above listed project. Under penalty of law for perjury or falsification, the undersigned certifies that the payment reported herein was made to the subcontractors listed.

\_\_\_\_\_  
 Signature of Prime Contractor

\_\_\_\_\_  
 Date

**CITY OF PEORIA**  
**MONTHLY WORKFORCE ANALYSIS**

Check appropriate status

Contractor  
 Subcontractor

Month Ending \_\_\_\_\_

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Contact Person: \_\_\_\_\_ Phone: \_\_\_\_\_

Project: \_\_\_\_\_

Date Work Started: \_\_\_\_\_ Percent Complete: \_\_\_\_\_ %

Job Categories	Number of Employees				Hours of Employment									
	Total # of Employees		Total Minorities		African American		Asian/Pacific Islander		American Indian/Alaskan Native		Hispanic		White	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Foremen														
Electricians														
Glaziers														
Iron Workers														
Laborers														
Teamsters														
Millwrights														
Pipe Fitters														
Plumbers														
Plasterers														
Painters														
Roofers														
Operating Engs														
Tile Layers														
Sheet Metal Wkrs														
<b>TOTALS</b>														

Instructions: The total number of hours worked on the project (Hours of Employment), and the total number of individuals working on the project during the reporting period (Number of Employees) should be submitted on this form to the Project Resident Engineer every month. Each contractor and subcontractor should submit with this form certified payroll records for the period covered. The prime contractor is responsible for securing and submitting with his/her report, reports from all subcontractors.

**CITY OF PEORIA**  
**NOTIFICATION OF CHANGE IN PARTICIPATION**

## Type of Change

- Subcontractor. Complete Part 1  
 Self-Performance. Complete Part 2

Date: \_\_\_\_\_

**PRIME CONTRACTOR**Name: \_\_\_\_\_  
 Address: \_\_\_\_\_

Phone: \_\_\_\_\_

**PROJECT**

Name: \_\_\_\_\_

**PART 1**

If changing from previously identified subcontractor to another, complete both From and To.

From Name \_\_\_\_\_  
 Address \_\_\_\_\_  
 \_\_\_\_\_To Name \_\_\_\_\_  
 Address \_\_\_\_\_  
 \_\_\_\_\_

Phone \_\_\_\_\_

Phone \_\_\_\_\_

Status  MBE  WBE  Non-M/WBEStatus  MBE  WBE  Non-M/WBE

Contract Amount \_\_\_\_\_

Will scope of work change?  Yes  NoDescribe change \_\_\_\_\_  
 \_\_\_\_\_Reason for Contractor Change \_\_\_\_\_  
 \_\_\_\_\_**PART 2**

Complete if deviating from intent to self-perform.

Prime Contractor will have to hire another contractor to perform work.  Yes  NoChange was due to  Emergency  Non-EmergencyExplain Situation \_\_\_\_\_  
 \_\_\_\_\_Describe good faith efforts to utilize M/WBE \_\_\_\_\_  
 \_\_\_\_\_Name of added Contractor \_\_\_\_\_  
 Address \_\_\_\_\_

Phone \_\_\_\_\_

Status  MBE  WBE  Non-M/WBE

Contract Amount \_\_\_\_\_

Scope of Work \_\_\_\_\_

Signed: \_\_\_\_\_  
 Contractor

Title

## TABLE OF CONTENTS

### FOREST HILL AVENUE WATERMAIN REPLACEMENT

FROM SHERIDAN ROAD TO KNOXVILLE AVENUE

Division 1 - General Requirements	01000-1 to 01000-3	Section 01010 - Drawing Index	01010-1	Section 01075 - Basis of Payment	01075-1 to 01075-3	Section 01300 - Submittals	01300-1 to 01300-11	Section 01600 - Products	01600-1 to 01600-4	Section 01700 - Project Closeout	01700-1 to 01700-3	Section 02210 - Trenching, Backfilling, and Compacting	02210-1 to 02210-12	Section 02220 - Casing Installation	02220-1 to 02220-4	Section 02558 - Identification Location Guide	02558-1 to 02558-3	Section 15000 - Piping - General Provisions	15000-1 to 15000-7	Section 15020 - Disinfecting Pipelines	15020-1 to 15020-8	Section 15025 - Cleaning Pipelines	15025-1 to 15025-5	Section 15030 - Pressure and Leakage Tests	15030-1 to 15030-3	Section 15106 - Ductile Iron Pipe and Fittings	15106-1 to 15106-8	Section 15131 - Piping Specifications	15131-1 to 15131-4	Section 15151 - Gate Valves	15151-1 to 15151-2	Section 15171 - Tapping Sleeves, Saddles and Valves	15171-1 to 15171-4	Section 15181 - Fire Hydrants	15181-1 to 15181-3	Section 15185 - Abandonment of Mains and Fire Hydrants	15185-1 to 15185-2	Section 15191 - Air Release & Blowoff Outlets	15191-1 to 15191-4
<b>Division 2 - Site Work</b>																																							
Section 02020 - Dewatering	02020-1	Section 02025 - Existing Utilities and Structures	02025-1 to 02025-4	Section 02105 - Clearing and Grubbing	02105-1 to 02105-2	Section 02210 - Trenching, Backfilling, and Compacting	02210-1 to 02210-12	Section 02220 - Casing Installation	02220-1 to 02220-4	Section 02558 - Identification Location Guide	02558-1 to 02558-3	<b>Division 15 - Mechanical</b>																											
Section 15000 - Piping - General Provisions	15000-1 to 15000-7	Section 15020 - Disinfecting Pipelines	15020-1 to 15020-8	Section 15025 - Cleaning Pipelines	15025-1 to 15025-5	Section 15030 - Pressure and Leakage Tests	15030-1 to 15030-3	Section 15106 - Ductile Iron Pipe and Fittings	15106-1 to 15106-8	Section 15131 - Piping Specifications	15131-1 to 15131-4	Section 15151 - Gate Valves	15151-1 to 15151-2	Section 15171 - Tapping Sleeves, Saddles and Valves	15171-1 to 15171-4	Section 15181 - Fire Hydrants	15181-1 to 15181-3	Section 15185 - Abandonment of Mains and Fire Hydrants	15185-1 to 15185-2	Section 15191 - Air Release & Blowoff Outlets	15191-1 to 15191-4																		

## TECHNICAL SPECIFICATIONS

TITLE	PAGE
-------	------

**SECTION 01000****SUMMARY OF WORK****PART 1: GENERAL****1.01 WORK UNDER THIS CONTRACT**

- A. Furnish all labor, materials ~~(except as herein noted)~~, equipment and means to construct the pipeline(s) and other Work as described in the Contract Documents and shown on the Drawings. The Work includes, but is not limited to, the following:
  - 1. Sheeting, bracing and support of trench and adjoining ground where necessary.
  - 2. Furnish and install thrust blocking and pipe restraints as required.
  - 3. Handling drainage and water removal.
  - 4. Guarding the site and materials on site.
  - 5. Furnishing materials not provided by the owner to the site (see section 1.03)
  - 6. Unloading, loading, hauling, distributing, laying and testing the pipe and appurtenances.
  - 7. Excavation and backfilling of trenches and pits.
  - 8. Removal of surplus excavated material and debris.
  - 9. Installation of required pipe, fittings and appurtenances
  - 10. Performance of pressure and leakage tests.
  - 11. Disinfecting of pipeline (and dechlorination of discharge).
  - 12. Site cleaning.
  - 13. Ground restoration and planting.
  - 14. Submit schedules, shop drawings and as-built records.
  - 15. Erosion and sediment control.
  - 16. Flush & clean
  - 17. Call for utility locations
  - 18. Collect bacteriological samples
- B. Please refer to the Standard General Conditions of the Construction Contract for definitions of the Owner, Contractor, Engineer and other terminology that may be used in this specification.
- C. The above general outline of principal features does not in any way limit the responsibility of the Contractor to perform all Work and furnish the required materials, equipment, labor and means as shown or required by the Contract Documents.
- D. Materials, equipment, labor, etc., obviously a part of the Work and necessary for the proper operation and installation of same, although not specifically indicated in the Contract Documents, shall be provided as if called for in detail without additional cost to the Owner.

## 1.02 WORK BY ILLINOIS AMERICAN WATER COMPANY

- A. Owner may perform certain items of Work related to this project which may include the following
  - 1. Mark locations of existing services, valves, mains, etc.
  - 2. Other work, if any, as described below.
    - A. Operate all valves necessary to shut-off, flush and reactivate its existing pipelines
    - B. Install Pipe taps
    - C. Install services during construction.
    - D. Provide meter sets
    - E. Install meters
    - F. Perform flushing (use of hydrants)
- B. See Special Conditions section for appropriate list of tasks provided by owner.

## 1.03 MATERIALS FURNISHED BY OWNER

- A. ~~The following materials may be furnished by the Owner and installed by the Contractor. All materials required to complete the Work, but not listed herein, shall be furnished and installed by the Contractor.~~
  - 1. ~~Owner shall furnish all pipe, valves, bends and appurtenances.~~
  - 2. ~~Owner shall furnish all material for service line reconnections.~~

## 1.04 LOCATIONS

- A. Work is to be performed on Owner's property and/or public rights-of-ways or easements shown on the drawings and described in the Specifications. Work shall be performed by the Contractor within these limits.
- B. It is the obligation and responsibility of the Contractor to determine the exact limitations of the rights-of-way and/or easements and any conditions limiting or affecting the use of the right of way by the Owner and/or the Contractor. All agreements respecting rights-of-way and the easements that are available to the Owner can be made available upon request. The Contractor agrees to indemnify and hold harmless the Owner against any claims made by any property owner, including any claim that the Contractor has failed to keep Contractor work, equipment, materials, or workmen within the limits authorized by the right-of-way and/or easement or any claim that the Contractor has failed to comply with any condition or requirement, or agreement respecting the right-of-way and/or easement.
- C. Some of the locations shown or described in the Contract Documents, such as tie-ins, are approximate. It is the responsibility of the contractor for pinpointing the exact locations.

**PART 2: PRODUCTS****2.01 GENERAL**

Specifications for the materials and equipment to be provided by the Contractor are detailed in the respective Specification Sections.

**PART 3: EXECUTION****3.01 FIELD SURVEY WORK**

Lay out the Work in accordance with Contract Documents and Construction Plans. Owner will provide reference points as noted on the plans.

**3.02 COORDINATION**

- A. Coordinate work, to phase the construction operations, and provide, install and maintain any temporary connections necessary to prevent interference to operation of Illinois American Water Company's facilities. Any construction work requiring the shutdown of facilities must be scheduled and performed only at such times as shall be authorized by the Illinois American Water Company. Such Work must be completed during the specific periods authorized by the Owner.
- B. It may be necessary that Work will be performed during several shutdown periods and/or during periods of premium time payment to accomplish the desired construction. All costs to perform the Contractor's Work, including premium time payments, shall be borne by the Contractor and are included in the Contract Price.

**3.03 REGULATORY REQUIREMENTS**

Make necessary arrangements for obtaining and identifying all costs in connection with mandated third party inspections when the Work is to be done in the third party's transportation or utility right of way and an inspector must be assigned to the Project during the construction of the Work.

**END OF SECTION**

**SECTION 01010****DRAWING INDEX****PART 1: GENERAL****1.01 DRAWINGS**

- A. The following drawings, dated June 2014, and prepared by Crawford, Murphy, & Tilly, Inc., accompany this Specification and are a part thereof. Drawings are the property of the Owner and shall not be used for any purpose other than that intended by the Specifications.

<i>Sheet No.</i>	<i>Title, Description</i>
C-1	<i>General Notes, Legend, &amp; Location Map</i>
C-2	<i>Watermain – Sta. 0+00 to 5+00</i>
C-3	<i>Watermain – Sta. 5+00 to 10+00</i>
C-4	<i>Watermain – Sta. 10+00 to 15+00</i>
C-5	<i>Watermain – Sta. 15+00 to 20+00</i>
C-6	<i>Watermain – Sta. 20+00 to 25+00</i>
C-7	<i>Watermain – Sta. 25+00 to 25+57</i>
C-8	<i>Construction Details - 01</i>
C-9	<i>Construction Details - 02</i>

**PART 2: PRODUCTS**

Not Used

**PART 3: EXECUTION**

Not Used

**END OF SECTION**

**SECTION 01075****BASIS OF PAYMENT****PART 1: GENERAL****1.01 SCOPE**

Work to be performed under this Contract shall be paid for in accordance with the "Unit Prices" of the bid. The cost of labor, equipment, materials or work called for in the Specification, shown on the Drawings, or necessary for a complete and satisfactory installation of the watermain, but which are not specifically mentioned in this Section shall be included in the appropriate pay item by the Contractor at no additional expenses to the Owner.

**1.02 PAYMENT ITEMS**

The prices shown in the "Unit Prices" of the Bid include all costs to construct the water pipeline (s) under this Contract. Final payment will be made on the in place measurement of length(s) of pipeline(s) installed.

- **WATERMAIN, 8" DIAMETER, DUCTILE IRON, OPEN CUT:**

The contract unit price shall include furnishing all labor, equipment and materials, which are necessary for installation of the watermain. Joint Restraints, Tracer wire, location tape, polywrap, excavation, bedding, haunching, initial backfill, and disposal of any removed materials (soil, rock, watermain, water services, etc.) shall be included in the cost of the contract unit price of the watermain. The Contractor shall be solely responsible for the means, methods, techniques, sequences and procedures necessary for the construction of the pipeline(s). The minimum width and depth of the pipe trench shall be in accordance with the requirements of Specification Section 02210.

- **WATERMAIN, 6" DIAMETER, DUCTILE IRON, OPEN CUT**

The contract unit price shall include furnishing all labor, equipment and materials, which are necessary for installation of the watermain. Joint Restraints, Tracer wire, location tape, polywrap, excavation, bedding, haunching, initial backfill, and disposal of any removed materials (soil, rock, watermain, water services, etc.) shall be included in the cost of the contract unit price of the watermain. The Contractor shall be solely responsible for the means, methods, techniques, sequences and procedures necessary for the construction of the pipeline(s). The minimum width and depth of the pipe trench shall be in accordance with the requirements of Specification Section 02210.

- **16 INCH PVC SDR 21 CASING FOR WATER/SEWER CROSSING**

The contract unit price shall include furnishing all labor, equipment and materials, including the casing pipe, installation of the watermain in the casing pipe, sealing

of the casing, casing spacers and other operations involved with the installation of the pipe in the casing.

- **16 INCH STEEL CASING PIPE FOR WATERMAIN (0.250 INCH WALL THICKNESS)**

The contract unit price shall include furnishing all labor, equipment and materials, including the steel casing pipe, which are necessary for installing the casing pipe, excavation of the entrance pit and receiving pit, installation of the watermain in the casing pipe, casing spacers, sealing of the casing, bracing the pit, and other operations involved with the installation of the steel casing pipe. In addition the Contract Unit Price shall include all excavation (soil or rock) de-watering, jacking, ramming, drilling or boring (rock or soil), backfilling, installation of end caps, sheeting, bracing, shoring, temporary construction, safety measures, etc. all as necessary for a complete and satisfactory installation. Installation of the water main in the casing will be included under this Contract Unit Price. The Contract Unit Price will also include all measures required to protect roadways, railroad tracks and embankments from settlement or damage of any type.

- **GATE VALVE AND BOX, 8" DIAMETER**

The contract unit price shall include furnishing all labor, equipment and materials, which are necessary for installation of the gate valve and box.

- **GATE VALVE AND BOX, 6" DIAMETER**

The contract unit price shall include furnishing all labor, equipment and materials, which are necessary for installation of the gate valve and box.

- **TAPPING SLEEVE AND TAPPING VALVE, 8" DIAMETER**

The contract unit price shall include furnishing all labor, equipment and materials, which are necessary for the installation of the tapping sleeve, thrust block (if specified) and tapping valve and box. Illinois American Water Company shall perform the tapping of the existing watermain.

- **TAPPING SLEEVE AND TAPPING VALVE, 6" DIAMETER**

The contract unit price shall include furnishing all labor, equipment and materials, which are necessary for the installation of the tapping sleeve, thrust block (if specified) and tapping valve and box. Illinois American Water Company shall perform the tapping of the existing watermain.

- **DUCTILE IRON FITTINGS**

The contract unit price shall include furnishing all labor, equipment, thrust block (if specified) and any other materials, which are necessary for the installation of the ductile iron fittings. Measurement of fittings shall be based on the fittings actually installed and the weights of the respective compact fitting as listed in AWWA Standard C153.

- **FIRE HYDRANT (3-WAY)**

The contract unit price shall include furnishing all labor, equipment and materials, which are necessary for the installation of the fire hydrant.

- **FIRE HYDRANT REMOVAL**

The contract unit price shall include furnishing all labor, equipment and materials (including fittings, backfill, select granular backfill, native backfill, and top soil) which are necessary for the removal of the existing fire hydrant and gate valve and box.

- **SELECT GRANULAR BACKFILL**

The contract unit price shall include furnishing all labor, equipment and materials, which are necessary for installation of selected granular backfill. No payment will be made for aggregate needed outside the maximum normal trench width as described in Specification Section 02210, Part 3.05, Paragraph D. If for any reason the trench width exceeds the maximum trench width defined in Paragraph D above, the Contractor shall provide the additional aggregated for bedding and backfilling at no cost to the Owner as described in Specification Section 02210, Part 3.05, Paragraph E. This pay item also includes the removal, hauling and proper disposal of all excavated material.

- **PAVEMENT REMOVAL**

The contract unit price shall include furnishing all labor, equipment and materials, which are necessary for the removal of the existing pavement (bituminous and concrete). Saw cutting of the limits of the pavement removal to provide a straight smooth removal edge shall be included in the cost of the contract unit price of the pavement removal

- **CONCRETE PAVEMENT PLACEMENT**

The contract unit price shall include furnishing all labor, equipment and materials, which are necessary for the placement of the concrete pavement. The concrete pavement shall match the existing pavement depth but shall not be less than 10 inches.

- **WATERMAIN TESTING AND DISINFECTION**

The contract unit price shall include furnishing all labor, equipment and materials, which are necessary for the testing and disinfection of the watermain.

**PART 2: PRODUCTS** - Not Used

**PART 3: EXECUTION** - Not Used

**END OF SECTION**

**SECTION 01300****SUBMITTALS****PART 1: GENERAL****1.01 CONSTRUCTION SCHEDULE**

- A. Prepare and submit detailed progress schedules, schedule of values and shop drawing and sample submittal schedules to the Engineer. The schedule shall be in bar graph form and shall include, as a minimum, the following separate activities:
  1. Physical construction (identifying mobilization, demobilization, setup time, lags, etc.).
  2. Issuance by Contractor of purchase orders for material and equipment and submittal of shop drawings and samples to the Engineer.
  3. Review by Engineer for each submittal of samples and shop drawings. Unless otherwise approved by the Engineer, allow ten (10) working days for Engineer to review each submittal.
  4. Fabrication time for materials and equipment.
  5. Delivery of materials and equipment.
  6. Installation of materials and equipment.
  7. Testing, start-up and training for individual pieces of equipment or entire systems as appropriate.
  8. Weather affected activities.
  9. Outages or interruptions of Owner's facilities required to perform work.
  10. Demolition or removal work under this Contract.
- B. Activity durations shall represent the best estimate of elapsed time considering the scope of the Work involved in the activity and the resources planned for accomplishing the activity expressed in working days.
- C. Activity descriptions shall clearly define the scope of work associated with each activity.
- D. Detail the construction work schedule to an extent that progress can be readily monitored on a weekly basis. In general, the construction work shall be detailed such that no construction activity shall have duration greater than fifteen (15) work days. As a minimum, each activity shall be coded by:
  1. Activity type (i.e., submittal, Engineer's review, material order material delivery, pilot hole drilling, well testing, development, etc.).
  2. Responsibility (i.e., Contractor, subcontractor A, subcontractor B, Owner, Engineer, etc.).
  3. Area (i.e., Pilot Wells, Production Wells, sitework, etc.).

- E. Develop the construction schedule as necessary to properly control and manage the project. The above schedule development requirements are a minimum.
- F. The preliminary progress schedule shall be submitted in a bar graph format and shall include, as a minimum, a graphic representation of all significant activities and events involved in the construction of the project. The graphic representation and statement must clearly depict and describe the sequence of activities planned by the Contractor, their interdependence and the times estimated to perform each activity.

#### **1.02 FINALIZING SCHEDULES**

- A. Prepare to present and discuss at the preconstruction meeting, the schedules submitted in accordance with this specification. Unless additional information is required to be submitted by the Contractor, the Engineer will, within 15 working days of the preconstruction conference, provide comments to the Contractor. Then resubmit the affected schedules addressing the Engineer's comments.
- B. Approval of the final schedules by the Engineer is advisory only and shall not relieve the Contractor of responsibility for accomplishing the work within the Contract Times. Omissions and errors in the approved schedule shall not excuse performance less than that required by the Contract. Approval by the Engineer in no way makes the Engineer an insurer of the success of those schedules or liable for time or cost overruns flowing from shortcomings in such schedules.

#### **1.03 REQUIREMENTS FOR CONFORMING TO SCHEDULE**

- A. Take such steps as will be necessary to improve progress, if, in the opinion of the Engineer, the Contractor falls behind the progress schedule. Engineer may require Contractor to increase the number of shifts and/or overtime operations, days of work, and/or the amount of construction planned, and to submit for approval such supplementary schedule or schedules as may be deemed necessary to demonstrate the manner in which the agreed rate of progress will be regained, all without additional cost to the Owner. An updated cash flow schedule will be required in this occurrence and will be provided with the supplementary schedules referenced above.

#### **1.04 UPDATING SCHEDULES**

- A. Submit to the Engineer monthly updates of the schedules required per this specification section. Be prepared to discuss the monthly update and the subsequent monthly job meeting if such meetings are to be held.
- B. Progress and shop drawing schedule updates shall reflect the progress to date by providing actual start dates for activities started, actual finish dates for completed activities, and identifying out of sequence work, schedule logic changes and any circumstances or events impacting the current schedule. The updates shall also contain the Contractor's best estimate of the remaining duration for activities not complete as of the date of the update. All graphic

presentations and other information required per the initial submittal of these schedules shall be provided with each update.

- C. The cash flow schedules shall be updated to reflect any changes.

#### **1.05 ADJUSTMENT OF PROGRESS SCHEDULE AND CONTRACT TIMES**

- A. If the Contractor desires to make changes in the method of operating which affect the approved progress schedule, notify the Engineer in writing stating what changes are proposed and the reason for the change. If the Engineer approves these changes, revise and submit for approval, without additional cost to the Owner, all of the affected portions of the schedule.
- B. Shop drawings and samples which are not approved on the first submittal or within the schedule time shall be immediately rescheduled, as well as any work which fails to pass specified tests or has been rejected.
- C. The Contract Times will be adjusted only for causes specified in the General Conditions. In the event the Contractor requests an adjustment of the Contract times, furnish such justification and supporting evidence as the Engineer may deem necessary for a determination as to whether the Contractor is entitled to an adjustment of Contract Times under the provisions of the General Conditions. The Engineer will, after receipt of such justification and supporting evidence, make findings of fact and will advise the Contractor in writing. If the Engineer finds that the Contractor is entitled to any adjustment of the Contract Times, the Engineer's determination as to the total number of days adjustment shall be based upon the currently approved progress schedule and on all data relevant to the adjustment. The Contractor acknowledges and agrees that actual delays in activities which, according to the progress schedule, do not affect the Contract completion date shown by the critical path in the schedule will not be the basis for an adjustment of Contract Times.
- D. From time to time it may be necessary for the progress schedule and/or Contract Times to be adjusted by the Owner to reflect the effects of job conditions, weather, technical difficulties, strikes, unavoidable delays on the part of the Owner, and other unforeseeable conditions which may indicate schedule and/or Contract Times adjustments. Under such conditions, the Engineer shall direct the Contractor to reschedule the work and/or Contract Time to reflect the changed conditions. Revise the construction schedule accordingly. No additional compensation shall be made to the Contractor for such changes except as provided in the General Conditions. Unless otherwise directed, take all possible actions to minimize any extension to the Contract Times and any additional cost to the Owner.

#### **1.06 CASH FLOW SCHEDULE**

- A. In addition to the Construction Schedule required above, submit to the Engineer, for approval, a Cash Flow Schedule. The Cash Flow Schedule shall show the amounts of money by months, which will be required to reimburse the Contractor for Work performed during each month of the Contract Time. The sum of all the

monthly cash requirements shall equal the total price of the Contract. The monthly cash requirements shall be proportioned with the aid of the Construction Schedule.

- B. The approved Cash Flow Schedule will be used by the Owner to program funds for progress payments to the Contractor. Monthly payments will be made to the Contractor in accordance with the Contract Agreement, but at no time will the aggregate amount of payments exceed the accumulated amount of payments for the same period of the Cash Flow Schedule.

#### 1.07 SHOP DRAWINGS

- A. Promptly supply to the Engineer for approval, shop drawings with details and schedules for all items as noted in the Drawings and/or Specifications and/or required by the Engineer. Submittals are required for all equipment and materials to be installed on the job.
- B. Five (5) copies of all drawings, schedules and brochures shall be submitted for approval. Black line prints, blue line prints or reproducible transparencies are required. Blueprints (white lines on a blue background) are not acceptable. Each submittal shall have the job name on it.
- C. Submittals smaller than 8-1/2 by 11 inches shall be secured to paper 8-1/2 by 11 inches.

#### 1.08 SAMPLES

When required by the Engineer or where noted in other Sections of these Specifications, samples of materials shall be submitted for approval.

#### 1.09 PRE-CONSTRUCTION VIDEO/ELECTRONIC PHOTOS

- A. Prior to mobilization at the site, furnish to the Engineer on DVD a video recording of all planned construction areas, material storage areas, areas adjacent to these areas, including but not limited to, streets, driveways, sidewalks, curbs, ditches, fencing, railing, visible utilities, retaining structures and adjacent building structures. The purpose of the video is to document existing conditions and to provide a fair measure of required restoration. Care should be taken to record all existing conditions which exhibit deterioration, imperfections, structural failures or situations that would be considered substandard. Notify the Engineer when the video is to be taken to provide the Engineer an option to be on site during the documenting of the project area.
- B. The video shall be high quality, color and in an approved electronic format. Temporary lighting shall be provided as necessary to properly video areas where natural lighting is insufficient (indoors, shadows, etc.). The video shall include an audio soundtrack to provide the following information:
  1. Detailed description of location being viewed referenced to Contract Drawings (i.e., well location, building designation, pipeline route etc.)

2. Direction (N, S, E, W, looking up, looking down, etc.) of camera view
3. Date, time, temperature, environmental conditions during recording.

Where required by Engineer, electronic photographs of specific locations shall be provided to supplement the electronic video.

- C. Any areas not readily visible by video/photo methods shall be described in detail. Unless otherwise approved by Engineer, video shall not be performed during inclement weather or when the ground is covered partially or totally with snow, ice, leaves, etc.
- D. As many recordings or photos as are necessary to satisfy the requirements of this section shall be prepared. The original documents shall be submitted to the Engineer accompanied by a detailed log of the contents of each DVD. The log should include location descriptions with corresponding file name to facilitate the quick location of information contained on the DVDs. The DVDs will be maintained by the Engineer during construction and may be viewed at any time by Contractor upon request. Upon final acceptance, the DVDs will become the permanent property of the Owner.

#### **1.10 PROGRESS PAYMENTS**

- A. ~~The detailed arrangement for submittal of progress payments shall be discussed at the preconstruction meeting. In general, progress payments shall be submitted monthly in a format acceptable to the Engineer. The progress payment request shall be based on the unit prices and should provide the percentage of completion, total dollar value completed, dollar value completed prior to the current payment, and the amount requested for this progress payment for each line item contained in the schedule of values. Progress payment requests for material and/or equipment suitably stored but not yet incorporated into the work shall be accompanied by a copy of the appropriate manufacturers invoice, shipping order, bill of lading, etc. and the progress payment amount shall be the direct cost to the Contractor, or subcontractor, for such material and/or equipment. Payment will not be made to the Contractor if, upon inspection by the Engineer, it is determined that the material and/or equipment does not conform to the requirements of the Contract Documents including proper storage, receipt of approved shop drawings, receipt of any special guarantees, Bonds, insurance coverage, any evidence of damage or imperfections, etc.~~

#### **1.11 CONTRACTOR'S DAILY REPORTS**

- A. If requested by the Engineer or the Resident Project Representative, prepare and submit daily reports containing the following information:
  1. The number of craftsmen and hours worked of each subcontractor,
  2. The number of hours worked by each trade,
  3. The number of hours worked of each type of equipment,
  4. A description of work activities performed,
  5. A description of any material or equipment deliveries,

6. Description of obstructions encountered,
  7. The temperature and weather conditions.
  8. Downtime due to equipment failure.
  9. Detail cause for work delays.
- B. The daily reports shall be submitted on a daily basis, by the end of the next business day.
- C. Information provided on the daily report shall not constitute notice of delay or any other notice required by the Contract Documents. Notice shall be as required therein.

#### **1.12 OPERATING AND MAINTENANCE INSTRUCTION MANUALS**

- A. Prepare complete written maintenance and operating instructions covering any equipment provided under this Contract. Divide the operating instructions into basic sections according to type of equipment.
- B. Instructions shall describe all equipment and controls, their purpose, and their operation and use. Include maintenance checklists for use by the Owner's personnel and a complete listing of replacement parts with pertinent information relative to ordering such parts.
- C. Submit instructions in duplicate draft form for review by the Engineer at least eight weeks prior to initial operation and in final form within thirty days after return of one copy of the draft with the Engineer's notations.
- D. Prior to release of Final Payments, revise and resubmit copies of the instructions to accord with any changes in procedures or equipment made during start-up or initial operation. Resubmittals are also required for changes made during the guarantee period.

#### **1.13 REQUIREMENTS FOR AMERICAN WATER ASSET VALUES**

Provide a breakdown of the contract amount by Property Units in accordance with the list of Property Units that can be provided as requested. This process requires that the contractor assign the full cost of the project to lengths of pipe (by material and size), length of services (by material and size), hydrants, valves (by size), manholes and other fixtures (air relief valves, blowoffs, etc.) in the project. The submission must be approved by the Engineer to verify that the breakdown is realistic and reflects submitted contract unit prices.

#### **1.14 AS BUILTS**

Where identified as a product of the work, provide as built drawings adhering to the criteria provided here and that found in the special conditions.

- A. Templates - All measurements and information shall be recorded on templates provided. No other backgrounds, templates nor formats will be accepted for the As-Built submission.

- B. Recording the Information - Provide the Record As-Built information in both 'Electronic and Hard' copy mediums, with the exception of the Field Sketches. The Field Sketches are not required to be in the electronic format. The electronic medium format shall be in AutoCAD 2000 or later. The base drawing shall be drawn in Model Space at a scale of 1 to 1, in real world coordinates and all plotting, labeling and dimensioning shall be drawn from Paper Space. Templates shall not be modified or resized due to Optical Scanning requirements. The layering convention and color scheme shall follow the samples provided.
- C. Coordinates – Provide the required survey coordinates in the State Plane Coordinate System unless otherwise noted. The drawing features included shall be as noted below (See 'Pipeline As-Built Drawing Procedure').
- D. Submitting the Information - When the Record information is ready, submit 'Hard' copies of all the information, including sketches to the Engineer for approval. The electronic information shall be burned on a CD (CD-RW). The CD shall have an all white label with the following information on the upper half of the label in Arial 12 font:
 

Illinois American Water, *Champaign District*,  
Small Main Replacement  
201 Devonshire Drive, Champaign, IL 61820
- E. The Information Process - The Engineer will approve the submission or 'red line' any information needing to be corrected or added, and return it for resubmission. When the submittal is approved by the Engineer, provide two CD-RW's each containing all approved Record As-Built information in a clear face hard plastic CD jacket and one hard copy of all approved Record As-Built information (binder clipped together, not bound)

Initial submission must be provided within (14) calendar days of the 'Construction Completion' date, not including the restoration work. The Engineer will return the submission within (7) calendar days of receipt. The approved final submission must be provided within twenty-eight (28) calendar days from the 'Construction Completion' date, not including the restoration work.

- F. General information required - At a minimum, all As-Built record drawings shall contain the following information:
  1. North Arrow with North at the top of the drawing
  2. Face of curb lines, easement lines, edge of pavement (EOP) or right-of-way lines
  3. Business Unit (BU) Number (data provided by Engineer)
  4. Plate Map number (data provided by Engineer)
  5. All objects located shall be referenced to other objects with (3) perpendicular measurements. All such measurements shall be from permanent existing structures, such as catch basins, manholes, buildings, etc. (no utility poles)

6. The proposed pipeline 'line' designation shall be shown in bold or heavier line style per template and sample.

G. Pipeline information required - At a minimum, all As-Built record drawings shall contain the following information:

1. Title Block Information completed (note, any street with work performed in it must have its name included in the title block)
2. Each drawing shall include only the work along one street block (transmission mains excluded). And include the intersecting street corners with the distance to the center line of each intersection. Include Match Lines if multiple drawings are required.
3. If more than one drawing is required, include an overall site plan of the whole project with a drawing key
4. Pipe diameter and material
5. Bill of Materials with arrow identifying where installed
6. Date the water main was put 'In-service' (data provided by Engineer)
7. Include valve, hydrant and tap/service identifying numbers for each (data provided by Engineer)
8. Reference the Point of Connection where the new main pipeline connects to existing Owner facilities and provide dimensions to nearest existing appurtenance
9. If project continues from an existing stub, a dimension from the center line of the nearest street intersection and existing line valve shall be included. Provide coordinates for the referenced existing valve.
10. If the project is a continuation of a previous project, reference the previous project reference number
11. All Valves, tees, horizontal/vertical bends, and the start and end of the new water main shall be located with coordinates in the specified format.
12. All connections, wet cuts and fittings not required to have coordinates shall be dimensionally located
13. Indicate abandoned pipe with type of material and length (if applicable)
14. Indicate and locate buried valves (if applicable) with coordinates in the specified format.
15. Provide measurement from face of curb or edge of pavement at every 250 foot maximum along the pipeline
16. At abrupt changes in pipe elevation, provide a referenced drawing showing the profile of the work and list the material used
17. Provide the depth from finish grade to top of pipe every 100 ft, and at the start and end of the new water main
18. Name of Contractor and Construction Inspector (full last name) on the project (locate in title block)

H. Transmission Pipeline Information - Transmission Mains are typically 16" in diameter and larger; however, the Engineer may classify some 12" diameter pipe projects as a transmission main. Transmission main as-built drawings shall include all relevant information noted above and the following:

1. Title Sheet to include at a minimum:
    - a. American Water District & Project name
    - b. Project Business Unit Number (data provided by Engineer)
    - c. Design Consultant Engineering Company name
    - d. Project date
    - e. County and Town
    - f. List of drawings
    - g. Drawing key with corresponding drawing reference
  2. Include both Pipeline plan and profile views, and include both on the same sheet. Provide a detail sheet copying all valve cards (data provided by Engineer) listed those included and not included on the plan/profile sheets
  3. Include drawing details of all interconnections
  4. Provide the Manufacturer data for the pipe, fittings and appurtenances on the drawings
  5. Show and identify all restraint locations
  6. Include valves, bends, tees, and top of main elevation every 300 foot maximum with coordinates in the specified format.
- I. Connection (Tap and Service) Drawing Information - Service drawings are required where services currently do not exist. This drawing can be incorporated into the Pipeline Drawing noted above. Service drawings shall be on the 11" x 17" template. The drawing shall contain the general information above and the following additional information:
1. Title Block information completed
  2. Every service connection, service valve or curb stop, if installed, shall be located dimensionally with separate measurements for both the corporation and curb/meter box
  3. Valves shall be located with coordinates in the format specified
  4. Identify the main pipeline size, type and location from nearest face of curb or edge of pavement
  5. Tap number and house address shall be clearly shown at each location
  6. Show the size, length and service material
  7. Match lines and/or drawing key if more than one sheet
- J. Field Sketches - Some items installed required separate detailed field sketches. This includes the following
1. Valves (including Valves for Blow-offs) - Valve location measurements and information shall be shown on an 8½" x 11" sketch. Separate sketches are required for each valve, regardless of their proximity to each other. The sketch should be an enlarged and more detailed version of what is depicted on the Pipeline drawing. Any 'Blow-offs' installed with the work shall be shown in detail on a Valve sketch with the same level of information as a valve. At a minimum, all Valve sketches shall contain the following:
    - a. Manufacturer, type, open direction and number of turns (confirm open direction upon delivery)

- b. Main Pipeline type and size
  - c. Valves and Blow-off's shall be located with NJSPCS NAD 83 coordinates
  - d. Valve identifying number (data provided by Engineer)
  - e. Identify other valves, hydrants, fittings and blow-offs within the immediate vicinity
  - f. Identify permanent existing structures
  - g. At least (3) tie down measurements to valve from permanent existing structures including catch basins, manholes, buildings, curbs, etc. (no utility poles)
2. Hydrant - Submit hydrant location measurements and information on an 8½" x 11" sketch. Each 'hydrant' shall have a separate sketch. The sketch should be an enlarged and more detailed version of what is depicted on the Pipeline drawing. At a minimum, all Hydrant sketches shall contain the following:
- a. Manufacturer and hydrant number (data provided by Engineer)
  - b. Bill of Material
  - c. Hydrant valves shall be located with NJSPCS NAD 83 coordinates
  - d. Record flow test results on sketch. If no test was required record static pressure (data provided by Engineer)
  - e. Main Pipeline and lateral type and size
  - f. Identify other valves, hydrants, fittings and blow-offs within the vicinity
  - g. Identify permanent existing structures
  - h. If an existing hydrant was relocated, reference the old hydrant number and it's BU (data provided by Engineer)
3. Tap (Service Connections Installed) -Tap location measurements and information shall be shown on an 8½" x 11" sketch. Each 'service' shall have a separate Tap sketch. The sketch should be an enlarged and more detailed version of what is depicted on the Pipeline drawing / Service drawing. At a minimum, all Tap sketches shall contain the following:
- a. Locate dimensionally the identified Service/Tap
  - b. Sketch shall be oriented with the building receiving the service at the top of the sketch.
  - c. Locate dimensionally the tapped water main from nearest face of curb or EOP
  - d. Locate dimensionally the curb/meter box from nearest curb or EOP
  - e. Tap identifying number (data provided by Engineer)
  - f. House address number and Lot & Block number when applicable (data provided by Engineer)
  - g. Length of 'Service'
  - h. Valve ID Number (data provided by Engineer)
  - i. Valves shall be located with NJSPCS NAD 83 coordinates
  - j. Service to Service dimensions if less than 100 feet
  - k. Identify anything that is underground within (6) feet of the service tap (i.e. blow-offs, chlorine tap, electric, gas, etc.)
  - l. Separate measurements for both the corporation and curb/meter box

- m. At least (3) tie down measurements to curb/meter box from permanent existing structures including catch basins, manholes, buildings, curbs, etc. (no utility poles)
- n. When a service is renewed, the sketch should be labeled "Renew and Increase" and the customer's size and type of material should be recorded
- o. Bill of Material used
- p. Depth of service at curb

## **PART 2: PRODUCTS**

### **1.01 TESTING DATA CERTIFICATES**

Product testing shall comply with all respective AWWA standards. The certificates of compliance shall be electronically scanned and submitted by E-mail to the Engineer or by submitting the hard copy originals to the Engineer.

## **PART 3: EXECUTION**

Not Used.

**END OF SECTION**

SECTION 01600PRODUCTSPART 1: GENERAL**1.01 PROTECTION OF MATERIAL AND EQUIPMENT**

- A. Provide for the safe storage of all material furnished or purchased until it has been incorporated in the completed project and accepted by the Engineer. Bear the risk of loss and/or damage to the materials and Work until the Work is finally accepted by the Engineer.
- B. All electrical and mechanical equipment shall be stored in a warm, dry shelter with proper ventilation. Under no circumstances shall motors, electrical control equipment or any other electrical or mechanical equipment be stored under polyethylene plastic covers or tarpaulins. When space is available inside existing structures, and the Owner approves, the Contractor will be allowed to store equipment inside them. Should such space not be available, construct a shelter with a source of heat and proper ventilation as approved by the Engineer for the storage of equipment.
- C. The interior of all pipe, fittings, and accessories shall be kept free from dirt, foreign matter and standing water at all times.
- D. After valves and hydrants have been inspected, properly store them prior to use. In order to prevent entry of foreign material that could cause damage to the seating surfaces, the valves and hydrants shall be stored in a fully closed position unless recommended otherwise by the manufacturer. Resilient seated valves shall be stored in accordance with the manufacturer's recommendations. This may include storage with protective covers for rubber seats and in marginally open condition. Valves and hydrants shall be stored indoors unless otherwise approved by the Engineer.
- E. If valves must be stored outdoors, protect the operating mechanism, such as gears, motor, actuators and cylinders, from weather elements. Valve ports and flanges must be protected from the weather and foreign materials. If valves are subject to extreme (freezing or excessively hot) temperatures, all water must be removed from the valve interior and the valve closed tightly before storage, unless specifically recommended otherwise by the manufacturer. Valves shall be stored on pallets with the discs in a vertical position to prevent rainwater from accumulating on top of the disc, seeping into the valve body cavity and freezing and cracking the casting.

**1.02 SERVICING EQUIPMENT**

- A. Check all equipment upon acceptance to determine if oil reservoirs are full and areas to be greased are properly packed with grease. Provide the proper grease or oil for use in lubricating the required areas in the equipment. Any service to equipment while in storage, or installed pending acceptance, is the responsibility

of the Contractor and shall be performed per manufacturer's requirements, industry standards or as stated specifically in the technical specifications.

### 1.03 RESPONSIBILITY FOR MATERIAL AND EQUIPMENT

- A. Under no circumstances shall pipe, valves, fittings, or appurtenances be dropped or dumped from any trucks or equipment. When received from the Carrier and at time of unloading, inspect all pipe and accessories for loss or damage. No shipment of material shall be accepted by the Contractor unless loss or damage has been described on the Bill of Lading by the Carrier's agent. Any discrepancies between the Bill of Lading and the physical material shall be noted on the Bill of Lading. All demurrage charges on carloads or truckloads of pipe or other material shall be paid by the Contractor.
- B. After acceptance of material and/or equipment by Contractor at point of delivery, assume full responsibility for safe and secure storage, handling, servicing and installation of such material and/or equipment in accordance with manufacturer's recommendations, industry standards or specific requirements of the Contract Documents. Once in his possession, assume full responsibility for, and protect all material from theft and damage. Any lost or stolen materials shall be replaced at the Contractor's expense.
- C. Re-inspect all material for defects, correct size, and quantity in the field prior to installation. Immediately report all material found to be defective, improperly sized, or deficient in quantity to the Owner.
- D. The Contractor is responsible for all material furnished by the Contractor and Contractor suppliers. All such material which is defective in manufacture or has been damaged in transit or has been damaged after delivery shall be replaced by the Contractor at his expense.
- E. Certain material and equipment will be furnished by the Owner as noted in the Contract Documents. The Contractor's responsibility for material and/or equipment furnished by the Owner shall begin upon the Contractor's acceptance of such material and/or equipment at the point of delivery. All material and equipment shall be examined and items found to be defective in manufacture and/or otherwise damaged shall be rejected by the Contractor at the time and place of delivery. The Owner will thereupon repair or replace the damaged items. Any material and/or equipment found to be defective prior to acceptance by the Engineer shall be repaired or replaced by Contractor at no additional cost to Owner unless Contractor submits proof that such defect was latent and could not have been detected by Contractor when performing their duties and responsibilities under these Contract Documents.
- F. Contractor's and Owner's responsibilities for providing guarantees or warranty and manufacturer's representatives for service, inspection, certification of installation, installation, field training, start-up, etc. for material and/or equipment furnished by Owner shall be as follows unless otherwise specified: Owner will provide the warranty and Contractor is responsible for providing manufacturer's representatives for all necessary field service, start-up service, installation

certifications, installation, field training of Owner's personnel, etc. for Owner furnished material and/or equipment as required for acceptance of such material and/or equipment in the completed project.

## **PART 2: PRODUCTS**

### **2.01 GENERAL**

Unless otherwise specifically provided for in these Specifications, all equipment, materials and articles incorporated in the work shall be new, in current production and the best grade obtainable consistent with general construction usage.

### **2.02 COORDINATION OF DIMENSIONS**

Verify and make necessary corrections to construction dimensions so that all specified and/or alternative equipment, which is approved by the Engineer, can be installed and will function within the intent of the Contract Drawings and Specifications. Promptly notify the Engineer of all necessary corrections required.

### **2.03 SAFETY AND HEALTH REQUIREMENTS**

- A. All materials, equipment, fixtures and devices furnished shall comply with applicable Laws and Regulations.
- B. All material and equipment furnished and installed under this Contract shall be equipped with suitable and approved safety guards and devices required for the safety of the public and operating personnel. Such guards and safety devices shall be in accord with the latest requirements of safety codes approved by the American National Standards Institute as well as the safety requirements of applicable Laws and Regulations. Where said safety codes of the ANSI are incompatible with applicable Laws and Regulations, said Laws and Regulations shall prevail.

## **PART 3: EXECUTION**

### **3.01 INSTALLATION**

- A. Material and equipment shall be installed in accordance with the appropriate Sections of these Specifications.

### **3.02 SERVICES OF MANUFACTURER'S REPRESENTATIVE**

- A. Arrange for a qualified service representative from each company, manufacturing or supplying certain equipment as required by the individual Specification Sections to perform the duties herein described.
- B. After installation of the applicable equipment has been completed and the equipment is presumably ready for operation, but before it is operated by others, the representative shall inspect, operate, test, and adjust the equipment. The

inspection shall include, but shall not be limited to, the following points as applicable:

1. soundness (without cracked or otherwise damaged parts)
  2. completeness in all details, as specified
  3. correctness of setting, alignment, and relative arrangement of various parts
  4. adequacy and correctness of packing, sealing and lubricants
- C. The operation, testing, and adjustment shall be as required to prove that the equipment is left in proper condition for satisfactory operation under the conditions specified.

**END OF SECTION**

SECTION 01700PROJECT CLOSEOUTPART 1: GENERAL**1.01 TESTING OF FACILITIES**

All work shall be tested under operating conditions and pressures and any leaks or malfunctions shall be repaired to the satisfaction of the Engineer at no additional expense to the Owner.

**1.02 CLOSEOUT PROCEDURES**

Submit written certification that Contract Documents have been reviewed, Work has been inspected, and that Work is complete in accordance with Contract Documents and ready for Engineer's inspection. Provide submittals to Engineer that are required by governing or other authorities. Submit Application for final payment identifying total adjusted Contract sum, previous payments, and sum remaining due.

**1.03 PROGRESS CLEANING AND FINAL CLEANING**

- A. Periodically, or as directed during the progress of the Work, remove and properly dispose of the resultant dirt and debris and keep the premises reasonably clear. Upon completion of the Work, remove all temporary construction facilities and unused materials provided for the Work and put the premises in a neat and clean condition and do all cleaning required by the Specifications. Trash and combustible materials shall not be allowed to accumulate in construction locations.
- B. Execute final cleaning prior to final inspection. Clean interior and exterior surfaces exposed to view; remove temporary labels, stains and foreign substances. Clean equipment and fixtures to a sanitary condition. Clean debris. Clean site; sweep paved areas, rake clean landscape surfaces. Remove waste and surplus materials, rubbish, and construction facilities from the site.

**1.04 PROJECT RECORD DOCUMENTS**

- A. Maintain on site, one set of the following record documents; record actual revisions to the Work:
  1. contract drawings
  2. specifications
  3. addenda
  4. change orders and other modifications to the Contract
  5. reviewed shop drawings, product data, and samples

Store record documents separate from documents used for construction. Record information concurrent with construction progress.

- B. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:
  - 1. manufacturer's name and product model and number
  - 2. product substitutions or alternates utilized
  - 3. changes made by addenda and modifications
- C. Record Documents and Shop Drawings: Legibly mark each item to record actual construction including:
  - 1. Measured well depths, screen, casing, and pump types and dimensions in relation to finished ground elevation.
  - 2. Measured site location of well, vault and any other structures.
  - 3. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
  - 4. Field changes of dimension and detail.
  - 5. Details not on original Contract Drawings.

Submit documents to Engineer with final Application for Payment.

## **1.05 SPARE PARTS AND MAINTENANCE MATERIALS**

- A. Contractor Purchased Material
  - 1. Provide products, spare parts, maintenance and extra materials in quantities specified in individual specification sections.
  - 2. Deliver to project site and place in location as directed; obtain receipt prior to final payment.
- B. Owner Purchased Material
  - 4. ~~Return excess owner material to a location(s) specified by the Engineer within three (3) days of job completion.~~

## **1.06 GUARANTEES AND WARRANTIES**

- A. The Contractor expressly warrants that all workmanship and materials performed or furnished under this Contract will conform to the Specifications, Drawings, samples and other applicable descriptions furnished or adopted by the Contractor and with all applicable laws, provisions and requirements of the Contract Documents. Remedy any defects due to faulty materials or workmanship which are discovered within a period of one (1) year from the date of acceptance of the work in this project and pay for any damage resulting from faulty materials or workmanship. The Owner shall give notice of observed defects with reasonable promptness. The Contractor warranty hereunder is in addition to, and not in limitation of, any obligations found elsewhere in the Contract Documents, any special guarantees provided by the Contractor or Contractor suppliers, and any obligations imposed by law.

- B. In addition to the above requirements, assign material and equipment guarantees and warranties from all manufacturers and suppliers to the Owner and deliver copies of such guarantees and warranties and the necessary assignments to the Owner in order to assure the Owner of the full benefit of such guarantees and warranties.

**1.07 RESTORATION**

- A. Restore and/or replace paving, curbing, sidewalks, gutters, shrubbery, fences, sod or other disturbed surfaces and structures to a condition equal to that before the Work began and to the satisfaction of the Engineer and furnish all labor and materials incidental thereto. In restoring improved surfaces, new pavement is required.
- B. No permanent bituminous top paving shall be placed within twenty (20) days, or other specified time frame required by law, after the backfilling shall have been completed, except by order of the Engineer. Temporary paving will be installed prior to the placement of permanent surfaces when required by the Engineer or by any federal, state or local governing body having jurisdiction over the site where the work is being performed. In any event, all permanent bituminous top paving shall be placed within forty five (45) days or other specified time required by law, after the backfill has been completed unless otherwise ordered by the Engineer.

**1.08 MAINTENANCE OF SURFACES**

Following the certification of completion by the Engineer, maintain the surfaces of paved and unpaved trenches and adjacent curbs and gutters, sidewalks, fencing, sod and other disturbed surfaces for a period of one (1) year thereafter or as required by state, county or local authorities unless otherwise stipulated by the Engineer. Supply all material and labor required for the maintenance of the trench surfaces and structures and perform the work in a manner satisfactory to the Engineer.

**PART 2: PRODUCTS**

Not Used.

**PART 3: EXECUTION**

Not Used.

**END OF SECTION**

# FOCUS ON SAFETY



## Safety Bulletin – October 2012

### Pipe Cutting Requirements - Update

In June American Water issued interim requirements for the use of cut off saws. These interim requirements included prohibiting the use of diamond tipped blades in cut off saws. Since that time a work group was established to evaluate the use of pipe cutting tools and techniques.

This work group consisted of operations personnel and operational risk management staff. This workgroup represented a highly collaborative effort involving the review and research of pipe cutting tools. Additionally, several demonstrations of alternative pipe cutting tools were held.

As a result of their efforts, the work group established new pipe cutting requirements for American Water that were approved by state vice-presidents of operations. This effort was a collaborative process that evaluated safety, first and foremost, as well as operational considerations. Below is an update and summary of the new requirements designed to lower exposures to the potential hazards associated with the use of cut off saws.

- As communicated on June 1, 2012, the use of diamond tipped blades is prohibited in any cut-off saw application. Only abrasive blades will be used with cut-off saws.
- The use of cut-off and ring saws is banned in excavations and trenches. This is effective as soon as practical (upon attainment of approved, alternative cutting tools), and no later than January 1, 2013.
- The use of cut-off saws is only authorized for cutting pipe outside of a trench or excavation and must be limited to applications where alternative cutting methods are unsafe or not feasible or practical.
- Ring saws are allowed for cutting pipe outside an excavation only.
- To protect against kick back, cut off or ring saw blades cannot be re-introduced into a previous cut. For pipe cutting, the maximum pipe diameter that can be cut with a continuous or single pass cut will be dependent on work set up and blade size.
- Cut-off saws may be used for pavement cutting if equipped with approved abrasive blades and the saw is properly mounted in a cart approved by the manufacturer, and designed specifically for the saw model in use. If operational conditions are such that a cart cannot be used, the cart requirement is waived for that portion of the work only.

# FOCUS ON SAFETY



AMERICAN WATER

- Alternative cutting tools approved for use in excavations and trenches include:
  - Chain saws specifically approved and equipped with appropriate cutting chain for the pipe material,
  - Diamond Wire Guillotine saws,
  - Manual, pneumatic, and hydraulic powered wheel and snap cutters
  - Reciprocating saws, and
  - Hand saws
- Appropriate Personal Protective Equipment (PPE), must be worn for protection from the hazards associated with the cutting tool and process. PPE includes, as a minimum with all pipe cutting tools: safety glasses or goggles, gloves, safety shoes, hardhat, and Class II or III reflective garment (when in the road right-of-way). Additional PPE including face shield and hearing protection is required when using reciprocating, cut off, chain, ring or guillotine saws.
- All pipe inside an excavation is required to be supported before making any cuts to prevent pinching of the cutting tool
- Employees using gas, hydraulic and/or pneumatic powered saws to cut pipe will receive training/re-training by December 31 of this year. Delivery of new saws may impact this schedule. Only trained employees will be authorized to use this equipment.
- A job safety analysis must be prepared and reviewed with employees as part of their training prior to using cut-off or ring saws for any approved purpose. Should specific hazards or safety concerns exist at the jobsite, these will also be reviewed and mitigated to the extent possible prior to commencement of work.
- In addition to the above requirements, all manufacturer requirements and safety warnings must be followed.
- American Water Procurement has obtained substantially discounted pricing from Stanley Tools (hydraulic powered chain saws), and ICS (hydraulic and gasoline powered chain saws). These chain saws must be purchased through Grainger to receive the American Water discount.
- A health and safety practice will be issued outlining these requirements and other applicable safety considerations.
- As we transition to these new requirements, the June 1, 2012 interim requirements remain in effect.

# FOCUS ON SAFETY



AMERICAN WATER

## APPLICATION TO CONTRACTORS AND SUBCONTRACTORS

Contractors and subcontractors performing work for American Water will conform to the following requirements. To the extent necessary, agreements and related statements of work will be amended to enforce the requirements.

- The use of cut-off and ring saws is prohibited in any trench or excavation.
- The use of diamond tipped blades is prohibited in any cut-off saw application. Only abrasive blades will be used with cut-off saws.
- The use of cut-off saws is only authorized for cutting pipe outside of a trench or excavation and should be limited to applications where alternative cutting methods are unsafe or not feasible or practical. All manufacturers' recommendations, warnings and safeguards must be followed.
- Ring saws are allowed for cutting pipe outside an excavation only on pipe diameters that allow for a single pass cut. All manufacturers' recommendations, warnings and safeguards must be followed.
- Cut-off and Ring saws may be used for pavement cutting if equipped with approved abrasive blades and the saw is properly mounted in a cart approved by the manufacturer and designed specifically for the saw model in use. If operational conditions are such that a cart cannot be used, the cart requirement is waived for that portion of the work only. All manufacturers' recommendations, warnings and safeguards must be followed.
- Contractors will be notified of these requirements by December 31, 2012 and expected to conform to these requirements no later than March 31, 2013.
- It remains the contractor/subcontractor's responsibility to train their respective employees on the proper use and application of all equipment, to follow manufacturer recommendations and to comply with all applicable Federal, State and local health and safety regulations.

**In advance of your cooperation, thank you for ensuring we work safely and return home to our families each night without incident or injury.**

**SECTION 02020**

**DEWATERING**

**PART 1: GENERAL**

**1.01 GENERAL**

- A. Should water be encountered, furnish and operate pumping equipment of sufficient capacity to dewater the trench. Dewater the trench so that the laying and joining of the pipe is made in a dry environment so as to prevent water from entering the pipe during construction.
- B. No additional sum will be allowed for any reasonably anticipated dewatering operation, overtime, equipment rental or any other expense incurred due to the occurrence of ground water, surface water or water from possible leakage of existing buildings, structures and piping in the vicinity of the Contractor's operations. If Contractor believes unreasonable, unanticipated wet conditions exist, immediately contact Engineer to decide appropriate measures and to determine whether Contractor is entitled to additional compensation.
- C. Convey all trench water to a natural drainage channel or storm sewer without causing any property damage. Discharge shall be in strict accordance with state and/or local requirements.
- D. Dispose of silt and debris which accumulates during construction in strict accordance with state and/or local requirements.

**1.02 PERMITS**

The Contractor shall obtain and pay for any permits required for dewatering and disposal.

**PART 2: PRODUCTS**

Not Used

**PART 3: EXECUTION**

Not Used

**END OF SECTION**

## SECTION 02025

### EXISTING UTILITIES AND STRUCTURES

#### PART 1: GENERAL

##### **1.01 SCOPE OF WORK**

Certain information regarding the reputed presence, size, character, and location of existing Underground Facilities such as pipes, drains, sewers, electrical lines, telephone lines, cable TV lines, gas lines, and water lines has been shown on the Contract Drawings and/or provided in the contract documents. This information with respect to Underground Facilities is provided by the Owner in accordance with conditions described in the General Conditions and for information purposes only. Contractor is responsible to determine actual location of all utilities in proximity to the work for the purposes of the preparation of their bid and during construction.

##### **1.02 NOTIFICATION OF UTILITIES**

Notify the applicable State Agency with jurisdiction over underground facilities and/or all utility companies that construction work under this Contract will pass through containing their underground facilities. Notify these parties in advance to support the construction work (**minimum 72 hours**). All excavation in the vicinity of existing underground utilities shall be performed in accordance with applicable regulations.

#### PART 2: PRODUCTS

##### **2.01 MATERIALS**

Furnish all materials for temporary support, adequate protection, and maintenance of all underground and surface utility structures, supports, drains, sewer and other obstructions encountered in the progress of the work.

#### PART 3: EXECUTION

##### **3.01 OBSTRUCTIONS BY OTHER UTILITY STRUCTURES**

Support, relocate, remove, or reconstruct existing utility structures such as conduits, ducts, pipes, branch connections to main sewers, or drains. The obstruction shall be permanently supported, relocated, removed or reconstructed where they obstruct the grade or alignment of the pipe. Contractor must do so in cooperation with the owners of such utility structures. Before proceeding, the Contractor must reach an agreement with the Engineer on the method to work around the obstruction.

No deviation shall be made from the required line or depth without the consent of the Engineer.

### 3.02 REPAIRS

- A. Repair or replace any damage to existing structures, work, materials, or equipment incurred by Contractor's operations.
- B. Repair all damage to streets, roads, curbs sidewalks, highways, shoulders, ditches, embankments, culverts, bridges, trees, shrubs or other public or private property caused by transporting equipment, materials or personnel to or from the work site. Make satisfactory and acceptable arrangements with the persons or agencies having jurisdiction over the damaged property concerning repair or replacement
- C. Brace and support existing pipes or conduits crossing the trench, or otherwise exposed to prevent trench settlement from disrupting the line or grade of the pipe or conduit. Before proceeding, the Contractor must reach an agreement with the Engineer on the method of bracing and support. Repair or replace all utility services broken or damaged at once to avoid inconvenience to customers. Storm sewers shall not be interrupted overnight. Use temporary arrangements, as approved by the Engineer, until any damaged items can be permanently repaired. Maintain all items damaged or destroyed by construction and subsequently repaired.
- D. Standard Detail 0201-0601-SD44 (attached) provides requirements for repair or replacement of sanitary or storm drains removed or damaged during installation of the water main.

### 3.03 RELOCATION

Relocate existing utilities or structures, where necessary, and restore it to a condition equal to that of the original facility. Obtain approval of the owner of the utility or structure prior to relocating and/or restoring the facility.

### 3.04 SEPARATION OF WATER MAINS AND SANITARY SEWERS

#### A. General

Consider the following factors when determining adequate separation:

- (1) Materials and type of joints and restraints for water and sanitary sewer pipes,
- (2) Soil conditions & backfill materials,
- (3) Service and branch connections into the water main and sanitary sewer line,
- (4) Compensating variations in horizontal and vertical separations,
- (5) Space for repair and alterations of water and sanitary sewer pipes,

- (6) Off-setting of pipes around manholes.

B. Parallel Installation

Lay water mains at least 10 feet horizontally from any existing or proposed sanitary sewer. Measure the distance from edge to edge. In cases where it is not practical to maintain a 10-foot separation, the applicable State Agency may allow deviation on a case-by-case basis, if supported by data from the Engineer. Such deviation may allow installation of the water main closer to a sanitary sewer, provided that the water main is laid in a separate trench or on an undisturbed earth shelf located on one side of the sanitary sewer at such an elevation that the bottom of the water main is at least 18 inches above the top of the sanitary sewer.

C. Crossings

Whenever water mains must cross sanitary sewer laterals or sanitary sewers, lay the water main at such an elevation that the bottom of the water main is 18 inches above the top of the sanitary sewer pipe. Maintain this vertical separation for the portion of the water main located within 10 feet horizontally of any sanitary sewer it crosses. The 10 feet is measured as a perpendicular distance from sanitary sewer line to the water line.

D. Exception

Notify the Engineer when it is impossible to obtain the proper horizontal and vertical separation as stipulated above. If directed by the Engineer, both the water main and sanitary sewer line shall be constructed of, mechanical joint ductile iron or welded joint protected steel pipe. Other types of restrained joints of equal or greater integrity may be used at the discretion of the Engineer after consultation with the applicable State Agency. Thermoplastic sanitary sewer pipe may be used provided mechanical or solvent weld pipe joints are used and accepted by the Engineer. Pressure test these joints before backfilling to assure that they are water tight. Where water mains must cross under a sanitary sewer, additional protection shall be provided by:

- (1) A vertical separation of at least 18 inches between the bottom of the sanitary sewer and the top of the water line,
- (2) Adequate structural support for the sanitary sewer to prevent excessive deflection of the joints and the settling on and breaking of the water line,
- (3) Centering the section of water pipe at the point of the crossing so that the joints shall be equidistant and as far as possible from the sanitary sewer line.

Consult the applicable State Agency, through the Engineer, to discuss the use of double casing or concrete encasement of sanitary sewer and/or water lines as possible alternatives when the above conditions cannot be met.

### **3.05 SEPARATION OF WATER MAINS AND STORM SEWERS**

Where water mains and storm sewers would run parallel, lay water mains at least 10 feet horizontally from the existing or proposed storm sewer (measured from edge to edge). Where storm sewers and water mains would cross, place water mains at least 12 inches from the storm sewer (measured from edge to edge). In cases where it is not practical to maintain the specified separation, the Engineer may allow deviation on a case by case basis or as clearly called out in the plans. If the Engineer deems that such deviation will be allowed, install the water main as directed by the Engineer in such a way that does not compromise more stringent and desired separation from sanitary sewers per subsection 3.04.

**END OF SECTION**

**SECTION 02105****CLEARING AND GRUBBING****PART 1: GENERAL****1.01 PROTECTION**

Protect existing trees, shrubs and bushes located outside the clearing limits from damage for the life of this Contract.

**1.02 REQUIREMENTS OF REGULATORY AGENCIES**

Comply with State and local code requirements when disposing of trees, shrubs and all other materials removed under this Specification Section.

**1.03 DISPOSAL FEES**

Bear all expenses to obtain a suitable disposal area, haul to the disposal area, pay disposal fees, and dump at the disposal area.

**PART 2: PRODUCTS****2.01 MATERIALS AND EQUIPMENT**

Provide all materials and equipment required to complete all clearing and grubbing in accordance with this Specification Section.

**PART 3: EXECUTION****3.01 CLEARING AND GRUBBING**

Clear and grub the minimum area required to provide space for construction operations.

- A. Clear and grub the work site within easement and/or clearing limit lines shown on the Drawings or as shown elsewhere in the Contract Documents. Remove those items that are designated for removal or obstruct construction. This includes, but is not limited to; trees, downed timber, shrubs, bushes, vines, roots, stumps, undergrowth, rubbish, paving materials, debris, and all other objectionable materials. Site objects outside clearing limits shall not be removed. Only those portions of the construction area which are absolutely necessary and essential for construction shall be cleared. Minimize the length of time of ground disturbance as much as practical, especially within environmentally sensitive areas. Ground shall not be cleared and grubbed until immediately prior to construction.
- B. Notify the Engineer of locations where additional trees and shrubs will interfere with installation of facilities. Do not remove additional trees or shrubs without written permission of Engineer. Conduct operations to

minimize disturbance of trees and shrubs. Trim trees and roots in accordance with the best horticultural practices, including sealing cuts to preserve the tree.

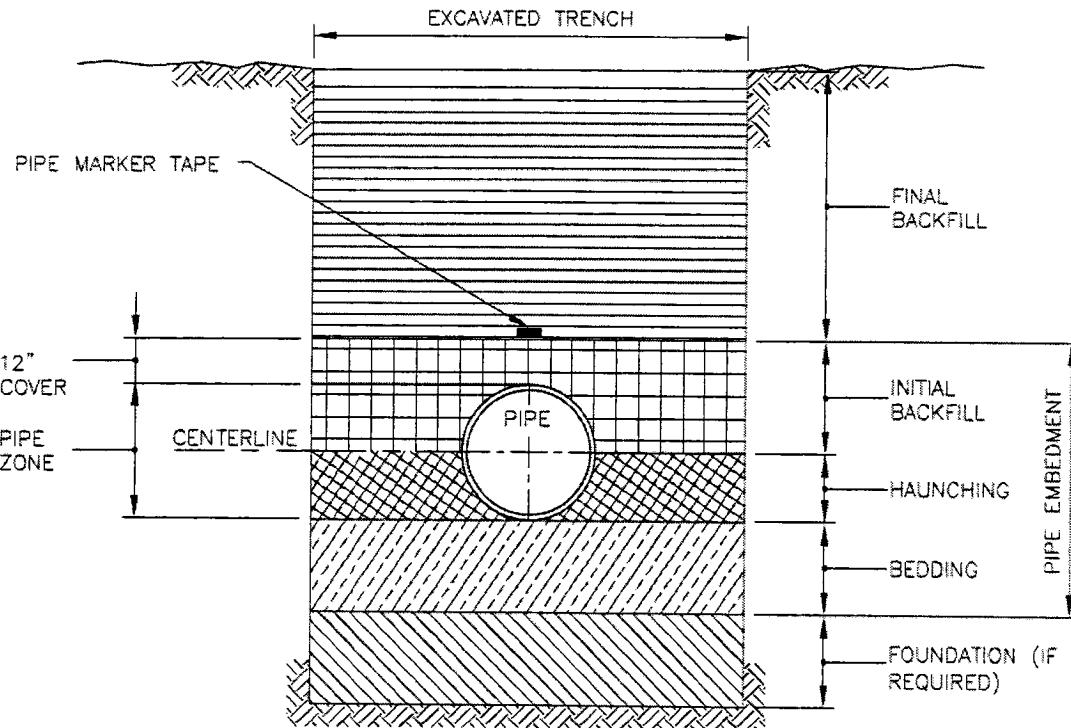
### **3.02 CLEARING (IMPROVED AREA)**

- A. Remove site improvement objects such as signs, lawn ornaments, etc. which interfere with construction. Removed site improvement objects shall be stored in a manner protecting objects for reinstallation after construction is complete. Relocate the mailbox as necessary. Provide temporary traffic control signs when permanent signs are removed for construction. Temporary signs shall be worded to match permanent signs, except as necessary to be compatible with construction operations.
- B. Remove pavement, curb and sidewalk in accordance with applicable State Standards for Road and Bridge Construction and as specified in these Contract Documents. Saw cuts may be eliminated where paving abuts curb or roadway expansion joints or construction joints, and pavement can be removed without damaging or disturbing curbs or remaining pavement,. Remove sidewalks in full squares only. Saw cut sidewalks if no true joint exists.

### **3.03 DISPOSAL**

- A. Burning of logs, stumps, roots, cuttings and other material on the site will not be permitted.
- B. All materials obtained as a result of the clearing and grubbing operations shall be disposed of in accordance with the requirements of the applicable governing agencies.
- C. Chipping of brush materials will be permitted. However, Contractor shall bear all costs to dispose of the resultant chips at an approved location.

**END OF SECTION**

**SECTION 02210****TRENCHING, BACKFILLING AND COMPACTING****PART 1: GENERAL****1.01 DEFINITIONS****TRENCH TERMINOLOGY**

**FOUNDATION:** A FOUNDATION IS NECESSARY ONLY WHEN NATIVE SOILS ARE UNSTABLE. FOR SUCH CONDITIONS, THE TRENCH IS OVER-EXCAVATED AND A LAYER OF SUPPORTIVE MATERIAL IS PLACED AND COMPACTED TO PROVIDE A FIRM FOUNDATION FOR THE SUBSEQUENT PIPE EMBEDMENT MATERIALS.

**EMBEDMENT:** THIS ZONE IS THE MOST IMPORTANT IN TERMS OF PIPE PERFORMANCE. IT IS DIVIDED INTO THE FOLLOWING SUB ZONES:

- **BEDDING:** TYPICALLY SIX INCHES OF SUPPORTIVE, COMPACTED MATERIAL. THIS ZONE PROVIDES EVEN SUPPORT FOR THE PIPE AND BRINGS IT TO GRADE.
- **HAUNCHING:** EXTENDS FROM THE BOTTOM OF THE PIPE TO THE CENTERLINE OF THE PIPE. IT PROVIDES THE MOST RESISTANCE TO PIPE DEFLECTION. SPECIFYING PROPER MATERIALS AND COMPACTION ARE MOST IMPORTANT FOR THIS ZONE.
- **INITIAL BACKFILL:** EXTENDS FROM THE SPRINGLINE TO A POINT ABOVE THE TOP OF THE PIPE. THIS ZONE PROVIDES SOME PIPE SUPPORT AND HELPS TO PREVENT DAMAGE TO THE PIPE DURING PLACEMENT OF THE FINAL BACKFILL. THE COVER EXTENDS FROM THE TOP OF THE PIPE TO THE TOP OF THE INITIAL BACKFILL. THE DEPTH OF COVER SHOULD BE AS MUCH AS NECESSARY TO PROTECT THE PIPE DURING PLACEMENT OF THE FINAL BACKFILL. TWELVE INCHES IS A COMMON DEPTH OF COVER.

**FINAL BACKFILL:** THIS ZONE EXTENDS FROM THE TOP OF THE INITIAL BACKFILL TO THE TOP OF THE TRENCH. THIS ZONE HAS LITTLE INFLUENCE ON PIPE PERFORMANCE, BUT CAN BE IMPORTANT TO THE INTEGRITY OF ROADS AND STRUCTURES.

## 1.02 SUBMITTALS

- A. All backfill materials (to be used for backfill, haunching, and bedding depending on local requirements), including common fill and selected fill [ $\frac{3}{4}$ " clean granular fill,  $\frac{3}{4}$ " modified stone,  $\frac{3}{4}$ " minus granular fill, sand,  $\frac{3}{8}$ " crushed wash rock,  $\frac{1}{2}$ " wet smooth stone, or  $\frac{1}{2}$ " pug mix] shall be approved by the Engineer prior to placing the materials in the pipe trench. Test all backfill materials, whether obtained from the trench excavation or from an off-site source, as directed by the Engineer.
- B. All backfill materials must be approved by the Engineer before they are placed in the pipe trench. Submit samples of the materials to an approved testing agency for analysis as required by the Engineer. Submit the testing agency's test results and report to the Engineer. The report must state that the materials meet the requirements of these Specifications and the Specifications of Federal, State and local authorities (where applicable). Provide flowable fill in areas where it is required by the local street regulator, where the trench is subject to mine drainage and other areas specified in the drawings.

## 1.03 PROFILES AND TOPOGRAPHY

- A. Contours, topography and profiles of the ground shown on the Drawings are believed to be reasonable approximations and are not guaranteed.
- B. The Contractor accepts the construction site with the conditions that existed at the time of bidding.

## PART 2: PRODUCTS

### 2.01 COMMON FILL

- A. Common Fill shall be earth materials entirely free of: vegetation; trash; lumber; and frozen, soft or organic materials. No stones or rocks larger than the sizes listed below will be permitted in the Common Fill:

Common Fill-Type A: No stones or rocks larger than 1-inch

Common Fill-Type B: No stones or rocks larger than 4-inches (measured longest dimension). At the discretion of the Engineer and depending upon the quality of the material, stones and rocks up to a maximum of 6 inches may be allowed on the area one foot above the pipe.

- B. Common fill material may be obtained from the trench excavation provided it has been tested in accordance with the requirements of Specification Section 2210.1.01 above and approved by the Engineer. Furnish the necessary approved common fill materials from an off-site source whenever approved material obtained from the trench excavation is insufficient to complete the backfill.
- C. The use of common fill is permitted in some circumstances as initial backfill for HDPE pipe; however the size of stone and rock for backfill is limited in accordance with the pipe diameter. The maximum stone or rock size is

limited to 1/2" for pipes up to 4" diameter, 3/4" for pipes 6" to 8" diameter, 1" for pipes 10" to 16" diameter and 1-1/2" for larger pipes.

## 2.02 HAUNCHING FILL

- A. Materials used for haunching around the pipe shall be coarse to fine, sandy natural soil material with maximum stone size of 1-inch or local approved selected backfill materials as noted on detail drawings and defined below in Specification Section 2210.2.03. The material shall conform to ASTM D 2487 "Standard Method for Classification of Soils for Engineering Purposes" using the "Unified Soil Classification System", except where a higher standard is required elsewhere in the Contract Documents or by rules or regulations of Federal, State or local governmental bodies having jurisdiction over the site of the Work.
- B. The haunching material shall meet the Class II soil type designation. Class II soil types include GW, GP, SW and SP that are described as non-cohesive, well graded and containing some fines. Voids, finer grained soils or movement can allow undesirable migration of haunching material or migration of the trench sidewall material into the haunching material. In such instances place filter fabric, as directed by the Engineer, in the trench bottom and sides before placing the haunching material.
- C. Haunching material may be obtained from the trench excavation provided it has been approved by the Engineer who may, at his discretion, require testing in accordance with the requirements of Specification Section 2210.1.01 above. Furnish the necessary approved haunching materials from an off-site source whenever approved material obtained from the trench excavation is insufficient to complete the haunching.

## 2.03 BEDDING FILL

Bedding fill materials vary from state to state, see special conditions and detail drawings for the appropriate materials for local use.

- A. 3/4 inch clean granular fill material shall meet the sieve analysis requirements of AASHTO as follows 1" sieve passing 100%, 1/2" sieve passing 0-5% and sieve size No 4 passing 0-1%. This material may be wrapped in filter fabric (trench bottom, side, and over top of clean granular fill), as directed by the Engineer, to prevent the migration of finer grained soils into this material or the migration of this material into the trench bottom or sidewall.
- B. 3/4 inch Minus or Modified granular fill material contains additional fine material and may be used as noted in specific pipe specifications. Material shall meet the sieve analysis requirements of AASHTO as follows 1" sieve passing 100%, 3/4" sieve passing 80-90%, No 4 sieve passing 25-50%, No 10 sieve passing 0-20% No 200 passing sieve 0-5%.
- C. Sand – (California American) – Material shall be free of debris, organic matter, clay or any deleterious material. 100% of material shall pass a number 4 sieve and no more than 12% shall pass sieve number 200.
- D. 3/8" crushed wash rock (Arizona American) - Material shall be crushed rock as per Arizona MAG Section 701 except as modified below. The stones'

weight loss shall not exceed 40 percent of 500 revolutions where tested in accordance with ASTM C-131. The stone shall not show a loss in excess of 12 percent when tested in accordance with AASHTO T-104 (Sodium Sulfate Soundness). A minimum of 75% of the material, by weight, retained on the No. 8 sieve, shall have at least one fractured face produced by the crushing operation. When tested in accordance with ASTM C-136 and C-117, gradation shall comply with the following table:

E. 1/2" wet smooth stone (Tennessee American)

F. 1/2" pug mix stone (Tennessee American)

**2.04 FILTER FABRIC** Filter fabric shall be non-woven, synthetic fiber material with sieve design to prevent the select material in the pipe bedding and haunching from migrating into the surrounding soils. The material shall have a minimum: thickness of 15 mils, tensile strength of 130 lbs., elongation at break of 64%, and trapezoidal tear strength of 70 lbs.

**2.05 FLOWABLE FILL**

A. Flowable fill is suitable for use as backfilling for utility trenches. The basic requirements for furnishing, mixing, and transporting flowable fill are as follows. Materials shall conform to the following standards: Cement ASTM C 150, Fly Ash ASTM C 618, Class C or Class F. Fine Aggregate shall be natural or manufactured sand, or a combination thereof, free from injurious amounts of salt, alkali, vegetable matter or other objectionable material. It is intended that the fine aggregate be fine enough to stay in suspension in the mortar to the extent required for proper flow. The fine aggregate shall conform to the following gradation:

<b>Sieve Size</b>	<b>% Passing</b>
3/4 inch	100
No. 200	0-10

If a flowable mixture cannot be produced, the sand may be rejected.

B. The following are given as typical mix designs for trial mixes. Adjustments of the proportions may be made to achieve proper solid suspension and optimum flowability. Admixtures may be used if desired to improve the characteristics of the mix. The suggested quantities of dry material per cubic yard are as follows:

- **Option 1**  
Cement 50 lbs, Fly Ash 250 lbs. Fine Aggregate 2910 lbs., Water approximately 60 gallons
- **Option 2**  
Cement 100 lbs. Fly Ash 250 lbs, Fine Aggregate 2800 lbs., Water approximately 60 gallons
- **Option 3**  
Cement 100 lbs., Fly Ash 300 lbs., Fine aggregate 2600 lbs., Water approximately 70 gallons

- C. Consistency may be tested by filling an open-minded three inch diameter cylinder six inches high to the top with flowable fill. The cylinder shall be immediately pulled straight up and the correct consistency of the flowable fill shall produce a minimum eight inch diameter circular-type spread with no segregation.
- Materials are to be measured by weight and/or volumetric methods. The flowable fill may be mixed in a central concrete mixer, a ready mix truck, or by other acceptable methods. The flowable fill shall be transported to the point of placement in a revolving drum mixer or in an agitator unit.
- D. Ductile Iron Pipe in Soil Soil shall be coarse to fine, sandy natural soil material with maximum stone size of 1-inch and shall meet ASTM D 2487 "Standard Method for Classification of Soils for Engineering Purposes". Scarify 2" deep before placing pipe.

### **PART 3: EXECUTION**

#### **3.01 CONSTRUCTION EQUIPMENT**

All backfilling and materials handling equipment shall have rubber tires when mains are located in or adjacent to pavements. Crawler equipment shall be permitted when there is no danger of damaging pavement. It is the Contractor's responsibility, to repair, at their expense, any damages due to the use of any equipment to complete the work.

#### **3.02 NOISE, DUST AND ODOR CONTROL**

Conduct all construction activities so as to eliminate all unnecessary noise, dust and odors.

#### **3.03 PROTECTION OF TREES**

Take special care to avoid damage to trees and their root system. Open trenching shall not be used for established trees in areas marked on the plans and designated 'Root Protection Zone'. In these areas, methods to be used include tunneling or boring. In other areas where established trees are to remain with roots in the path of the trench line, the Engineer shall direct acceptable means to install pipe through tree roots. In these areas, methods to be used careful cutting (not ripping or tearing) of larger tree roots. In all cases, operate equipment within the limb spread in a manner which will not injure trees, trunks, branches or their roots. Pay particular attention when employing booms, storing materials, and handling excavated materials.

#### **3.04 TRENCH SUPPORT**

Support open cut excavation for mains where trenching may cause danger to life, unnecessary damage to street pavement, trees, structures, poles, utilities, or other private or public property. Support the sides of the excavation by adequate and suitable sheeting, shoring, bracing or other approved means in accordance with all applicable Federal, State, County, Municipal and OSHA rules and regulations during the progress of the work, whenever and wherever it is necessary. Maintain the trench support materials and equipment in place until backfilling operations have progressed to the point where the supports may be withdrawn without endangering life or property per Article 6 on safety issues.

### 3.05 TRENCH EXCAVATION AND BOTTOM PREPARATION

#### A. General Excavation

General excavation shall consist of the satisfactory removal and disposal of all material taken from within the limits of the Work contracted, meaning the material lying between the original ground line and the finished ground line as shown on the Drawings regardless of whether the original ground line is exposed to air or is covered by water. Excavation below existing ground line to enable any required construction or removals is included. It is distinctly understood that any reference to earth, rock, silt, debris or other materials on the Drawings or in the Specifications is solely for the Owner's information and shall not be taken as an indication of classified excavation or the quantity of earth, rock, silt, debris or other material encountered.

Excavation to the lines and grades indicated on the Drawings or established in the field by the Engineer. Backfill over-excavated areas with approved fill material. All labor and materials shall be furnished at the Contractor's expense.

Keep all excavations free from water. Maintain groundwater a minimum of 6 inches below excavations. Remove soil which is disturbed by pressure or flow of groundwater and replace with free draining material.

Remove pavement over excavations made in paved roadways by saw cutting, milling, or removal by a trench machine. Cut the full depth of the pavement with straight lines and squared edges.

Dispose of excess excavated materials and excavated materials unsuitable for backfilling off site. Furnish the Engineer with satisfactory evidence that an appropriate disposal site was used.

#### B. Rock Excavation

If the Contract includes a unit price for rock excavation, it includes the removal, hauling, stockpiling and/or proper disposal the rock per the section 01700 Basis of Payment. Rock is defined as

- boulders or loose rock having a volume of one cubic yard or more;
- material which cannot be loosened or broken down by ripping with a hydraulic ripper or other Engineer approved devices and equipment designed to remove rock; or
- material that requires systematic blasting, backhoe ramming, barring, or wedging for removal.

Notify the Engineer promptly upon encountering rock. The Engineer's determination as to whether the material meets the definition of rock and Engineer's measurement of the volume of rock removal for which the Contractor is entitled to payment will be final and conclusive. No payment will be made for rock removed without Engineer's approval.

Strip rock for measurements as directed by the Engineer. No payment will be made for rock excavated or loosened before measurement. Only rock actually removed will be paid for, and in no case will payment be made for rock removal beyond the payment limits shown for a standard trench or more than 12" beyond the edge of a

pipeline or 6" below its bottom for pipes of nominal OD 24 inches and less, unless such rock has been removed at the direction of Engineer.

C. Blasting Rock

Blasting is not allowed unless expressly permitted by the Engineer. Notify the Engineer in advance of blasting activity. Provide evidence to the Engineer that the proposed blasting will comply fully with Laws or Regulations.

Do not blast where limited or prohibited by any Federal, State or local laws or regulations, or in violation of any limitation or restriction contained in any right-of-way, or wherever specifically prohibited in any Drawing or other Contract Document. Do not blast within forty (40) feet of any pipe or structure without specific permission from the Owner. Properly cover blasts and protect the pipe or structure. Warn all persons in the vicinity. Blasting shall be at the risk of the Contractor who shall be liable for all damages to persons or property. Secure and pay for all necessary permits. Perform whatever pre-blast surveys and investigations that may be required by the circumstances and/or by Federal, State or local laws.

Prepare a blasting plan and submit it to the Engineer for approval prior to commencing any blasting work. The plan shall state all procedures and methods which will be used to monitor and mitigate the effect or impact of the proposed blasting work.

Employ an experienced blaster holding a blasting license issued by the applicable State to carry out the blasting work. Use, handle, and store explosives as prescribed by the applicable state and federal regulations. Keep all explosives in a safe place at a sufficient distance from the Work so that, in case of accident, no damage will occur to any part of the Work. Contractor shall be held responsible for and shall pay for all damage caused by blasting operations or accidental explosion.

D. Trench Width

Widths of trenches shall be held to a minimum to accommodate the pipe and appurtenances. The trench width shall be measured at the top of the pipe barrel and shall conform to the following limits:

Earth

Minimum: Outside diameter of the pipe barrel plus 8 inches, i.e., 4 inches each side.  
Maximum: Nominal pipe diameter plus 24 inches.

Rock

Minimum: Outside diameter of the pipe barrel plus 24 inches, i.e., 12 inches each side.  
Maximum: Normal pipe diameter plus 30 inches. (Contractor will only be compensated for the minimum described above.)

E. Excessive Trench Width

Provide additional backfill, haunching, and bedding material, as specified in Specification Sections 2210.2.01, 2210.2.02, and 2210.2.03 as approved by the

engineer to fill any trench excavation that exceeds the maximum trench width defined in Specification Section 2110.3.05.D. Dispose of excess excavated materials off site at no cost to the Owner. Furnish the Engineer with satisfactory evidence that an appropriate disposal site was used.

F. Trench Depth

- (1) General Provide prescribed minimum cover from the top of the pipe barrel to the top of the finished grade of the roadway, unless otherwise authorized by the Engineer, or as shown on the plans.
- (2) Earth Excavate to the depth required, so as to provide a uniform and continuous bearing and support for the pipe barrel on solid and undisturbed ground at every point between joints. It will be permissible to disturb the finished trench bottom over a maximum length of 18 inches near the middle of each length of pipe by the withdrawal of pipe slings or other lifting tackle. Provide bell holes. Prepare the finished trench bottom accurately using hand tools.
- (3) Rock Excavate trenches in rock or boulders 6-inches below the pipe barrel for pipe 24-inches or less in diameter. Remove all loose material from the trench bottom. Prepare a pipe bed using bedding material as specified in Specification Section 2210.2.03.
- (4) Unsuitable Bottom Notify the Engineer whenever unsuitable material is found below subgrade. Remove the material over the area and to the depth determined by the Engineer. Provide compacted bedding material as specified in Specification Sections 2210.2.03 to restore the trench bottom to the required grade in these areas.

G. Open Trench Length

The length or size of excavation shall be controlled by the particular surrounding conditions, but shall always be confined to the limits prescribed by Engineer. If the excavation becomes a hazard, or if it excessively restricts traffic at any point, Engineer may require special construction procedures such as limiting the length of the open trench or prohibiting stacking excavated material in the street. Take precautions to prevent injury to the public due to open trenches. All trenches, excavated material, equipment, or other obstacles which could be dangerous to the public, shall be well lighted.

### 3.06 TRENCH BACKFILLING - OPEN TERRAIN

All trench backfilling shall be compacted so that no settlement occurs and is stable with surrounding soil that also shall not have settled.

A. Ductile Iron Pipe and HDPE Pipe

- (1) Bedding
  - a. In Suitable Soil See Section 2.03(c) for definition of soil and means of bedding.

- b. In Rock or Unsuitable Soil When encountering rock or unsuitable material, prepare pipe bedding immediately before pipe is laid. In this instance, compact clean granular fill as described in Specification Section 2210.2.03 from 6" below the pipe to the bottom of the pipe.

(2) Haunching

Place haunching from the bottom of the pipe barrel to the centerline (springline) of the pipe barrel with Haunching Fill (Section 2.02) or clean, granular fill as described in Specification Sections 2210.2.02 and 2210.2.03. See Drawings for required haunching material. Take care to avoid injuring or moving the pipe. Place the material in uniform 6 to 12 inch loose layers and compact each layer so as to eliminate the possibility of settlement, pipe misalignment, or damage of joints.

(3) Initial Trench Backfill

Backfill from the centerline (springline) of the pipe barrel to 12 inches above the pipe with Common Fill-Type A or clean, granular fill as described in Specification Sections 2210.2.01 and 2210.2.03. See Drawings for required initial trench backfill material. Mechanical equipment may be used to place the backfill. Place the material in such a manner that the material does not free fall, but rather flows onto the previously placed material. Consolidate the backfill in such a manner as will ensure the minimum possible settlement and the least interference with traffic. Do not compact the backfill with mechanical equipment, such as wheeled vehicles, unless sufficient cover is provided over the pipe to prevent damage to the pipe.

(4) Final Trench Backfill

Backfill trench from 12 inches above the pipe to final grade with Common Fill-Type B, as described in Specification Section 2210.2.01. Mechanical equipment may be used to place the backfill. Place the material in such a manner that the material does not free fall, but rather flows onto the previously placed material. Consolidate the backfill in such a manner as will ensure the minimum possible settlement and the least interference with traffic. Do not compact the backfill with mechanical equipment, such as wheeled vehicles, unless sufficient cover is provided over the pipe to prevent damage to the pipe.

(5) Surface Conditions

Attend to the trench surface regularly during the course of the Contract. Take prompt corrective measures to correct any settlement or wash-out. Maintain the trench surface in a safe condition that does not interfere with natural drainage.

(6) Deficiency of Backfill

Any material required for backfilling the trenches or for filling depressions caused by settlement or wash-out shall be supplied and placed by the Contractor at his expense.

## B. PVC

(1) Bedding

Prepare pipe bedding immediately before pipe is laid. Use compacted clean, granular fill as described in Specification Section 2210.2.03 from 6" below the pipe to the bottom of the pipe.

(2) Haunching and Initial Backfill

Place haunching and initial backfill from the bottom of the pipe barrel to 12 inches above the top of the pipe barrel with clean, granular fill as described in Specification Section 2210.2.03. When material with high void ratios (e.g. ¾ inch clean granular fill) are used for embedment, it is possible for fines in the trench walls to migrate into the voids. This can cause some loss of support. An alternative method is to install filter fabric in the boundary between the trench and the fill to prevent migration. Place the clean granular material in uniform 6 to 12 inch loose layers and compact each layer so as to eliminate the possibility of settlement, pipe misalignment, or damage of joints. Another alternative is to use materials containing fines, (e.g. ¾ inch minus or modified).

(3) Remaining Trench Backfill

Backfill from 12 inches above the pipe to finished grade with Common Fill-Type B, as described in Specification Section 2210.2.01. Mechanical equipment may be used to place the backfill. Place the material in such a manner that the material does not free fall, but rather flows onto the previously placed material. Consolidate the backfill in such a manner as will ensure the minimum possible settlement and the least interference with traffic. Do not compact the backfill with mechanical equipment, such as wheeled vehicles, unless sufficient cover is provided over the pipe to prevent damage to the pipe.

(4) Surface Conditions

Attend to the trench surface regularly during the course of the Contract. Take prompt corrective measures to correct any settlement or wash-out. Maintain the trench surface in a safe condition that does not interfere with natural drainage.

(5) Deficiency of Backfill

Any material required for backfilling the trenches or for filling depressions caused by settlement or wash-out shall be supplied and placed by the Contractor at his expense.

**3.07 TRENCH BACKFILLING – Under or Within 18 inches of Driveways and Roads**

A. Bedding

Install bedding for selected pipe material in accordance with Section 3.06.

B. Haunching and Backfill

Haunch around the pipe and fill the remainder of the excavation using clean, granular fill, as described in Specification Section 2210.2.03. Place the material in uniform 6 to 12 inch loose layers and compact each layer so as to eliminate the possibility of settlement, pipe misalignment, or damage of joints. Take care to avoid injuring or moving the pipe.

C. Surface Conditions

Attend to the trench surface regularly during the course of the Contract. Take prompt corrective measures to correct any settlement or wash-out. Maintain the trench surface in a safe condition that does not interfere with natural drainage.

D. Deficiency of Backfill

Any material required for backfilling the trenches or for filling depressions caused by settlement or wash-out shall be supplied and placed by the Contractor at his expense.

**3.08 SPECIAL BACKFILLING\_ (Under Roads – option to the Contractor)**

A. Bedding

Install bedding for selected pipe material in accordance with Section 3.06.

B. Haunching and Initial Backfill

Place haunching and initial backfill from the bottom of the pipe barrel to 12 inches above the top of the pipe barrel with clean, granular fill as described in Specification Section 2210.2.03. When material with high void ratios (e.g.  $\frac{3}{4}$  inch clean granular fill) are used for embedment, it is possible for fines in the trench walls to migrate into the voids. This can cause some loss of support. An alternative method is to install filter fabric in the boundary between the trench and the fill to prevent migration. Place the clean granular material in uniform 6 to 12 inch loose layers and compact each layer so as to eliminate the possibility of settlement, pipe misalignment, or damage of joints. Another alternative is to use materials containing fines, (e.g.  $\frac{3}{4}$  inch minus or modified).

C. Remaining Trench Backfill

Backfill from the top of the pipe to subgrade, all cuts, excavations, or other damage done to the public right-of-way with flowable fill as described below. Use flowable fill when required as a condition of the right-of-way excavation permit.

(1) Flowable fill shall have the following characteristics:

- a. Unconfined Compressive Strength (28 day) 50-150 psi.
- b. Flow Test - diameter of spread  $\leq$  8 inches.

(2) Design: Submit the mix design to the Engineer for approval. A trial batch demonstration may be required. The mix design shall include a list of all ingredients, the source of all materials, the gradation of all aggregates, the names of all admixtures and dosage rates, and the batch rates.

Document and justify minor mix design changes, after the trial batch verification, prior to implementation. This does not include adjustments to compensate for routine moisture fluctuations. Resubmit the mix design for approval of changes in the source of materials, the addition or deletion of admixtures, or changes in cementitious materials. The Contractor may be required to provide test data from a laboratory, inspected by the Cement and Concrete Reference Laboratory and approved by the Municipality, which shows the proposed mix design is in accordance with the requirements listed above.

- (3) Flow Test: Place a three (3) inch diameter by six (6) inch high open ended cylinder on a smooth, nonporous, level surface and fill it to the top with the flowable fill. Pull the cylinder straight up within 5 seconds of filling. Measure the spread of the fill. The minimum diameter of the spread shall be eight (8) inches.
  - (4) Placement: Discharge the mixture from the mixing equipment into the space to be filled by a reasonable means. The flowable fill shall be brought up uniformly to the fill line. Each filling stage shall be as continuous as practicable. Do not place concrete on the flowable fill until all bleeding water has disappeared and the resistance, as measured by ASTM C403, is at least 60 psi, or as directed by Engineer. Do not place asphalt until at least 24 hours after the fill is completely in place.
  - (5) Limitations: Do not place flowable fill on frozen ground. Protect flowable fill from freezing until the material has stiffened and bleeding water has disappeared. As the temperature nears freezing, additional curing time may be needed.
- D. Surface Conditions: Attend to the trench surface regularly during the course of the Contract. Take prompt corrective measures to correct any settlement or wash-out. Maintain the trench surface in a safe condition that does not interfere with natural drainage.
- E. Deficiency of Backfill: Any material required for backfilling the trenches or for filling depressions caused by settlement or wash-out shall be supplied and placed by the Contractor at his expense.

### 3.09 QUALITY ASSURANCE TESTING

The Owner reserves the right to have the Contractor provide Independent Quality Assurance Testing for the backfill material, at the Contractor's expense.

### 3.10 TRENCH MAINTENANCE

Assume full responsibility for the condition of the trenches for a period of one (1) year from the date of the final acceptance of the Contractor's work, or as required by state, county or local authorities, and any materials required for filling depressions caused by settlement or wash-out shall be supplied and placed by the Contractor at their expense.

**END OF SECTION**

**SECTION 02220****CASING INSTALLATION****PART 1: GENERAL****1.01 GENERAL REQUIREMENTS**

The installation of casing pipe shall conform to these Specifications and any Federal, State or local Highway requirements or applicable Railroad requirements whichever may be more restrictive.

**1.02 SUBMITTALS**

Submit details of proposed jacking or boring pits to the Engineer showing locations, dimensions, and details of sheeting and shoring required, if requested.

**1.03 RELATED WORK**

Excavation, backfilling and compaction for jacking and receiving pits and for open cut installation shall conform to the requirements set forth in Specification Section 2210.

**PART 2: PRODUCTS****2.01 MATERIAL**

Casing pipe shall be bare wall steel pipe with a minimum yield strength of 35,000 psi and a minimum wall thickness as listed below:

Casing Outside Diameter <u>Inches</u>	Highway Crossings Casing Wall Thickness <u>Inches</u>	Railroad Crossings Casing Wall Thickness <u>Inches</u>
8.625	0.250	0.250
10.75	0.250	0.250
12.75	0.250	0.250
14	0.250	0.281
16	0.250	0.281
18	0.250	0.312
20	0.312	0.344
24	0.312	0.406
30	0.375	0.469
36	0.500	0.532
42	0.500	0.563
48	0.625	0.625
54	0.625	0.688
60	0.625	0.750
66	0.625	0.813
72	0.750	0.875

Smooth wall steel plates with a nominal diameter of over 54 inches shall not be permitted.

The inside diameter of the casing pipe shall be: at least four (4) inches greater than the outside diameter of the carrier pipe joints or couplings for carrier pipe less than six (6) inches in diameter; and at least six (6) inches greater than the outside diameter of the carrier pipe joints or couplings for carrier pipe six (6) inches and greater in diameter.

## **PART 3: EXECUTION**

### **3.01 ALIGNMENT AND GRADE**

Locate pipelines to cross roadways or tracks at approximately right angles where practicable, but preferably at not less than 45 degrees. Do not place pipelines in culverts or under bridges where there is a likelihood of their restricting the area required for the purposes for which the bridges or culverts were built, or of endangering the foundations. Install the casing pipe on an even grade for its entire length and sloped to one end or as noted in a profile plan if provided. Satisfy a maximum tolerance of 1.5% (18" in one hundred feet) with the desired location of the casing or as otherwise required by regulation or specified on the plans, whichever is more restrictive.

### **3.02 WELDING**

Connect steel casing sections by welding. Welding shall conform to AWWA Standard C206.

### **3.03 PROTECTION AT ENDS OF CASING**

Block up both ends of casings in such a way as to prevent the entrance of foreign material, but to allow leakage to pass in the event of a carrier break.

### **3.04 DEPTH OF INSTALLATION**

Unless the depth of casing pipe is specifically specified on the drawings, the casing pipe depth shall be in accordance with highway or railroad requirements.

### **3.05 CASING INSULATORS**

The carrier pipe and casing shall be separated by an insulator. The insulator spacing shall be installed to support the weight of the pipe and contents. As a minimum, an insulator shall be placed a maximum of 3 foot from each side of a joint and evenly spaced along the carrier pipe with 3 insulators per each length of carrier pipe. Timber skids are not allowed. Casing insulators shall be sized according to the manufacturers specifications for pipe sizes from the following list of approved manufactures and casing types.

- A. Cascade Water Works Manufacturing Company (Stainless Steel only).
- B. Pipeline Seal and Insulator, Inc. (Carbon Steel with polyvinyl chloride or the Ranger II model).

- C. Advanced Products and Systems, Inc. (Model SI).
- D. Power Seal Pipeline Products Corp. (Model 4810).
- E. RACI (polyethylene model F-60 for 12-inch carrier pipe and smaller).  
RACI shall not be used for carrier pipe larger than 12-inch.

At the sole discretion of the Engineer, alternate manufacturers in lieu of those described above and new or improved products by the same manufacturers may be permitted. To seek approval, adequately describe any proposed alternate product and submit the same with shop drawings and specifications to the Engineer. The Contractor cannot proceed to employ said alternate products prior to receiving written approval of from the Engineer.

### 3.06 INSTALLATION

Refer to Standard Detail 0201-0601-SD45 at the end of this Specification Section for a typical casing installation detail.

Install casing pipes by one of the following methods:

#### A. Jacking

This method shall be in accordance with the current American Railway Engineering Association Specifications, Chapter 1, Part 4, "Jacking Culvert Pipe Through Fills", except that steel pipe shall be used with welded joints. Conduct this operation without hand mining ahead of the pipe and without the use of any type of boring, auguring or drilling equipment.

Design the bracing, backstops, and jacks so that the jacking can progress without stoppage (except for adding lengths of pipe).

#### B. Drilling

This method employs the use of an oil field type rock roller bit, or a plate bit made up of individual roller cutter units, welded to the pipe casing being installed. Turn the pipe for its entire length from the drilling machine to the head to give the bit the necessary cutting action against the ground being drilled. Inject high density slurry (oil field drilling mud) through a supply line to the head to act as a cutter lubricant. Inject this slurry at the rear of the cutter units to prevent any jetting action ahead of the pipe. Advance the drilling machine on a set of steel rails (thus advancing the pipe) by a set of hydraulic jacks. The method can be used to drill earth or rock.

#### C. Boring

This method consists of pushing the pipe into the fill with a boring auger rotating within the pipe to remove the soil. When augers or similar devices are used for pipe placement, the front of the pipe shall be provided with mechanical arrangements or devices that will positively prevent the auger and cutting head from leading the pipe so that there will be no unsupported excavation ahead of

the pipe. The auger and cutting head arrangement shall be removable from within the pipe in the event an obstruction is encountered. The over-cut by the cutting head shall not exceed the outside diameter of the pipe by more than one-half inch. The face of the cutting head shall be arranged to provide reasonable obstruction to the free flow of soft or poor material.

If an obstruction is encountered during installation that stops the forward action of the pipe, and if it becomes evident that it is impossible to advance the pipe, operations will cease and the pipe shall be abandoned in place and filled completely with grout.

Bored or jacked installations shall have a bore hole essentially the same as the outside diameter of the pipe. Grout any voids that develop. Also grout around the casing pipe when the bore hole diameter is greater than the outside diameter of the pipe by more than 1 inch.

D. Directional Drilling — see Specification 02458

~~This process employs a drilling bit that is guided through soil to create a round cavity, which will stay intact with suitable soils and conditions for at least several days. Consequently, soil testing may be required by the Engineer. Test hole and ream as required. The drill head is propelled and remains linked to the rig by adding segments of rod as the head proceeds forward. After the hole has been completed the drill bit is removed and a pulling adaptor is attached to the drilling stem and pipe is secured to the adaptor.~~

~~As the adaptor is pulled back to the rig, segments of drill rod are removed. Pipe is either a continuous fused material or segments of restrained pipe are added as the adaptor is pulled back to the rig. The selection of pipe material and restraints, if required must be approved by the Engineer. The process continues until the adaptor returns to the rig and all of the water main is in place.~~

~~This process may be employed only if approved by Engineer and governing transportation and or regulating authority. The drilled opening and pipe inserted cannot be less than 3 inches in tolerance. Circulate grout in annular space completely. Alignment and grade must be maintained and the drilled hole must be controllable using steering technology. Use radio equipment to track. Provide report of depth and location at 20 foot intervals during installation and submit as a report.~~

**END OF SECTION**

**SECTION 02558**  
**IDENTIFICATION/LOCATION GUIDE**

**PART 1: GENERAL**

**1.01 SCOPE**

- A. Furnish and install identification tape and location wire over the centerline of buried potable water mains, hydrant branches, and trenched services as indicated in this specification or noted in the drawings.

**PART 2: PRODUCTS**

**2.01 IDENTIFICATION TAPE**

- A. Identification Tape for Pipe

Identification tape shall be manufactured of polyethylene with a minimum thickness of 4-mils and shall have a 1-mil thick metallic foil core. The tape shall be highly resistant to alkalis, acid and other destructive agents found in soil. Tape width shall be a minimum of 3 inches and a maximum of 6 inches and shall have the background color specified below, imprinted with black letters. Imprint shall be as specified below and shall repeat itself a minimum of once every 2 feet for entire length of the tape.

- B. Tape background colors and imprints shall be as follows:

<u>Imprint</u>	<u>Background Color</u>
"CAUTION CAUTION - WATER LINE BURIED BELOW"	Blue
C. Identification tape shall be "Terra Tape" as manufactured by Reef Industries, Inc., Houston, TX, or approved equal.	

**2.02 LOCATION WIRE**

- A. Location (Tracer) Wire for Polyvinyl Chloride and HDPE pipe (and other pipe where noted in the drawings or identified in special conditions)

Location wire shall be a direct burial #12 AWG Solid (.0808" diameter), 21% conductivity annealed copper-clad high carbon steel strength tracer wire, 380# average tensile break load, 30 mil. High molecular weight-high density blue polyethylene jacket complying with ASTM D1248, 30 volt rating. The wire shall be contiguous except at test stations, valve boxes, and where splicing is required. All splices shall be encased with a 3M-Gel Pack model No. 054007-09053. Wire insulation shall be highly resistant to alkalis, acid and other destructive agents found in soil.

- B. Location Wire shall be from Copperhead Industries, LLC, part number 1230B-HS or approved equal.

- C. If directional drilling is used for this project please refer to specification 02458 for the product description of location wire to be used with the directional drilling

### 2.03 RESTRAINED JOINT MARKING TAPE

- A. Joint restraint tape is specifically to warn Water Company workers/contractors that the water main is joint restrained. It is not to be used in place of regular marking tape.
- B. Restrained Joint Marking Tape (for with mains that are restrained joint as directed by the Engineer) shall be polyethylene 4-mill thick and 2 1/2-inches wide with blue lettering on white background color and imprinted with the words "RESTRAINED JOINT" every 2 foot. The tape shall have an adhesive backer. The tape shall be highly resistant to alkalis, acid and other destructive agents found in soil.
- C. Restrained Joint Gasket indicator tape shall be part number 515401-010 manufactured by St. Louis Paper & Box Company located at 3843 Garfield, St. Louis, MO 63113 or approved equal.

## PART 3: EXECUTION

### 3.01 INSTALLATION OF IDENTIFICATION TAPE

- A. Install the identification tape with all buried potable water lines in accordance with the manufacturer's installation instructions and as specified.
- B. Install identification tape one foot above the top of the pipe.

### 3.02 INSTALLATION OF LOCATION (TRACER) WIRE

- A. Install location wire with buried water lines in accordance with the manufacturer's installation instructions and as specified in Contract Documents.
- B. Install the location wire directly on top of the buried pipe.
- C. In all pipe installations, loop the location wire up into a Tracer Wire Access Box not the valve boxes for connection to a locating device. The wire shall be one continuous piece from access box to access box up to 1250 feet maximum.

### 3.03 INSTALLATION OF RESTRAINED JOINT MARKING TAPE

- A. Install the joint marking tape by adhering directly to the pipe as it is installed. The marking tape shall be installed along the entire length of pipe, including around the circumference of the bells of all fittings and valves. The pipe must be free of any foreign matter along the surface of the pipe for the marking tape installation. If clear polywrap is used, the restrained joint tape can be applied on the top of the pipe so long as it is visible. Otherwise the joint marking tape shall be applied on top of the polywrap and secured so the tape is not shifted by backfilling.

- B. The tape does not adhere in wet or cold conditions. The tape should be stored in temperatures above 50 degrees F until the time of application. The pipe must be free of frost and moisture along the surface of the pipe receiving the tape.

**END OF SECTION**

## SECTION 15000

### PIPING - GENERAL PROVISIONS

#### PART 1: GENERAL

##### **1.01 DRAWINGS**

Dimensions shown on Contract Drawings are approximate only. Verify all piping geometry in the field and to ensure proper alignment and fit of all piping consistent with the intent of the Contract Drawings. Submit field layout drawings as required for approval.

##### **1.02 RELATED WORK**

See Specification Section 01600.3.03-Responsibility for Material and Equipment.

#### PART 2: PRODUCTS

##### **2.01 CONTRACTOR'S RESPONSIBILITY FOR MATERIAL**

- A. Examine all material carefully for defects. Do not install material which is known, or thought to be defective.
- B. The Engineer reserves the right to inspect all material and to reject all defective material shipped to the job site or stored on the site. Failure of the Engineer to detect damaged material shall not relieve the Contractor from his total responsibility for the completed work if it leaks or breaks after installation.
- C. Lay all defective material aside for final inspection by the Engineer. The Engineer will determine if corrective repairs may be made, or if the material is rejected. The Engineer shall determine the extent of the repairs.
- D. Classify defective pipe prior to Engineer's inspection as follows:
  1. Damage to interior and/or exterior paint seal coatings.
  2. Damage to interior cement-mortar or epoxy lining.
  3. Insufficient interior cement-mortar lining or epoxy thickness .
  4. Excessive pitting of pipe.
  5. Poor quality exterior paint seal coat.
  6. Pipe out of round.
  7. Pipe barrel area damaged to a point where pipe class thickness is reduced (all pipe).
  8. Denting or gouges in plain end of pipe (all pipe).
  9. Excessive slag on pipe affecting gasket seal (DI).
  10. Any visible cracks, holes.
  11. Embedded foreign materials.
  12. Non-uniform color, density and other physical properties along the length of the pipe.

- E. The Contractor shall be responsible for all material, equipment, fixtures, and devices furnished. These materials, equipment, fixtures and devices shall comply with the requirements and standards of all Federal, State, and local laws, ordinances, codes, rules, and regulations governing safety and health.
- E. Take full responsibility for the storage and handling of all material furnished until the material is incorporated in the completed project and accepted by the Engineer. Contractor shall be solely responsible for the safe storage of all material furnished to or by him until incorporated in the completed project and accepted by the Engineer.
- F. Load and unload pipe, fittings, valves, hydrants and accessories by lifting with hoists or skidding to avoid shock or damage. Do not drop these materials. Pipe handled on skidways shall not be skidded or rolled against other pipe. Handle this material in accordance with AWWA C600, C605 or C906 whichever is applicable.
- G. Drain and store fittings and valves prior to installation in such a manner as to protect them from damage due to freezing of trapped water. Drain, store, and protect fittings and valves in accordance with Specification Section 01600.

## 2.02 PETROLATUM TAPE COATING

- A. The tape coating shall be a cold applied, saturant tape made from either petrolatum or petroleum wax with a noncellulosic synthetic fiber fabric. The fabric shall be encapsulated and coated on both sides with the petrolatum or petroleum wax. The thickness of the tape shall be no less than 40 mil. The petrolatum or petroleum wax shall be at least 50% of the product by weight.
- B. The tape coating shall be supplied in sheets, pads or rolls. Pads and sheets shall be sized to fit the area that is to be covered, allowing for an overlap per AWWA Standards.

## 2.03 RUBBERIZED-BITUMEN BASED SPRAY-ON UNDERCOATING

Subject to approval by the ENGINEER, an alternative corrosion protection for exposed buried metal is an aerosol applied rubberized coating. The material shall be rapid dry and specifically designed for corrosion protection. 3M Rubberized Underseal Undercoating 08883 or any equivalent rubberized-bitumen based spray-on undercoating may be used. Follow manufacturer's recommendations for storage and application.

## PART 3: EXECUTION

### 3.01 INSTALLATION - GENERAL REQUIREMENTS

- A. Lay and maintain all pipe to the required lines and depths. Install fittings, valves and hydrants in strict accordance with the Specifications at the required locations with joints centered, spigots home, and all valve and hydrant stems plumb. Do not deviate from the required alignment, depth or grade without the written consent of the Engineer.

- B. Buried steel lugs, rods, brackets, and flanged joint nuts and bolts are not permitted unless specifically shown on the drawings or approved in writing by the ENGINEER. Cover any and all buried steel lugs, rods, brackets, and flanged joint nuts and bolts with approved coating in accordance with AWWA Standard C217 prior to backfilling. Encase the same in polyethylene encased if the specifications require polyethylene encasement of the pipe.
- C. Lay all pipe to the depth specified. Measure the depth from the final surface grade to the top of the pipe barrel. The minimum pipe cover shall be as shown on the Drawings or as specified in the Specifications Special Conditions.
- D. Do not lay pipe in a wet trench, on subgrade containing frost, or when trench conditions are unsuitable for such work. If all efforts fail to obtain a stable dry trench bottom and the Engineer determines that the trench bottom is unsuitable for such work, the Engineer will order the kind of stabilization to be constructed, in writing. In all cases, water levels must be at least 6" below the bottom of the pipe. See section 02020, Dewatering.
- E. Thoroughly clean the pipes and fittings before they are installed. Keep these materials clean until the acceptance of the completed work. Lay pipe with the bell ends facing in the direction of laying, unless otherwise shown on the Drawings, or directed by the Engineer. Exercise care to ensure that each length abuts the next in such a manner that no shoulder or unevenness of any kind occurs in the pipe line.
- F. Do not wedge or block the pipe during laying unless by written order of the Engineer.
- G. Before joints are made, bed each section of pipe the full length of the barrel, at the required grade, and at the invert matching the previously laid pipe. Dig bell holes sufficiently large to permit proper joint making. Do not bring succeeding pipe into position until the preceding length is embedded and secure in place.
- H. Take up and relay pipe that is out of alignment or grade, or pipe having disturbed joints after laying. Take up, such in-place pipe sections found to be defective and replace them with new pipe. Take up, relaying, and replacement will be at the Contractor's expense.
- I. Place enough backfill over the center sections of the pipe to prevent floating. Take all other necessary precautions to prevent the floating of the pipeline by the accumulation of water in the trench, or the collapse of the pipeline from any cause. Place enough backfill over the center sections of the pipe to prevent floating. Should floating or collapse occur, restoration will be at the Contractor's expense.
- J. Bedding materials and concrete work for the pipe bedding and thrust restraint shall be as specified in Divisions 2, 3, and 15 as well as detail drawings.

- K. Prevent foreign material from entering the pipe while it is being placed. Do not place debris, tools, clothing, or other materials in the pipe during laying operations. Close all openings in the pipeline with watertight plugs when pipe laying is stopped at the close of the day's work, or for other reasons such as rest breaks or meal periods.
- L. Only cut pipe with equipment specifically designed for cutting pipe such as an abrasive wheel, a rotary wheel cutter, a guillotine pipe saw, or a milling wheel saw. Do not use chisels or hand saws. Grind cut ends and rough edges smooth. Bevel the cut end slightly for push-on connections as per manufacturer recommendations.
- M. In distributing material at the site of the Work, unload each piece opposite or near the place where it is to be laid in the trench. If the pipe is to be strung out, do so in a straight line or in a line conforming to the curvature of the street. Block each length of pipe adequately to prevent movement. Block stockpiled pipe adequately to prevent movement. Do not place pipe, material, or any other object on private property, obstructing walkways or driveways, or in any manner that interferes with the normal flow of traffic.
- N. Exercise special care to avoid damage to the bells, spigots or flanged ends of pipe during handling, temporary storage, and construction. Replace damaged pipe that cannot be repaired to the Engineer's satisfaction, at the Contractor's expense.
- O. Remove all existing pipe, fittings, valves, pipe supports, blocking, and all other items necessary to provide space for making connections to existing pipe and installing all piping required under this Contract.
- P. Maintain the minimum required distance between the water line and other utility lines in strict accordance with all Federal, State, and local requirements and all right-of-way limitations.
- Q. Provide and install polyethylene encasement for ductile iron pipe as required by the Drawing or Specification Special Conditions. See Specification Section 15130 or 15131, as applicable.
- R. The maximum allowable deflection at the joints for push-on joint pipe shall be the lesser of manufacturer's recommendations or as described in the DIPRA Guideline, *Ductile Iron Pipe Joints and Their Uses*, as follows:

<u>Size of Pipe</u>	<u>Deflection Angle</u>	<u>Maximum Deflection (18-ft. Length)</u>	<u>(20-ft. Length)</u>
3"-12"	5 degrees	19"	21"
14"-42"	3 degrees	11"	12"
48"-64"	3 degrees	N/A	12"

- S. Use short lengths of pipe (minimum length 3 feet, no more than three short sections), when approved by the Engineer, to make curves that cannot be made with full length sections of pipe without exceeding the allowable deflection. Making these curves will be at no additional cost to the Owner.
- T. Furnish air relief valve assemblies in accordance with detail drawings provided or as specified in the specification Special Conditions section. Engineer will provide standard detail for additional air release valve assemblies. Any deviation from the standard detail proposed by contractor must be approved in advance.
- U. Exercise particular care so that no high points are established where air can accumulate. Install an air release valve and manhole, as extra Work to the Contract, when the Engineer determines that unforeseen field conditions necessitate a change in the pipe profile that requires the installation of an air release valve and manhole. If the Contractor requests a change in the pipe profile solely for ease of construction, and the requested change requires the installation of an air release valve and manhole as determined by the Engineer, the cost of furnishing and installing the air release valve and manhole will be at the expense of the Contractor.

### 3.02 CONSTRUCTION METHODS TO AVOID CONTAMINATION

- A. Heavy particulates generally contain bacteria and prevent even very high chlorine concentrations from contacting and killing such organisms. It is essential that the procedures of this Specification Section be observed to assure that a water main and its appurtenances are thoroughly clean for the final disinfection by chlorination.
- B. Take precautions to protect the interior of pipes, fittings, and valves against contamination. String pipe delivered for construction so as to keep foreign material out of the pipe. Close all openings in the pipeline with watertight plugs when pipe laying is stopped at the close of the day's work or for other reasons, such as rest breaks or meal periods. Use rodent-proof plugs approved by Engineer, where it is determined that watertight plugs are not practical and where thorough cleaning will be performed.
- C. Delay in placement of delivered pipe invites contamination. The more closely the rate of delivery is correlated to the rate of pipe laying, the lower the likelihood of contamination. Complete the joints of all pipe in the trench before stopping work. If water accumulates in the trench, keep the plugs in place until the trench is dry.
- D. When encountering conditions on pre-existing pipe that requires packing, employ yarning or packing material made of molded or tubular rubber rings, or rope of treated paper or other approved materials. Do not use materials such as jute, asbestos, or hemp. Handle packing material in a manner that avoids contamination.

- E. Do not use contaminated material or any material capable of supporting prolific growth of microorganisms for sealing joints. Handle sealing material or gaskets in a manner that avoids contamination. The lubricant used in the installation of sealing gaskets shall be suitable for use in potable water. Deliver the lubricant to the job in closed containers and keep it clean.
- F. If dirt enters the pipe, and in the opinion of the Engineer the dirt will not be removed by the flushing operation, clean the interior of the pipe by mechanical means, then swab with a 1% hypochlorite disinfecting solution. Clean using a pig, swab, or "go-devil" only when the Engineer has specified such and has determined that such operation will not force mud or debris into pipe joint spaces.
- G. If the main is flooded during construction, the flooded section must be isolated from the remainder of the installation as soon as practical. Submit a plan to the Engineer on correcting the condition and do not proceed until authorized by the Engineer. Replace or fully clean and disinfect the affected pipe at no additional cost to the Owner.

### 3.03 VALVE INSTALLATION

- A. Prior to installation, inspect valves for direction of opening, freedom of operation, tightness of pressure containing bolting, cleanliness of valve ports and especially of seating surfaces, handling damage, and cracks. Correct defective valves or hold for inspection by the Engineer.
- B. Set and join to the pipe in the manner specified in Specification Section 3.01. Provide valves with adequate support, such as crushed stone and concrete pads, so that the pipe will not be required to support the weight of the valve. Set truly vertical. After field installation of the valve all exposed ferrous restraint materials and external bolts except the operating nut shall receive a layer of petrolatum tape coating or, where approved, rubberized-bitumen based spray-on undercoating applied before backfill. If polyethylene is applied to the pipe, the entire valve shall be encased in polyethylene encasement prior to backfill. The polyethylene encasement shall be installed up to the operating nut leaving the operating nut exposed and free to be operated.
- C. Provide a valve box for each valve. Set the top of the valve box neatly to existing grade, unless directed otherwise by the Engineer. Do not install in a way that allows the transfer shock or stress to the valve. Center and plumb the box over the wrench nut of the valve. Do not use valves to bring misaligned pipe into alignment during installation. Support pipe in such manner as to prevent stress on the valve. See Standard Detail 0201-0601-SD59 for a typical valve box installation detail.
- D. Provide valve marking posts, when authorized by the Owner, at locations designated by the Engineer and in accordance with detail drawings (included at the end of this Specification Section). Payment will be made per post in accordance with supplemental unit price schedule.

### 3.04 THRUST RESTRAINT

- A. Provide all plugs, caps, tees, and bends (both horizontal and vertical) with concrete thrust blocking and/or restrained joint pipe as represented on the Drawings, or specified in the Specification Special Conditions.
- B. Place concrete thrust blocking between undisturbed solid ground and the fitting to be anchored. Install the concrete thrust blocking in accordance with Specification Section 3300 and standard details provided. Locate the thrust blocking to contain the resultant thrust force while keeping the pipe and fitting joints accessible for repair, unless otherwise shown or directed.
- C. Provide temporary thrust restraint at temporary caps and plugs. Submit details of temporary restraint to the Engineer for approval.
- D. At connections with existing water mains where there is a limit on the time the water main may be removed from service, use metal harnesses of anchor clamps, tie rods and straps; mechanical joints utilizing set-screw retainer glands; or restrained push-on joints as permitted by Engineer. No restraining system can be installed without the approval of the Engineer. Submit details of the proposed installation to the Engineer for approval. For pipe up to 12 inches in size, use a minimum of two 3/4-inch tie rods. If approved for use, install retainer glands in accordance with the manufacturer's instructions. Material for metal harnessing and tie-rods shall be ASTM A36 or A307, as a minimum requirement.
- E. Protection of Metal Harnessing: Protect ties rods, clamps and other metal components against corrosion by hand application of petrolatum tape and by encasement of the entire assembly with 8-mil thick (12 mil thick in corrosive soils) loose polyethylene film in accordance with AWWA C105. Apply tape on all exposed tie rods prior to installing polyethylene.

### 3.05 TYPICAL INSTALLATION DETAILS

The list of Standard Details listed below are attached to the specification 01010.

**END OF SECTION**

**SECTION 15020****DISINFECTING PIPELINES****PART 1: GENERAL****1.01 SCOPE OF WORK**

Flush and disinfect all pipelines installed under this Contract if indicated in the summary of work. This would include furnishing the necessary labor, tools, transportation, and other equipment for the operation of valves, hydrants, and blowoffs during the chlorination. Install, and if directed remove, all chlorination taps required for disinfection. The cost of this work shall be included in the bid item for pipe installation. The disinfection will be performed under the supervision of Owner.

**1.02 WORK BY OWNER**

The Owner reserves the option to provide/furnish the chlorine and chlorination equipment. The Owner will furnish water for testing, flushing and disinfecting pipelines. The Owner will also perform bacteriological testing and may collect the sample.

**1.03 PROTECTION**

Chlorine disinfection and dechlorination shall be under the direct supervision of someone familiar with the physiological, chemical, and physical properties of the form of chlorine used. They shall be trained and equipped to handle any emergency that may arise. All personnel involved shall observe appropriate safety practices to protect working personnel and the public.

The forwards of AWWA Standards B300 and B301 contain information and additional reference material regarding the safe handling of hypochlorites and liquid chlorine. The Contractor shall familiarize himself with this information prior to performing any disinfection work.

**1.04 RELATED WORK**

Observe the precautions described in Specification Section 15000 to avoid contamination during installation of the pipeline.

**1.05 REFERENCES**

Refer to current AWWA Standard for Disinfecting Water Mains C651.

**PART 2: PRODUCTS****2.01 MATERIALS AND EQUIPMENT**

- A. Furnish liquid chlorine and injection equipment and/or calcium hypochlorite (HTH) as needed to disinfect all pipelines and appurtenances.

- B. Liquid chlorine contains 100% available chlorine and is packaged in steel containers, usually of 100 lb, 150 lb, or 1 ton net chlorine weight. Liquid chlorine is to be furnished in accordance with AWWA B301.
- C. Calcium hypochlorite is available in granular form or in approximately 5-g tablets, and contains approximately 65% available chlorine by weight and is employed in calculations used in this specification. The material should be stored in a cool, dry, and dark environment to minimize its deterioration. Do not use calcium hypochlorite intend for swimming pool disinfection, as this material (containing trichloroisocyanuric acid) has been sequestered and is extremely difficult to eliminate from the pipe after the desired contact time had been achieved.
- D. Calcium hypochlorite must conform to AWWA B300.

### **PART 3: EXECUTION**

#### **3.01 PREPARATION**

All pipelines shall be pressure and leak tested, flushed, and cleaned of debris and dirt prior to application of the disinfectant. Flushing shall continue until the volume in the newly installed main has turned over at least one time unless the Engineer determines that conditions do not permit the required volume to be safely discharged to waste.

#### **3.02 APPLICATION OF DISINFECTANT**

Methods to be used for disinfection are those detailed in ANSI/AWWA C651 Disinfecting Water Mains.

#### **3.03 WATER MAINS**

Three (3) methods of chlorination are described below. The third method, using tablets of hypochlorite, is only permitted by expressed approval of the Engineer and under no circumstance allowed for projects of 2000 feet or more. Otherwise, information in the forward of AWWA Standard C651 will be helpful in determining the best method to be used.

##### **A. Continuous Feed Method**

###### **1. Set up**

The continuous feed method consists of completely filling the main to remove all air pockets, flushing the completed main to remove particulates, and then refilling the main with chlorinated potable water. The potable water shall be chlorinated, so that after a 24-hour holding period in the main, there will be a free chlorine residual of not less than 10 mg/L in collected samples.

Chlorine can be applied in advance of preliminary flushing by swabbing joints with bleach or placing hypochlorite granules in the pipe in areas where contamination is suspected. In any such case, the contractor shall make sure and take appropriate action to make sure that the flushed water is dechlorinated.

Preliminary flushing. Prior to being chlorinated, fill the main to eliminate air pockets and flush to remove particulates. The flushing velocity in the main shall be not less than 2.5 fps unless the Engineer determines that conditions do not permit the required flow to be discharged to waste. Table 1 shows the rates of flow required to produce a velocity of 2.5 fps in pipes of various sizes.

NOTE: Flushing is no substitute for preventive measures during construction. Certain contaminants such as caked deposits resist flushing at any feasible velocity.

TABLE 1  
Required Flow and Openings to Flush Pipelines  
(40 psi Residual Pressure in Water Main)\*

Pipe Diameter (inches)	Flow required to produce 2.5 fps velocity in main (gpm)	Size of Tap. (inches)			Number of 2-1/2 in. Hydrant Outlets to Use
		1	1-1/2	2	
4	100	1	-	-	1
6	200	-	1	-	1
8	400	-	2	1	1
10	600	-	3	2	1
12	900	-	-	2	2
16	1600	-	-	4	2

\*With a 40 psi pressure in the main with the hydrant flowing to atmosphere, a 2½-inch hydrant outlet will discharge approximately 1,000 gpm and a 4½-inch hydrant outlet will discharge approximately 2,500 gpm.

† Number of taps on pipe based on discharging through 5 feet of galvanized iron pipe with one 90 degree elbow.

In mains of 24-inches or larger diameter, an acceptable alternative to flushing is to broom-sweep the main, carefully removing all sweepings prior to chlorinating the main.

## 2. Chlorinating the Main.

- a. Flow water from the existing distribution system or other approved source of supply at a constant, measured rate into the newly laid water main. In the absence of a meter, approximate the rate by placing a pitot gauge in the discharge or measuring the time to fill a container of known volume.
- b. At a point not more than 10 feet downstream from the beginning of the new main, dose the water entering the new main with chlorine fed at a constant rate such that the water will have not less than 25 mg/L free chlorine. Measure the chlorine concentration at regular intervals to ensure that this concentration is provided. Measure chlorine in accordance with the procedures described in the current edition of the

AWWA Manual M12 or of *Standard Methods for the Examination of Water and Wastewater*.

- c. Table 2 gives the amount of chlorine required for each 100 feet of pipe of various diameters. Solutions of 1 percent chlorine may be prepared with calcium hypochlorite and the table indicates the appropriate amount of the 65% calcium hypochlorite. If using other concentrations of calcium hypochlorite, a properly adjusted weight must be used. A 1 percent chlorine solution requires 1 pound of calcium hypochlorite in 8 gallons of water.

**TABLE 2**  
Chlorine and Hypochlorite Required to Produce 25 mg/L  
Concentration in 100 feet of Pipe by Diameter

Pipe Diameter inches	100 Percent Chlorine lbs	65 Percent Hypochlorite lbs	1 Percent Chlorine Solutions gallons
4	0.013	0.020,	0.16
6	0.030	0.046	0.36
8	0.054	0.083	0.65
10	0.085	0.131	1.02
12	0.120	0.185	1.44
16	0.217	0.334	2.60

- d. During the application of chlorine, position valves so that the strong chlorine solution in the main being treated will not flow into water mains in active service. Do not stop the chlorine application until the entire main is filled with heavily chlorinated water. Keep the chlorinated water in the main for at least 24 hours. During this time, operate all valves and hydrants in the section treated in order to disinfect the appurtenances. At the end of this 24-hour period, the treated water in all portions of the main shall have a residual of not less than 10 mg/L free chlorine.
- e. Hypochlorite solution may be applied to the water main with a gasoline or electrically powered chemical feed pump designed for feeding chlorine solutions. Feed lines shall be of such material and strength as to safely withstand the corrosion caused by the concentrated chlorine solutions and the maximum pressures that may be created by the pumps. Check all connections shall for tightness before the solution is applied to the main.
- f. If gaseous chlorine in solution is permitted by the Engineer and proposed by the contractor, the preferred equipment for the gas application employs a feed vacuum-operated chlorinator to mix the chlorine gas, in combination with a booster pump for injecting the chlorine gas solution water into the main to be disinfected. Direct feed chlorinators cannot be used. (A direct feed chlorinator is one which operates solely from the pressure in the chlorine cylinder.)

B. Slug Method

## 1. Setup

- a. The slug method consists of placing calcium hypochlorite granules in the main during construction; completely filling the main to eliminate all air pockets, flushing the main to remove particulates, and slowly flowing a slug of water containing 100 mg/L of free chlorine through the main so that all parts of the main and its appurtenances will be exposed to the highly chlorinated water for a period of not less than 3 hours.

## 2. Chlorinating the main.

- a. At the option of the OWNER, place calcium hypochlorite granules in the main during construction. The purpose of this procedure is to provide a strong chlorine concentration in the first flow of flushing water especially to fill annular spaces in pipe joints. Flush the main to eliminate air and remove particulates to include management of dechlorination and discharged water.
- b. At a point not more than 10 feet downstream from the beginning of the new main, dose the water entering the new main with chlorine fed at a constant rate such that the water will have not less than 100 mg/L free chlorine. Measure the chlorine concentration at regular intervals to ensure that this concentration is provided. Measure chlorine in accordance with the procedures described in the current edition of the AWWA Manual M12 or of *Standard Methods for the Examination of Water and Wastewater*. The chlorine shall be applied continuously and for a sufficient period to develop a solid column or "slug" of chlorinated water that will, as it moves through the main, expose all interior surfaces to a concentration of approximately 100 mg/L for at least 3 hours.
- c. The free chlorine residual shall be measured in the slug as it moves through the main. If at any time it drops below 50 mg/L, stop the flow, relocate the chlorination equipment to the head of the slug, and as flow is resumed, apply chlorine to restore the free chlorine in the slug to not less than 100 mg/L.
- d. As the chlorinated water flows past fittings and valves, operate related valves and hydrants so as to disinfect appurtenances and pipe branches.

C. Tablet Method

## 1. Setup

- a. The tablet method consists of adhering calcium tablets in the water main as it is being installed and then filling the main with potable water when installation is completed. This method may be used only if the pipes and appurtenances are kept clean and dry during construction and with permission by the Engineer for short main installations.

## 2. Chlorinating the Main –

- a. Placing of calcium hypochlorite tablets - *Placing of calcium hypochlorite tablets.* During construction, 5-g calcium hypochlorite tablets shall be placed in each section of pipe. Also, one such tablet shall be placed in each hydrant, hydrant branch, and other appurtenance. The number of 5-g tablets required for each pipe section shall be  $0.0012 d^2 L$  rounded to the next higher integer, where  $d$  is the inside pipe diameter, in inches, and  $L$  is the length of the pipe section, in feet. Table 1 shows the number of tablets required for commonly used sizes of pipe. The tablets shall be attached by a food-grade NSF approved adhesive. There shall be no adhesive on the tablet except on the broadside attached to the surface of the pipe and no adhesive applied or spilled on the pipe surface. Excess adhesive must be removed immediately using mechanical means or an NSF approved adhesive solvent. Attach all the tablets inside and at the top of the main, with approximately equal numbers of tablets at each end of a given pipe length. If the tablets are attached before the pipe section is placed in the trench, their position shall be marked on the section so it can be readily determined that the pipe is installed with the tablets at the top.

		Length of Pipe Section, ft (m)				
Pipe Diameter		13(4.0) or less	18(5.5)	20(6.1)	30(9.1)	40(12.2)
in.	(mm)	Number of 5-g Calcium Hypochlorite Tablets				
6	(150)	1	1	1	2	2
8	(200)	1	2	2	3	4
12	(300)	3	4	4	6	7
16	(400)	4	6	7	10	13

- b. *Filling and contact.* When installation has been completed, the main shall be filled with water at a rate such that water within the main will flow at a velocity no greater than 1 ft/s (0.3 m/s). Precautions shall be taken to ensure that air pockets are eliminated. This water shall remain in the pipe for at least 24 hours. If the water temperature is less than 41°F (5°C), the water shall remain in the pipe for at least 48 hours.

### 3.04 DISPOSAL OF HEAVILY CHLORINATED WATER

- A. Do not keep heavily chlorinated water in contact with pipe for more than 48 hours after the applicable retention period. In order to prevent damage to the pipe lining or corrosion damage to the pipe itself, flush the heavily chlorinated water from the main fittings, valves, and branches until chlorine measurements show that the concentration in the water leaving the main is no higher than that generally prevailing in the system or is acceptable for domestic use. Take all steps necessary to dechlorinate water where required per section 3.04B and

3.04C below. Contact the local sewer department to arrange for disposal of the heavily chlorinated water to the sanitary sewer if applicable.

- B. Neutralize the chlorine residual of the water being disposed of by treating with one of the chemicals listed in Table 3. Select an alternative disposal site if a sanitary sewer system is unavailable for disposal of the chlorinated water.
- C. The proposed alternative disposal site shall be inspected and approved of by the Engineer. Apply a reducing agent to the chlorinated water to be wasted to completely neutralize the chlorine residual remaining in the water. (See Table 3 for neutralizing chemicals. Do not overdose neutralizing chemicals as this may result in adverse environmental impacts. Only dose the amount required to neutralize the amount of chlorine present). Contact federal, state and local regulatory agencies, where necessary, to determine special provisions for the disposal of heavily chlorinated water.

Table 3  
Pounds of chemicals required to neutralize various  
Residual chlorine concentrations in 100,000 gallons of water.

Residual Chlorine Concentration <u>mg/L</u>	Sulfur Dioxide <u>(SO<sub>2</sub>)</u>	Sodium Bisulfite <u>(NaHSO<sub>3</sub>)</u>	Sodium Sulfite <u>(Na<sub>2</sub>SO<sub>3</sub>)</u>	Sodium Thiosulfate <u>(Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> · 5H<sub>2</sub>O)</u>	Ascorbic Acid <u>(C<sub>6</sub>O<sub>8</sub>H<sub>6</sub>)</u>
1	0.8	1.2	1.4	1.2	2.1
2	1.7	2.5	2.9	2.4	4.2
10	8.3	12.5	14.6	12.0	20.9
50	41.7	62.6	73.0	60.0	104.0

- D. Test for chlorine residual throughout the disposal process to be sure that the chlorine is neutralized
- E. Submit a plan of disposal of flushed water to the Engineer for approval

### 3.05 BACTERIOLOGICAL TESTING

- A. After final flushing and before the water main is placed in service, the first of two consecutive sets of acceptable samples can be collected from the new main. The second set of samples must be taken at least 24 hours after the first set of samples. The main should not be flushed between collection of the first and second set of samples except to clear the sample site to collect the second sample. At least one set of samples shall be collected from every 1,200 feet, of the new water main, plus one set from the end of the line and at least one set from each branch when possible or as required by regulatory requirements.
- B. Samples shall be collected by a person knowledgeable in collecting samples for bacteriological sampling or arrange for the Owner to collect the sample. Coordinate with Owner and submit samples to the Owner for testing of bacteriological (chemical and physical) quality. Testing will be in accordance

with Standard Methods of the Examination of Water and Wastewater. Samples shall show the absence of coliform organisms; and the presence of a chlorine residual. Samples shall also be tested for turbidity, pH, and standard heterotrophic plate count (HPC). HPC levels must be consistent with levels normally found in the distribution system to which the new main is connected.

- C. Bacteriological tests must show complete absence of coliforms and acceptable HPCs. If tests show the presence of coliform or unacceptable HPCs, perform additional flushing and disinfection of the pipeline until acceptable tests are obtained, all at no cost to the Owner. The Contractor will not be charged for the additional testing performed by the Owner.

### 3.06

### RETESTING AND TESTING SOURCE WATER

- A. At the time of initial flushing the main to remove material and test for air pockets, Contractor may request the Owner to continue flushing until the desired chlorine residual is met at the discharge point. Notification must be provided in advance and the Contractor shall be prepared to test for chlorine at intervals of no more than five minutes as the water clears. This will provide the Contractor with some assurance that the source water is chlorinated.
- B. If the subsequent tests for bacteriological contamination conducted by the Contractor fail, the Contractor may request the Owner to continue flush from the source water into the new pipe system until a chlorine residual is found at the discharge point. Notification must be provided in advance and the Contractor shall be prepared to test for chlorine at intervals of no more than five minutes as the water clears. The operation of all existing system valves shall be by the Owner at the Contractor expense and the discharge point must be opened prior to opening existing valves to avoid contamination. This will provide the Contractor with some assurance that the source water is chlorinated for subsequent tests.

### END OF SECTION

## SECTION 15025

### CLEANING PIPELINES

#### PART 1: GENERAL

##### **1.01 SCOPE OF WORK**

Clean the pipelines installed under these Contract Documents using foam pigs, swabs, or "go-devils", as described herein, whenever normal flushing will not sufficiently remove dirt and debris that was introduced during construction.

##### **1.02 GENERAL**

Normal pipeline flushing is often inadequate to remove all the entrapped air, loose debris, and other objects that may have been left in the main during installation. In such cases, use polyurethane foam pigs and/or polyurethane hard foam swabs to remove all foreign matter from the pipeline (i.e. "pig" the pipeline). Clean the pipeline per the requirements of this Specification Section prior to testing and disinfecting the main.

##### **1.03 RELATED WORK**

See Specification Section 15000.3.02 - Construction Methods to Avoid Contamination and Specification Section 15020.3.01 - Preparation (prior to disinfecting pipelines).

##### **1.04 PROTECTION DURING FLUSHING AND CLEANING**

Coordinate with Engineer and Owner before flushing to ensure that an adequate volume of flushing water is available, at sufficiently high pressure. Determine if the water can be disposed of safely. Notify the Owner, Engineer, and the following prior to flushing, or cleaning:

- a. Fire Department
- b. Other utilities, such as gas, electric and telephone companies, who may have underground facilities in the area.
- c. Customers who may be inconvenienced by reduced pressure or dirty water.

Coordinate with Owner to isolate the section to be flushed from the operating distribution system. Close valves slowly to prevent water hammer. Open the fire hydrant or blow-off valve slowly until the desired flow rate is obtained. When flushing from a dry barrel fire hydrant, use the gate valve upstream of the hydrant for throttling purposes. Open the hydrant valve fully to prevent water from escaping into the ground through the fire hydrant barrel drain.

Protect the work staff and the public during operation of hydrants and valves. Keep children away from the flow of flushing water. Where practical employ energy

dissipators to help avoid damage to property and the flooding of streets. The safety considerations also apply to main cleaning. See General Conditions Article 6.

## **PART 2: PRODUCTS**

### **2.01 MATERIALS AND EQUIPMENT**

Furnish the foam cleaning plugs (swabs or pigs), labor, and equipment as needed to pig all pipelines. Furnish all materials required for the expulsion of air and other debris from pipelines. Do not use of pipe cleaning plugs which utilize Bristles, wire brushes, carbide abrasives, steel studs, or any other Type abrasive unless specifically approved by the Engineer. Consult a manufacturer of pipe cleaning plugs, such as Knapp Polly Pig (Houston, Texas), to determine the type and size of cleaning plug best suited for the application. Two types of plugs shall be considered and are described as follows:

#### **A. Swabs**

Swabs used for cleaning mains shall be made of polyurethane foam. This foam has a density of 1 to 2 pounds per cubic feet. Swabs shall be purchased from commercial manufacturers of swabs for pipes. Both soft and hard grade foam swabs are available. New mains are typically cleaned with hard foam swabs.

Use swabs cut into cubes and cylinders slightly larger than the size of the pipe to be cleaned. Cubes one inch larger in dimension than the nominal diameter of the pipe being cleaned have worked well for cleaning pipes up to 12-inches in diameter. For mains greater than 12-inches in diameter, the swab diameter must be considered individually for each operation. For new mains, swabs 3-inches larger than the pipe diameter have worked well. Swabs for the larger mains are usually 1-1/2 times the diameter in length.

#### **B. Pigs**

The other type of cleaning plug available is called a pig. Pigs, if used, shall be commercially manufactured for the specific purpose of cleaning pipes. They shall be made of polyurethane foam weighing 2 to 15 lb./cu.ft. Pigs are bullet shaped and come in various grades of flexibility and roughness. Pigs are typically 1/4 -inch to 1/2-inch larger in diameter than the pipe to be cleaned.

## **PART 3: EXECUTION**

### **3.01 PLUG INSTALLATION AND REMOVAL**

Furnish all equipment, material, and labor to satisfactorily expose cleaning wyes, or other entry or exit points. Remove cleaning wye covers, etc., as required by the Engineer to insert the plugs into the mains.

If approved by the Engineer, stripped fire hydrants, air valves and blow-offs may serve as entry and exit points for smaller sized mains. The Engineer will examine these

appurtenances and the connecting laterals to ensure that adequate openings exist through which a plug may be launched.

If these appurtenances are used, a special launcher is required to ease the insertion and launching of the plug. If available, a pressurized water source such as a fire hydrant can be used to launch the plug. If water from the system is not available nearby, use a water truck with pump.

If hydrants are used as entry and/or exit points, remove the internal mechanisms and plug the drains under the supervision of the Engineer. Insert the plug and replace the cap with a special flange with a 2-1/2-inch fitting. Connect the 2-1/2-inch fitting, with a pressure gauge and valve, to a pressurized water source. After closing the last valve isolating the section to be cleaned, open the hydrant supply valve. Propel the swab or pig into the main by opening the exit valve.

In mains greater than 8-inches, wyes shall be used at the entry and exit points. Fabricate the wye section one size larger than the main to ease the insertion and extraction of the plug. The use of wyes, as with the previously mentioned appurtenances, requires an outside source of pressurized water for launching. Cap the wye with a flange with a 2 to 6 inch fitting for connecting to the pressurized water source.

Many pigs are harder to insert into a pipe since they are less flexible than swabs,. Other methods acceptable to insert pigs include:

1. winching with a double sling,
2. winching with a rope attached to the pig,
3. compression with a banding machine prior to insertion,  
and
4. the use of a specially designed tapered steel pipe which is removed after use.

During swab or pig installation, leave as much water as possible in the main to be cleaned. The water suspends the material being removed from the pipe and minimizes the chance of the material forming a solid plug. Water in the pipe also keeps the swab or pig from traveling through the pipe at excessive rates. If swabs or pigs travel too fast, they will remove less material and wear more rapidly.

At the exit point or blow-off, install a wye long enough to house the swab or pig. Attach temporary piping to the end cap to allow the drainage of the water.

Take precautions to prevent backflow of purged water into the main when the cleaning plug exits through a dead end main. This can be accomplished by installing mechanical joint bends and pipe joints to provide a riser out of the trench. Additional excavation of the trench may serve the same purpose.

### **3.02 PRE-CLEANING PROCEDURES**

- A. Prepare a written cleaning plan for the Engineer's review,

B. Suggested pre-cleaning procedures include:

1. Identify mains to be cleaned on a map. Mark the location of the entry, water supply, exit points, any blow-offs to be used, valves to be closed, and the path of the swab or pig.
2. Under the Engineer's supervision and with Owner staff as required, inspect and operate all valves and hydrants to be used in the cleaning operation to ensure their correct operation and a tight shutdown.
3. Check location and type of hydrants, launch and exit location, and blow-offs to be used. Make blow-off tap connections, if necessary.
4. The Owner will notify customers served by the main to be cleaned that their water will be off for a specified period of time on the day of the cleaning.
5. The Owner will identify customers who may require temporary services during the main cleaning operation. The Contractor shall provide the temporary connections.
6. Determine the number and size of plugs to be used.

### 3.03 CLEANING PROCEDURE

Clean the pipeline using the following procedures and the Contractor's cleaning plan, as approved by the Engineer.

A. Swab Cleaning Procedures

1. Open the water supply upstream of the swab. Throttle the flow in the main at the discharge (plug exit) point so that the swab passes through the main at a speed of 2 to 4 fps. (At this velocity, swabs will effectively clean pipes for distances of up to 4,000 feet before disintegrating to a size smaller than the main.) Use pitot gauges at the exist hydrant or blow-off to estimate the flowrate in the main.
2. Note the time of entry of the swab into the main and estimate its time of exit. If the swab does not reach the exit point in the estimated time plus ten minutes, then a blockage has probably occurred. Reverse the flow in the main and note the time required for the swab to reach the original entry point. From the return travel time, estimate the location of the blockage. The Engineer may require the use of a swab containing a transmitter to accurately locate the blockage.

3. Swab repeatedly as needed. Stop swabbing when the water behind the swab emerging at the exit clears up within one minute. Account for all swabs inserted into the main.
4. After the last swab has been recovered, flush the main to remove swab particles. This may require up to an hour of flushing.

B. Pig Cleaning Procedures

1. Remove all air valves along the line. Insure that each isolating valves to the air release valve are completely closed. Operate system to prevent undesired build up of air while air release valves are out of service.
2. If the pig is inserted directly into the main, set it in motion by opening the upstream gate valve and a downstream fire hydrant or blow-off valve (usually the valve on the capped end at the exit point). If the pig is launched from a wye, fire hydrant, or other appurtenance, use an external pressurized water source to inject the pig into the main as described in Specification Section 3.01.
3. Once the pig is launched, control its speed by throttling the discharge at a downstream fire hydrant or blow-off. Operate pigs at the typical speed of 1 fps. This slow speed will help prevent pressure surges when the pig passes through undersized valves, enters smaller pipes, or turns through tees or crosses. Speeds of up to 2 fps. can be used on straight runs with no restrictions or sharp turns.
4. Make sufficient passes of the pig to obtain thorough cleaning. Two pigs may be used in tandem to save time and water. Sufficient cleaning is established when the water discharging after the pig becomes clear within one minute.

**3.04 POST CLEANING PROCEDURE**

After successful cleaning; test, flush, and disinfect the main in accordance with applicable sections of these Specifications.

**END OF SECTION**

**SECTION 15030****PRESSURE AND LEAKAGE TESTS****PART 1: GENERAL****1.01 SCOPE OF WORK**

Test all piping, valves, and appurtenances installed under these Contract Documents. Testing shall be performed concurrent with installation. Do not install more than 1,200 feet of pipe without being tested, unless approved by the Engineer.

**1.02 SUBMITTALS**

Prepare and submit schedules and procedures to the Engineer for testing of all parts of the water main installed in accordance with these Contract Documents. Submit the schedule at least seven days prior to any testing.

**PART 2: PRODUCTS****2.01 EQUIPMENT**

Furnish the pump, pipe connections, and all necessary apparatus for the pressure and leakage tests including gauges and metering devices. The Owner reserves the option to furnish the gauges and metering devices for the tests. Excavate, backfill, and furnish all necessary assistance for conducting the tests.

**PART 3: EXECUTION****3.01 GENERAL**

- A. Perform hydrostatic pressure and leak tests in accordance with AWWA C600, Section 4 - Hydrostatic Testing after the pipe or section of pipe has been laid, thrust blocking cured (min. 5 days), and the trench is completely or partially backfilled. Where practical, testing shall be performed fully isolated from the active distribution system.
- B. The Contractor may, at his option, completely backfill the trench or partially backfill the trench over the center portion of each pipe section to be tested. However, the Engineer may direct the Contractor to completely backfill the trench if local traffic or safety conditions require.
- C. For system operating pressures of 200 psi or less, perform the hydrostatic test at a pressure of no less than 100 psi above the normal operating pressure without exceeding the rating of the pipe and appurtenances. For system operating pressures in excess of 200 psi, perform the hydrostatic test at a pressure that is 1.5 times the normal operating pressure, but no more than the design rating of the pipe and appurtenances.

- D. Valves shall not be operated in either direction at a differential pressure exceeding the rated valve working pressure. A test pressure greater than the rated valve working pressure can result in trapped test pressure between the gates of a double-disc gate valve. For tests exceeding the rated valve working pressure, the test setup should include a provision, independent of the valve, to reduce the line pressure to the rated valve working pressure on completion of the test. The valve can then be opened enough to equalize the trapped pressure with the line pressure, or the valve can be fully opened if desired.
- E. The test pressure shall not exceed the rated working pressure or differential pressure of the valves when the pressure boundary of the test section includes closed, resilient-seated gate valves or butterfly valves.
- F. Attach a tapping sleeve and valve assembly to the main. Pressure test the assembly prior to making the tap. The required test pressure shall be determined in the same manner as for pipe. The test is acceptable if there is no pressure drop in 15 minutes at test pressure.

### 3.02 FILLING AND TESTING

- A. Slowly fill each segregated section of pipeline with water ensuring that all air is expelled. Extreme care must be taken to ensure that all air is expelled during the filling of pipe. The line shall stand full of water for at least twenty-four hours prior to testing to allow all air to escape. If necessary, tap the main at points of highest elevation to expel air as the pipe is filled. Remove the corporation stops and plug the taps after successfully filling the pipeline and expelling all air as approved by the Engineer.
- B. Apply the specified test pressure, measured at the point of lowest elevation, using a pump connected to the pipe in a manner satisfactory to the Engineer. If the elevation of the high point of the pipeline being tested is such that the pressure during testing will be below 85% of the required test pressure, the Engineer will require a separate test to be performed on this section of pipeline. In lieu of a separate test, the test pressure measured at the lowest elevation may be increased, within the pressure rating of the pipeline material, such that the resulting pressure at the highest point exceeds 85% of the required test pressure. The test will be conducted for at least two hours at the required test pressure  $\pm$  5 psi.
- C. Conduct a leakage test concurrently with the pressure test. Leakage is defined as the volume of the water that must be supplied into the newly laid pipeline to maintain pressure within 5 psi of the test pressure after it is filled and purged of air. Measure the volume of water using a calibrated container or meter.
- D. No pipeline installation will be accepted by the Engineer if the leakage is greater than that shown in the following table:

## END OF SECTION

E. Should any test disclose damaged or defective materials or leakage greater than that permitted, the Contractor shall, at Contractor's expense, locate and repair and/or replace the damaged or defective materials. Materials used for repair must be approved by the Engineer and meet the specifications. Repeat the tests until the leakage is within the permitted allowance and is satisfactory to the Engineer.

\*If the pipeline under test contains sections of various diameters, the allowable leakage will be the sum of the computed leakage for each size. The table has been generated from the formula:  $L = \frac{S \cdot D \cdot P^{1/2}}{148,000}$  where  $L$  is the allowable leakage in gallons per hour,  $S$  is the length of pipe in feet,  $D$  is the nominal pipe diameter in inches, and  $P$  is the test pressure in psig.

Nominal Pipe Diameter - in.	4	6	8	10	12	14	16	18	20	24	30	36	42	48	Avg. Test Pressure $p_{in}$
100	0.27	0.41	0.54	0.68	0.81	0.95	1.08	1.22	1.35	1.62	2.03	2.43	2.84	3.24	100
125	0.30	0.45	0.60	0.76	0.91	1.06	1.21	1.36	1.51	1.81	2.27	2.72	3.17	3.63	125
150	0.33	0.50	0.66	0.83	0.99	1.16	1.49	1.66	1.99	2.48	2.98	3.48	3.97	4.47	150
175	0.36	0.54	0.72	0.89	1.07	1.25	1.43	1.61	1.79	2.15	2.68	3.22	3.75	4.29	175
200	0.38	0.57	0.76	0.96	1.15	1.34	1.53	1.72	1.91	2.29	2.87	3.44	4.01	4.59	200
225	0.41	0.61	0.81	1.01	1.22	1.42	1.62	1.82	2.03	2.43	3.04	3.65	4.26	4.86	225
250	0.43	0.64	0.85	1.07	1.28	1.50	1.71	1.92	2.14	2.56	3.21	3.85	4.49	5.13	250
275	0.45	0.67	0.90	1.12	1.34	1.57	1.79	2.02	2.24	2.69	3.36	4.03	4.71	5.38	275
300	0.47	0.70	0.94	1.17	1.40	1.64	1.87	2.11	2.34	2.81	3.51	4.21	4.92	5.62	300
350	0.51	0.76	1.01	1.26	1.52	1.77	2.02	2.28	2.53	3.03	3.79	4.55	5.31	6.07	350
400	0.54	0.81	1.08	1.35	1.62	1.89	2.16	2.43	2.70	3.24	4.05	4.86	5.68	6.49	400
450	0.57	0.86	1.15	1.43	1.72	2.01	2.29	2.58	2.87	3.44	4.30	5.16	6.02	6.88	450

Allowable Leakage per 1000 ft. of Pipeline\*---gph

## SECTION 15106

### DUCTILE IRON PIPE AND FITTINGS (Contractor Furnished)

#### **PART 1: GENERAL**

##### **1.01 COORDINATION OF WORK**

Connection to existing pipelines may require shutdown of Owner facilities. Closely coordinate construction work and connections with the Owner through the Engineer. The Engineer, in consultation with the Owner, may select the time for connection to existing pipelines, including Saturdays, Sundays, or holidays, which, in the opinion of the Engineer, will cause the least inconvenience to the Owner and/or its customers. Make such connections at such times as may be directed by the Owner, at the Contract prices, with no claim for premium time or additional costs.

##### **1.02 RELATED WORK**

Piping - General Provisions - Specification Section 15000

##### **1.03 SUBMITTALS**

Submit shop drawings and manufacturer's literature for all Contractor supplied materials promptly to the Engineer for approval in accordance with Specification Section 1300.

##### **1.04 REFERENCES**

Refer to current AWWA Standards:

AWWA C104 - American National Standard for Cement-Mortar Lining for Ductile-Iron Pipe and Fittings for Water

AWWA C105 - American National Standard for Polyethylene Encasement for Ductile-Iron Pipe Systems

AWWA C110 - American National Standard for Ductile-Iron and Gray-Iron Fittings, 3-inch through 48-inch, for Water and Other Liquids

AWWA C111 - American National Standard for Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings

AWWA C115 - American National Standard for Flanged Ductile-Iron Pipe with Ductile-Iron or Gray-Iron Threaded Flanges

AWWA C116 - American National Standard for Protective Fusion-Bonded Epoxy Coatings for the Interior and Exterior Surfaces of Ductile-Iron and Gray-Iron Fittings for Water Supply Service

AWWA C150 - American National Standard for the Thickness Design of Ductile-Iron Pipe

AWWA C151 - American National Standard for Ductile-Iron Pipe, Centrifugally Cast, for Water

AWWA C153 - American National Standard for Ductile-Iron Compact Fittings, 3-inch through 24-inch and 54-inch through 64-inch, for Water Service

AWWA C600 -- AWWA Standard for Installation of Ductile-Iron Water Mains and Their Appurtenances

## **PART 2: PRODUCTS**

Research has documented that certain elastomers (such as those used in gasket material) may be subject to permeation by lower-molecular weight organic solvents or petroleum products. Products supplied under this Specification Section assume that petroleum products or organic solvents will not be encountered. If during the course of pipeline installation the Contractor identifies, or suspects the presence of petroleum products or any unknown chemical substance, notify the Engineer immediately. Stop installing piping in the area of suspected contamination until direction is provided by the Engineer.

### **2.01 PIPE MATERIAL**

#### **A. General**

Ductile iron pipe shall conform to the latest specifications as adopted by the American National Standards Institute, Inc., (ANSI) and the American Water Works Association (AWWA). Specifically, ductile iron pipe shall conform to AWWA Standard C151.

The pipe or fitting exterior shall be coated with a bituminous coating in accordance with AWWA Standard C151. The pipe or fitting interior shall be cement mortar lined and seal coated in compliance with the latest revision of AWWA Standard C104.

#### **B. Quality**

Pipe and fittings shall meet the following minimum quality requirements by conforming to the following:

1. AWWA C105 / ANSI A21.5 Cement-Mortar Lining for Ductile-Iron Pipe and Fittings for Water Polyethylene Encasement for Ductile-Iron Pipe Systems
2. AWWA C110 / ANSI A21.10 Ductile Iron and Gray Iron Fittings, 3 NPS through 48 NPS for Water AWWA C111 / ANSI A21.11 Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings
3. AWWA C115 / ANSI A21.15 Flanged Ductile-Iron Pipe with Ductile-Iron or Gray-Iron Threaded Flanges
4. AWWA C116 / ANSI A21.16 Protective Fusion-Bonded Epoxy Coating for the Interior and Exterior Surfaces of Ductile-Iron and Gray-Iron Fittings for Water Supply Service
5. AWWA C150 / ANSI A21.50 Thickness Design of Ductile-Iron Pipe

6. AWWA C151 / ANSI A21.51 Ductile-Iron Pipe, Centrifugally Cast, for Water
7. AWWA C153 / ANSI A21.53 Ductile-Iron Compact Fittings, 3 NPS through 24 NPS and 54 NPS through 64 NPS, for Water Service

Ductile iron water pipe and fittings will be accepted on the basis of the Manufacturer's certification that the material conforms to this specification. The certification for iron fittings shall list a fitting description, quantity, bare fitting weight and source, (AWWA Standard C110, C153 or Manufacturer, if fitting is not listed in either standard). The certification shall accompany the material delivered to the project site. The Owner reserves the right to sample and test this material subsequent to delivery at the project site. If foreign manufactured fittings are provided, then the Contractor is obligated to notify the Engineer with a submittal and provide the necessary documentation to satisfy the Engineer and the Owner that the materials provided meet the specified AWWA standards and, among other documentation that may be required, provide certificates of compliance on the component supplied.

#### C. Pipe Class

The pressure class of pipe to be furnished shall be in accordance with Table 1 and the notes listed below.

**Table 1**  
**MINIMUM RATED WORKING PRESSURE**  
**FOR DUCTILE IRON PIPE MANUFACTURED IN ACCORDANCE**  
**WITH AWWA Standard C151**

<u>Pipe Size (Inch)</u>	Pressure
	<u>Class</u>
6	350
8	350
12	350
16	300
20	300
24	250

#### NOTES:

1. Larger pipe sizes up to 54-inch can be installed as pressure Class 200 with cover up to nine (9) feet and an operating pressure of 200 psi, where approved by the Engineer. When trench depths exceed fifteen (15) feet for pipe sizes of 16-inch or larger, the Engineer shall direct the Contractor on the proper class pipe to use.
2. The noted pressure class is adequate to support 3/4 and 1-inch corporation stops. Use a full saddle for larger taps (e.g., air relief valves or larger corporations) due to limited wall thickness.
3. There are special conditions where a larger wall thickness is required. The Engineer shall direct the Contractor on the proper pressure class pipe to use in specific instances; e.g. at treatment plant or booster station sites where frequent excavation can be anticipated in the vicinity of pipe, where

the pipeline is laid on a river channel bottom to prevent external damage to the pipe and minimize the potential for costly pipe replacement, etc.

#### D. Testing

Perform a hydrostatic test of all pipe and appurtenances as required by AWWA Standard C151 and Specification Section 15030.

#### E. Joints

##### 1. Mechanical and Push-On

Mechanical and push-on joints including accessories shall conform to AWWA Standard C111.

##### 2. Flanged

Flanged joints shall conform to AWWA Standard C110 or ANSI B16.1 for fittings and AWWA Standard C115 for pipe. Do not use flanged joints in underground installations except within structures.

Furnish all flanged joints with 1/8-inch thick, red rubber or styrene butadiene rubber gaskets. The bolts shall have American Standard heavy unfinished hexagonal head and nut dimensions all as specified in American Standard for Wrench Head Bolts and Nuts and Wrench Openings (ANSI B18.2). For bolts of 1-3/4-inches in diameter and larger, bolt studs with a nut on each end are recommended. The high-strength, low-alloy steel for bolts and nuts shall have the characteristics listed in Table 6 of AWWA Standard C111. Exposed bolts and nuts in aggressive soils shall be Xylan or FluoroKote #1.

##### 3. Restrained Joint Pipe

Restrained joints for pipes shall be of the boltless push-on type which provides joint restraint independent of the joint seal. Restrained push-on joints allowed for pipe only shall have accessories conforming to AWWA Standard C111. Restrained system shall be suitable for the following minimum working pressures:

<u>Size (inch)</u>	<u>Pressure (psi)</u>
Less than 20"	350
20"	300
24"	250
30" - 64"	200

#### F. Suppliers

Suppliers acceptable to American Water are

1. United States Pipe & Foundry Co.  
1101 East Pearl Street  
Burlington, NJ 08016

2. Griffin Pipe Products Company  
1100 West Front Street  
Florence, NJ 08518
3. McWane Cast Iron Pipe Co.  
P. O. Box 607  
Birmingham, AL 35201
4. American Cast Iron Pipe Company  
2916 16h Street North  
Birmingham, AL 35207

## 2.02 FITTINGS

### A. Ductile Iron Fittings

Standard fittings shall be ductile iron conforming to AWWA Standard C110. Compact ductile iron fittings shall meet the requirements of AWWA Standard C153.

#### 1. Working Pressures

Fittings shall be suitable for the following working pressures unless otherwise noted in AWWA Standard C110 or C153:

<u>Size</u>	Pressure (psi)	
	Compact Fittings <u>Ductile Iron</u>	Standard Fittings <u>Ductile Iron</u>
3" - 24"	350	250 , 350 (with special gaskets)
30" - 48"	250	250
54" - 64"	150	N/A

The use of standard ductile iron fittings having a 250 psi pressure rating with ductile iron pipe (having a rating of 350 psi) is not permitted except by the expressed written approval by the Engineer.

#### 2. Coating and Lining

The fittings shall be coated on the outside with a petroleum asphaltic coating in accordance with AWWA Standard C110 or fusion coated epoxy in accordance with AWWA Standard C116 and lined inside with cement-mortar and seal coated in accordance with AWWA Standard C104 or fusion coated epoxy in accordance with AWWA Standard C116.

### B. Suppliers acceptable to American Water are

1. (Sigma through) United States Pipe & Foundry Co.  
1101 East Pearl Street  
Burlington, NJ 08016

2. (Tyler Union –domestic only)  
McWane Cast Iron Pipe Co.  
P. O. Box 607  
Birmingham, AL 35201
3. American Cast Iron Pipe Company  
2916 16h Street North  
Birmingham, AL 35207

B. Joints

1. Mechanical and Push-On

Mechanical and push-on joints including accessories shall conform to AWWA Standard C111. Anti-Rotation T-Bolts shall be used on mechanical joints shall be of domestic origin, high strength, low alloy steel bolts only, meeting the current provisions of American National Standard ANSI/AWWA C111/A21.1-90 for rubber gasket joints for cast iron or ductile iron pipe and fittings. Bolt manufacturer's certification of compliance must accompany each shipment. T-bolts shall be Xylan or FluoroKote #1, (corrosion resistant) to handle corrosive conditions on any buried bolts.

2. Flanged

Flanged joints shall meet the requirements of AWWA Standard C115 or ANSI B16.1. Do not use flanged joints in underground installations except within structures. Furnish all flanged joints with a minimum 1/8-inch, thick red rubber or styrene butadiene rubber gasket. The bolts shall have American Standard heavy unfinished hexagonal head and nut dimensions all as specified in ANSI B18.2. Xylan or FluoroKote #1 Hex Bolts (corrosion resistant) to handle corrosive conditions shall be used on any buried flanged bolts. Flange gaskets shall be rubber in composition; paper gaskets are not permitted.

Bolts and nuts shall be threaded in accordance with ASME/ANSI B1.1, Unified Inch Screw Threads (UN and UNR Thread Form) class 2A external and class 2B internal. For bolts of 1-3/4-inches in diameter and larger, bolt studs with a nut on each end are recommended. Material for bolts and nuts shall conform to ASTM A307, 60,000 PSI Tensile Strength, Grade B, unless otherwise specified. Bolt manufacturer's certification of compliance must accompany each shipment.

### 3. Restrained

Restrained joints for valves and fittings shall be of the boltless push-on type which provides joint restraint independent of the joint seal. Field Lok gaskets are not permitted on valves or fittings. Restrained push-on joints allowed for pipe only shall have accessories conforming to AWWA Standard C111. Restrained system shall be suitable for the following minimum working pressures:

<u>Size</u>	<u>Pressure (psi)</u>
Less than 20"	350
20"	300
24"	250
30" - 64"	250

Where adjacent fittings are to be placed (as in a mechanical joint hydrant tee and a mechanical joint hydrant valve), the use of a suitably sized Foster adaptor is permitted to facilitate restraint between the fittings.

## **PART 3: EXECUTION**

### 3.01 INSTALLATION

Follow the provisions of Specification Section 15000 and 02210 in addition to the following requirements:

#### A. Push-On Joints

Clean the surfaces that the gasket will contact thoroughly, just prior to assembly using a bacteria free solution (bleach, potable water or NSF approved material). Insert the gasket into the groove in the bell. Apply a liberal coating of special lubricant to the gasket and the spigot end of the pipe before assembling the joint. Center the spigot end in the bell and push home the spigot end.

#### B. Mechanical Joints

Clean and lubricate all components with soapy water prior to assembly. Slip the follower gland and gasket over the pipe plain end making sure that the small side of the gasket and lip of the gland face the bell socket. Insert the plain end into socket. Push gasket into position with fingers. Seat gasket evenly. Slide gland into position, insert bolts, and tighten nuts by hand. Tighten bolts alternately (across from one another) to the recommended manufacturing rating or if not provided, to the following normal torques:

<u>Bolt Size</u>	<u>Range of Torque In Foot-Pounds</u>
5/8"	40 - 60
3/4"	60 - 90
1"	70 - 100

1-1/4" 90 - 120

After field installation, all bolts shall receive petrolatum tape or petroleum wax protection or other approved coating material. Protection shall be applied before applying polywrap per specification 15131.

**C. Restrained Joints**

**1. Ball and Socket**

Assemble and install the ball and socket joint according to the manufacturer's recommendations. Thoroughly clean and lubricate the joint. Check the retainer ring fastener.

**2. Push-On**

Assemble and install the push-on joint according to the manufacturer's recommendations. Thoroughly clean and lubricate the joint. Check the retainer ring fastener.

Protect pipe from damage from the jacking device (backhoe bucket, pipe jack, etc.) when "pushing home" any pipe by using wood or other suitable (non metallic) material.

**(3) Mechanical Joint**

Assemble and install the mechanical joint according to the manufacturer's recommendations. Thoroughly clean and lubricate the joint. Use approved restrained joint device on fittings and valves where required and approved for use by Engineer.

**D. Pipe Protection**

Protect pipe from damage from the jacking device (backhoe bucket, pipe jack, etc.) when "pushing home" any pipe. Wood or other suitable material (non metallic) shall be used to push home the pipe.

**E. Gaskets**

Gaskets shall be as provided or recommended by the manufacturer and satisfy AWWA standard C111 in all respects. As noted in the products section of this specification, some gasket materials are prone to permeation of certain hydrocarbons which may exist in the soil (see part 2). Under these conditions and at the Engineer's discretion require contractor to provide FKM (Viton, Flourel) gasket material in areas of concern.

**END OF SECTION**

**SECTION 15131****PIPING SPECIALTIES**  
(Contractor Furnished)**PART 1: GENERAL****1.01 SCOPE**

This Specification Section covers the furnishing and installation of miscellaneous piping specialties as shown on the Drawings or as required to fulfill the intent of the project.

**PART 2: PRODUCTS****2.01 POLYETHYLENE ENCASEMENT**

- A. Polyethylene encasement shall conform to AWWA Standard C105. The polyethylene film supplied shall be translucent and blue in color (or as specified in section 01011) and distinctly marked (at minimum 2 foot intervals) with the following information:
  1. manufacturer's name (or trademark),
  2. year manufactured,
  3. minimum film thickness and material type (LLDPE or HDCLPE),
  4. range of nominal pipe diameter size
  5. ANSI/AWWA C105/A21.5 (compliance)
  6. A warning "WARNING-CORROSION PROTECTION-REPAIR ANY DAMAGE
  7. labeled "WATER"
- B. Tape shall be polyethylene compatible adhesive and a minimum of 1.5" wide. Shall be Scotchwrap #50, Fulton #355, or Polyken #900.
- C. Store all polyethylene encasement out of the sunlight. Exposure of wrapped pipe should be kept to a minimum.
- D. Suppliers of polyethylene encasement include .....

**2.02 VALVE BOXES**

- A. All valves shall be provided with valve boxes of a design approved by the Engineer. Valve boxes shall be of the standard, adjustable, cast iron extension type, multiple piece, 5-1/4-inch shaft, screw type, and of such length as necessary to extend from the valve to finished grade. Cast iron valve boxes shall be hot coated inside and out with an asphaltic compound.

- B. Valve boxes shall be manufactured by one of the following "approved manufacturers: Bingham & Taylor, Mueller, Handley Industries, A.Y. McDonald, Quality Water Products, or Clay and Bailey.

- C. Valve box bases shall conform to the following:

<u>Valve Size</u>	<u>Base</u>
4" and smaller	round, 8" in height, 10-7/8" diameter at bottom
6" and 8"	round, 11" in height, 14-3/8" diameter at bottom
10" and larger	oval, 11" in height, 15" x 11-1/8" diameter at bottom

### 2.03 RODS, BOLTS, LUGS AND BRACKETS

- A. All steel rods, bolts, lugs and brackets, shall be ASTM A36 or A307 carbon steel with xylan coating as a minimum requirement. The bolts shall have American Standard heavy unfinished hexagonal head and nut dimensions all as specified in ANSI B18.2. Xylan or FluoroKote #1 T-Bolts, corrosion resistant to handle corrosive conditions shall be used on any buried flanged bolts.
- B. After field installation, all steel surfaces shall receive a petrolatum wax tape coating in accordance with AWWA Standard C217. Suppliers include, but are not limited to, Tapecoat® Envirotape® and Denso Densyl Tape. Surface preparation and tape installation shall be in accordance with ASTM C217 and the manufacturer's recommendations. Subject to approval by the ENGINEER, an alternative corrosion protection for exposed buried metal is an aerosol applied rubberized coating. The material shall be rapid dry and specifically designed for corrosion protection. 3M Rubberized Underseal Undercoating 08883 or any equivalent rubberized-bitumen based spray-on undercoating may be used. Follow manufacturer's recommendations for storage and application.

### 2.04 RETAINING GLANDS

- A. All retaining glands shall be ductile iron with ductile iron set screws. Pressure ratings for use with ductile iron pipe shall be a minimum of 250 psi. Retainer Glands shall be coated with electrostatically applied baked-on polyurethane coating or approved equal. Locking wedges, bolts, and set screws shall be coated with Xylan or FluoroKote #1.
- B. Retaining glands shall be manufactured by one of the following "approved manufacturers."

EBBA Iron, Inc.  
PO Box 857

Eastland Texas 76448

## 2.05 TEST /TRACER BOXES

- A. All test/tracer boxes shall be 18" plastic box flared and squared at base and have a 4" I.D. with a 1 1/2" cast iron flange. Lid shall be a one piece locking lid with "Test Station" marked on lid and shall contain 5 screw-type brass terminals on a non conductive terminal board.
- B. Test/tracer boxes shall be manufactured by one of the following "approved manufacturers":

Handley Industries, Inc.  
2101 Brooklyn Rd.  
Jackson, MI 49203  
Model T-45

## 2.06 MARKING POSTS

- A. All marking posts shall be Rhino FiberCurve™ with PolyTechCoating or equivalent fiber-composite marking posts. The color shall be standard blue for water and the length shall be a minimum 66-inches. The decals be UV stable all weather type with a no dig symbol and white and contrasting white and blue vertical lettering: Butterfly and Gate Valves decals (Rhino GD-5226C) Blow-Offs decals (Rhino GD-5411C) Pipeline decals (Rhino GD-1333C).
- B. Marking Posts shall be manufactured by one of the following "approved manufacturers":

Rhino  
280 University Drive Southwest  
Waseca, MN 56093  
1-800-522-4343

Carsonite International  
605 Bob Gifford Boulevard  
Early Branch, SC 29916  
1-800-648-7916

## PART 3: EXECUTION

### 3.01 INSTALLATION

Install "piping specialties" in accordance with the general provisions provided in Specification Sections 01100 and 15000 and the following:

- A. Polyethylene Encasement
  1. Encase piping in polyethylene as required to prevent contact with surrounding backfill and bedding material in all areas shown on the plans or designated by the Engineer. Polyethylene shall be 12 mils .
  2. Install the polyethylene wrap material in accordance with the DIPRA Field Polyethylene Installation Guide and AWWA Standard C105. Polyethylene shall fit snugly and not tightly stretched. All holes or tears shall be repaired with tape. Large holes or tears shall be

repaired by taping another piece of polyethylene over the hole. Tape or plastic tie straps at joint overlaps and at every 3 foot interval.

3. Dig bell holes and slide polywrap over the adjacent pipe and provide a minimum of 1 foot of overlap. Tightly secure bottom of polywrap using two to three passes of polyethylene tape on the pipe to polywrap connection and the overlap polywrap to polywrap connection.
4. Where polyethylene wrapped pipe being installed connects to a pipe that is not wrapped (including existing pipe), extend the wrap a minimum of 3 feet onto the previously uncovered pipe. This includes service lines which may be wrapped in polyethylene or dielectric tape.
5. Exposure of wrapped pipe to sunlight should be kept to a minimum. Pipe can be stored with the polywrap on for a maximum of 30 days.
6. At no time shall the polywrapped pipe be subjected to a point load during handling, temporary storage, or installation. The polywrap must be moved away from the timbers or hoisting device while on the pipe to prevent point loads and resulting pin holes.
7. Direct service taps for polyethylene encased pipe shall follow the procedure described in AWWA Standard C600. Access to the main for tapping through polyethylene is accomplished by making two to three passes of polyethylene tape around the pipe and over the polywrap. The tap is to be made directly through the tape and polywrap.
8. Tape shall be polyethylene compatible adhesive and a minimum of 1.5" wide. Shall be Scotchwrap #50, Fulton #355, or Polyken #900.

B. Valve Boxes

Valve boxes shall be supported so that no load can be transmitted from the valve box to the valve. See Detail Drawing 0201-0601-SD59. Install a self-centering alignment ring at the operating nut American Flow Control, or equal or otherwise make sure that the bottom of the box is centered over the operating and runs perpendicular to the horizontal.

C. Test/Tracer Wire Boxes

Boxes shall placed at areas designated in the plans and shall be flush with existing grade unless otherwise noted.

D. Marker Posts

Install Marker Posts using equipment designed for its installation per manufacturer guidelines and place at locations noted in the drawings or as approved by Engineer.

E. Corporations and Curb Stops

Service line piping shall be compatible with corporation and curbs stops provided with appropriate protection between dissimilar materials and a minimum of interconnecting fittings

**END OF SECTION**

**SECTION 15151****GATE VALVES**  
**(Contractor Furnished)****PART 1: GENERAL****1.01 SCOPE**

Furnish, install, and test all gate valves shown on the Drawings.

**1.02 SUBMITTALS**

Submit shop drawings and manufacturer's literature to the Engineer for approval in accordance with Specification Section 1300.

**1.03 RELATED WORK**

Specification Section 15000 - Piping - General Provisions.

**PART 2: PRODUCTS****2.01 SMALL GATE VALVES**

- A. All gate valves, 3 inches through 12 inches NPS, shall be iron body, resilient-seated, nut-operated, non-rising stem gate valves suitable for buried service. The valve interior and exterior shall be epoxy coated at the factory by the valve manufacturer in accordance with AWWA Standard C550 (6-8 mil average, 4 mil minimum). The valves shall be designed for a minimum differential pressure of 250 psi and a minimum internal test pressure of 500 psi unless otherwise noted on the plans. Valves shall be designed to operate in the vertical position.
- B. Valves shall comply fully with AWWA Standard C509. Valve ends shall be push on joint or MJ (when restrained), or as shown on the plans or approved in writing in accordance with AWWA Standard C111. Stems shall be made of a low zinc alloy in accordance with AWWA C509 4.2.2.4.3. Stem seals shall be double O-ring stem seals. Square operating nuts conforming to AWWA Standard C509 shall be used. Valves shall open (left or right) in accordance with the Owner's standard. All valve materials shall meet the requirements of NSF 61.
- C. Test valves (Operation Test and Hydrostatic Tests) at the manufacturer's plant in accordance with AWWA Standard C509. Provide the Engineer with certified copies of all tests prior to shipment. The Engineer reserves the right to observe all tests.
- D. Acceptable manufacturers: Mueller Company, Decatur, Illinois; ~~Glew Canada, Hamilton, Ontario~~; ~~M&H Valve, Anniston, Alabama~~; ~~United State Pipe and Foundry, Burlington, New Jersey~~; ~~American Flow Control, Birmingham, Alabama~~.

## 2.02 LARGE GATE VALVES

- A. Gate valves larger than 12-inches NPS shall be iron body, double disc (metal to metal seat), parallel seats, bronze mounted, rubber O-ring packing seals, epoxy coated interior and exterior meeting the requirements of AWWA Standard C550, and conforming to AWWA Standard C500. Stems shall be made of a low zinc alloy in accordance with AWWA C500 4.2.2.4.3. All valves shall have openings through the body of the same circular area as that of the pipe to which they are attached. All valves furnished shall open (left or right) in accordance with the Owner's standard. All valve materials shall meet the requirements of NSF 61.
- B. Test valves (Operation Test and Hydrostatic Tests) at the manufacturer's plant in accordance with AWWA Standard C515. Provide the Engineer with certified copies of all tests prior to shipment. The Engineer reserves the right to observe all tests.
- C. Valves shall have mechanical joint ends unless otherwise designated on the plans or approved by the Engineer.
- D. The valves shall be designed for a minimum differential pressure of 150 psi and a minimum internal test pressure of 300 psi, unless otherwise noted on the plans. Make all valves tight under their working pressures after they have been placed and before the main is placed in operation. Any defective parts shall be replaced at the Contractor's expense.
- E. Acceptable manufacturers: Mueller Company, ACIPCO (American Flow Control division, Waterous only), McWane, Inc. (Clow and M&H Divisions only), U.S. Pipe, and Crane Co. (Stockham Division only).

## PART 3: EXECUTION

### 3.01 INSTALLATION

Install the valves in strict accordance with the requirements contained in Specification Section 15000 and detail drawings. All large gate valves shall be restrained.

### 3.02 PROTECTION

After field installation of the valve all external bolts except the operating nut shall receive a layer of tape coating or approved rubberized-bitumen based spray-on undercoating applied before backfill. If polyethylene is applied to the pipe, the entire valve shall be encased in polyethylene encasement prior to backfill. The polyethylene encasement shall be installed up to the operating nut leaving the operating nut exposed and free to be operated. Valve box shall be installed per Piping Specialties Specification 15130 or 15131.

**END OF SECTION**

**SECTION 15171****TAPPING SLEEVES, SADDLES AND VALVES**  
(Contractor Furnished)**PART 1: GENERAL****1.01 SCOPE**

Furnish, install and test all tapping sleeves, tapping valves, and tapping saddles as shown on the Drawings.

**1.02 RELATED WORK**

Specification Section 15000 - Piping - General Provisions

**1.03 SUBMITTALS**

Submit shop drawings and manufacturer's literature to the Engineer for approval in accordance with Specification Section 1300.

**PART 2: PRODUCTS****2.01 GENERAL**

All tapping sleeves, saddles and valves shall be designed for a working pressure of at least 250 psig for 12-inch and smaller. The valves shall be designed for a minimum differential pressure of 250 psi and a minimum internal test pressure of 500 psi unless otherwise noted on the plans.

**2.02 DUCTILE IRON TAPPING SLEEVES**

Verify the type of existing pipe and the outside diameter of the pipe on which the tapping sleeve is to be installed.

Tapping sleeves shall be ductile iron dual compression type unless otherwise specified on the Drawings. The Drawings may require the use of corrosion resistant tapping sleeves in addition to polywrap in areas with corrosive soils. The sleeves shall be made in two halves which can be assembled and bolted around the main. Sleeves shall meet the requirements of NSF 61. Outlet flanges shall conform to the flange requirements of AWWA C110. All valves furnished shall open (left or right) in accordance with the Owner's standard.

Acceptable manufacturers: McWane (Clow and M&H), U.S. Pipe (Mueller), and AFC (Waterous).

**2.03 TAPPING VALVES**

The horizontal tapping valve shall conform to the applicable requirements of AWWA Standard C509. All tapping valves, 3 inches through 12 inches NPS, shall be ductile

iron body, resilient-seated, nut-operated, non-rising stem gate valves suitable for buried service. The valve interior and exterior shall be epoxy coated at the factory by the valve manufacturer in accordance with AWWA Standard C550 (6-8 mil average, 4 mil minimum). The tapping valves shall have flanged inlets with mechanical joint outlets, enclosed bevel gears, bypass valve, rollers, tracks and scrapers. All valves furnished shall open (left or right) in accordance with the Owner's standard.

Acceptable manufacturers: McWane (Clow and M&H), U.S. Pipe (Mueller), and AFC (Waterous).

## 2.04 STAINLESS STEEL TAPPING SLEEVES

The stainless steel band flange shall be manufactured in compliance with AWWA C207, Class D ANSI B.16.1 drilling, recessed for tapping valve MSS-SP60. Mechanical Joint tapping sleeve outlet shall meet or exceed all material specifications as listed below and be suitable for use with standard mechanical joint by mechanical joint resilient wedge gate valves per ANSI/AWWA C509-94 and be NSF 61 approved.

### A. Tapping sleeves from 4" through 12"

Tapping sleeves to be attached to 4" through 12" nominal pipe diameter shall meet the following minimum requirements.

1. The entire fitting shall be stainless steel type 304 (18-8). The body, lug, and gasket armor plate shall be in compliance with ASTM A240. The Flange shall be cast stainless steel in compliance with ASTM A743. The MJ outlet shall be one-piece casting made of stainless steel. The test plug shall be  $\frac{3}{4}$ " NPT in compliance with ANSI B2.1 and shall be lubricated or coated to prevent galling. All metal surfaces shall be passivated after fabrication in compliance with ASTM A-380.
2. The gasket shall provide a 360-sealing surface of such size and shape to provide and adequate compressive force against the pipe after assembly, to affect a positive seal under the combinations of joint and gasket tolerances. The materials used shall be vulcanized natural or vulcanized synthetic rubber with antioxidant and antiozonant ingredients to resist set after installation. No reclaimed rubber shall be used. A heavy-gauge-type 304-stainless armor plate shall be vulcanized into the gasket to span the lug area.
3. The lugs shall be heliarc welded (GMAW) to the shell. The lug shall have a pass-through-bolt design to avoid alignment problems and allow tightening from either side of the main. Bolts shall NOT BE integrally welded to the sleeve. Finger Lug designs are not approved; it is the intent of these specifications to allow a tapping sleeve that has a lug design similar to the approved models.
4. Bolts and nuts shall be type 304 (18-8) stainless steel and Teflon coated or as specified in the bolt section below at the discretion of the Engineer. Bent or damaged units will be rejected.
5. Quality control procedures shall be employed to insure that the shell, lug, (4" and Larger Nominal Pipe Diameter) armor plate, gasket and related hardware are manufactured to be free of any defects. Each unit, after proper installation, shall have a working-pressure rating up to 250 psi.

6. The sleeve construction shall provide a positive means of preventing gasket cold flow and/or extrusion.
  7. Each sleeve shall be stenciled, coded or marked in a satisfactory manner to identify the size range. The markings shall be permanent type, water resistant, that will not smear or become illegible.
- B. Tapping sleeves from 16" and larger
- Tapping sleeves attached to 16" and larger nominal pipe diameter shall meet the following minimum requirements:
1. The body shall be in compliance with ASTM A285, Grade C or ASTM A36. The test plug shall be  $\frac{3}{4}$ " NPT conforming to ANSI B2.1.
  2. The gasket shall provide a watertight sealing surface of such size and shape to provide an adequate compressive force against the pipe. After assembly, the gasket will insure a positive seal under all combinations of joint and gasket tolerances. Gaskets shall be formed from vulcanized natural or vulcanized synthetic rubber with antioxidant ingredients to resist set after installation. No reclaimed rubber shall be used.
  3. Bolts and nuts shall be high strength, corrosion resistant, low alloy, pre AWWA C111, ANSI A21.11 and as specified in the subsection on bolts in this specification.
  4. Quality control procedures shall be employed to insure that the shell, gaskets, and related hardware area are manufactured to be free of visible defects. Each unit, after proper installation, shall have a working-pressure rating up to 200 psi.
  5. Unless otherwise noted, unit shall be protected by electrostatically applied baked epoxy or polyurethane.
  6. Units for concrete, steel cylinder pipe shall be furnished with load bearing setscrews on the gland flange to transfer loads on the outlet away from the steel cylinder and onto the sleeve. Epoxy -coated tapping sleeves do not require grout seal cavity (AWWA M-9 Manual).
  7. Each sleeve shall be stenciled, coded or marked in a satisfactory manner to identify the size range. The marking shall be permanent type, water resistant, that will not smear or become illegible.

## 2.05 FABRICATED STEEL TAPPING SLEEVES

The fabricated steel tapping sleeve shall be manufactured in compliance with AWWA C207. Sleeves shall be fabricated of minimum three-eights (3/8) inch carbon steel meeting ASTM A285 Grade C. Outlet flange shall meet AWWA C-207, Class "D" ANSI 150 lb. drilling and be properly recessed for the tapping valve. Bolts and nuts shall be high strength low alloy steel to AWWA C111 (ANSI A21.11). Gasket shall be vulcanized natural or synthetic rubber. Sleeve shall have manufacturer applied fusion bonded epoxy coating, minimum 12 mil thickness., Class D ANSI B.16.1 drilling, recessed for tapping valve MSS-SP60. Mechanical Joint tapping sleeve outlet shall meet or exceed all material specifications as listed below and be suitable for use with standard mechanical joint by mechanical joint resilient wedge gate valves per ANSI/AWWA C509-94 and be NSF 61 approved.

## 2.06 TAPPING SADDLES

Unless otherwise specified by the Drawings, tapping saddles conform to the requirements of AWWA Standard C800 for the High Pressure class tapping saddles. Tapping saddles shall consist of ductile iron outlet castings, attached to the pipeline with high strength stainless steel straps. Castings shall be sealed to pipeline with O-ring seals. Saddles shall have ANSI A21.10 flanged outlets counterbored for use with tapping valves and tapping equipment.

## 2.06 BOLTS

All bolts shall have American Standard heavy unfinished hexagonal head and nut dimensions all as specified in ANSI B18.2. Bolts shall be Xylan or FluoroKote #1 suitable for direct bury in corrosive soils.

# PART 3: EXECUTION

## 3.01 INSTALLATION

Install the tapping sleeves, saddles, and valves in strict accordance with the requirements of Specification Section 15000. Install the tapping sleeves, tapping saddles, and tapping valves in accordance with the manufacturer's instructions. The tapping procedure is to be in accordance with the tapping machine manufacturer's instructions.

## 3.02 PROTECTION

After field installation of the valve all external bolts except the operating nut shall receive a layer of tape coating or approved rubberized-bitumen based spray-on undercoating applied before backfill. If polyethylene is applied to the pipe, the entire sleeve and valve assembly shall be encased in polyethylene encasement prior to backfill. The polyethylene encasement shall be installed up to the operating nut leaving the operating nut of the tapping valve exposed and free to be operated

## 3.03 PRELIMINARY TESTING

Perform a hydrostatic test of the tapping sleeve and valve assembly in accordance with Specification Section 15030 after installation of the tapping sleeve and valve, but prior to making the tap. The test shall be made with the valve open using a tapped mechanical joint cap. No leakage is acceptable. The test pressure shall be maintained for a minimum of 15 minutes.

Perform hydrostatic test of tapping saddles in accordance with AWWA Standard C800.

**END OF SECTION**

**SECTION 15181****FIRE HYDRANTS**  
(Contractor Furnished)**PART 1: GENERAL****1.01 SCOPE**

Furnish all labor, material, tools, and equipment required to install fire hydrants at the location shown on the plans, or where designated by the Engineer.

**PART 2: PRODUCTS****2.01 MATERIAL**

- A. All fire hydrants shall be ductile iron and conform to the requirements of AWWA C502, traffic-model break-away type fire hydrants.
- B. Contact the local water district and obtain written fire hydrant mechanical details for the water district prior to ordering any fire hydrants for the Work. All fire hydrants shall open left or right as required and be clearly marked on the top of the hydrant with a 1-1/2" pentagon top nut and have not less than two (2) O- ring stem seals. The number and sizes of hose nozzle outlets is dependent on the local regulation. (Most typical is two (2) bronze male threaded 2-1/2" hose outlet nozzles and one (1) bronze male threaded 4-1/2" pumper outlet nozzle with American National Fire Hose Connection Screw Threads (NH).) The hydrant shall be break-away traffic flange, 5-1/4" valve opening, 6" mechanical joint pipe connection. The hydrant interior and exterior shall be epoxy coated at the factory by the hydrant manufacturer in accordance with AWWA Standard C550 (6-8 mil average, 4 mil minimum). The Contractor shall contact the local water district and obtain written fire hydrant mechanical details for the water district prior to ordering any fire hydrants in accordance with the drawings
- C.
- D. All hydrant materials shall meet the requirements of NSF 61.
- E. Acceptable manufacturers and models, subject to the specifications set forth, include:
  - ~~American Darling B-84 B, 5 1/4" valve opening (by the American Flow Control Division of ACIPCO)~~
  - ~~Kennedy Guardian, 5 1/4" valve opening (by Kennedy Valve Company Division of McWane, Inc.)~~
  - Mueller Super Centurion 250, Model A-423, 5-1/4" valve opening

**PART 3: EXECUTION****3.01 INSPECTION PRIOR TO INSTALLATION**

- A. Contractor shall inspect all fire hydrants upon receipt. Cycle each hydrant to full open and full closed positions to ensure that no internal damage or breakage has

09/08 - Pipeline

occurred during shipment and handling. Check all external bolts for proper tightness.

- B. After inspection, close the hydrant valves and replace the outlet nozzle caps to prevent the entry of foreign matter. Protect stored hydrants from the weather/elements with the inlets facing downward.

### 3.02 INSTALLATION

- A. Locate hydrants on the plans or as directed by the Engineer and in compliance with local regulations. The location shall provide complete accessibility and minimize the possibility of damage from vehicles or injury to pedestrians. When placed behind the curb, the hydrant barrel shall be set so that no portion of the pumper or hose nozzle cap will be less than eighteen to twenty-four inches, depending on local requirements, from the gutter face of the curb. All hydrants shall stand plumb with the pumper nozzle facing the curb. Set hydrants with nozzles at least eighteen inches above the finished grade as shown on the plans. Set the break flange at least two but no more than six inches above finished grade, or as directed by the Engineer. Connect each hydrant to the main with a six inch branch connection controlled by an independent six inch gate valve, unless otherwise shown on the plans. All hydrants assemblies must be restrained from the hydrant back to the main.
- B. The Engineer may authorize hydrant protection using steel pipe bollards when hydrant installations have a greater than normal exposure to vehicular damage (e.g. parking lot installations, unusual driving situation, etc.). Install all such protection designated by the Engineer. Locate bollards as necessary adjacent to the hydrant and in such a manner as to not interfere with the ability to connect hoses or operate the hydrant as per detail drawing. Additionally, locate the bottom of the bollard and encasement above the hydrant supply piping and valve to prevent the possibility of damage to the piping should the bollard be displaced when hit. Payment for bollards shall be per the supplemental unit price schedule.
- C. Unless otherwise directed by the Engineer, excavate a drainage pit two feet in diameter and two feet deep below but not beyond each hydrant. Fill the pit with compacted  $\frac{3}{4}$  inch clean granular under and around the base of the hydrant to a level 12 inches above the hydrant drain opening. No hydrant drainage pit shall be connected to a sewer.
- D. Cover the drainage area with geotextile fabric. The fabric shall completely isolate the gravel or stone so that no fill material or adjacent earth comes in contact with pit material.
- E. Notify the Engineer of situations where the ground water table is above the drain opening of dry barrel hydrants. If directed by Engineer, plug the drain opening using a method acceptable to the hydrant manufacturer. No drainage pit is required when the hydrant drain is plugged. Mark the hydrant, in a manner acceptable to the hydrant Owner, to indicate that the drain opening has been plugged. Operation of a hydrant with plugged drain leaves the hydrant barrel full of water. Pump the hydrant barrel dry after each use.

- F. Reaction or thrust blocking at the base of each hydrant must not obstruct the drainage outlet of the hydrant. The size and shape of concrete thrust backing and the number and size of tie rods, when required, shall be approved by the Engineer. Use the thrust blocking material specified in Specification Section 3300. See Specification Section 15000 for tie rod requirements.

### 3.03 TESTING

After installation and before backfilling (and after pressure testing the water main) test the hydrant as follows:

#### A. Pressure Test

1. Open the hydrant fully and fill with water; close all outlets.
2. To prevent caps from being blow off dry-barrel hydrants and to prevent other possible damage, vent air from the hydrant by leaving one of the caps slightly loose as the hydrant is being filled. After all air has escaped, tighten the cap before proceeding.
3. Apply line pressure.
4. Check for leakage at flanges, nozzles and operating stem.
5. If leakage is noted, repair or replace components or complete hydrant until no leaks are evident.

#### B. Drainage Test for Dry-Barrel Hydrants

1. Following the pressure test, close hydrant.
  2. Remove one nozzle cap and place pylon or hand over nozzle opening.
  3. Drainage rate should be sufficiently rapid to create a noticeable suction.
  4. After backfilling, operate the hydrant to flush out any foreign material.
  5. Tighten nozzle caps, them back them off slightly so that they will not be excessively tight; leave tight enough to prevent removal by hand.
- C. Paint all hydrant above the bury line in accordance with the local operations standards. Touch up paint (as specified by the OWNER under Special Conditions) shall be applied upon completion of installation as needed. Take extreme care to avoid getting any paint on the "O" ring under the top operating nut or on the hydrant nozzles. Should paint be found on the "O" ring, the Contractor shall remove the paint and replace the "O" ring at his expense. Any paint on the hydrant nozzles shall be removed at the Contractor's expense.

**END OF SECTION**

## SECTION 15185

### **ABANDONMENT OF MAINS AND HYDRANTS**

#### **PART 1: GENERAL**

##### **1.01 SCOPE**

- A. Transfer all services from main to be abandoned to the new main, make designated connections to existing water lines, and install new hydrants. Upon completion, testing and satisfactory operation of the new mains and connections, cut the existing pipeline to provide a break between the portion of the system remaining in use and the portion to be abandoned, remove all hydrants designated to be abandoned and cap all remaining live ends of the existing mains including hydrant laterals. Completely cover existing hydrants designated to be abandoned to prohibit use until the hydrants are removed. Remove and deliver hydrants to the Owner or disposed of as directed by the Engineer. Remove valve boxes of abandoned valves as directed by the Engineer.

- B. Cutting and Plugging (Capping)

Cut the existing pipe at the point shown on the plans or designated by the Engineer. The method of cutting shall be approved by the Engineer. The plugs and/or caps used in connection with the work under this item shall be either mechanical joint or slip joint as compatible with the pipe being capped and shall be manufactured in accordance with AWWA Specification C-110. After the plug or cap is installed, provide the required blocking to adequately brace the plug or cap. Blocking may be used temporarily against the abandoned pipe. However, the permanent blocking shall be installed such that future disturbances of the abandoned pipe shall not affect the permanent blocking. After the water line has been plugged or capped and the permanent blocking has been installed, backfill the excavation as specified under Section 02210.

Note: The cost of all work associated with abandonment of existing pipelines and hydrants shall be included in the price of the cut and plug bid item if provided. Otherwise the cost shall be incorporated in the cost of installing the main that is replacing the abandoned pipe.

- C. Treating Remaining Pipe in Place

Water mains will generally remain in place without further action unless otherwise directed by the ENGINEER. There may be water mains that are judged to be of questionable structural condition and may be specified for filling with grout or flowable fill. The contract documents will identify any main or section of main that is to be filled. Pipe located

above ground (mounted on bridges, etc.) will be removed.

## **1.02 REFERENCES**

AWWA M16 Manual, Work practices for Asbestos Cement Pipe

### **PART 2: PRODUCTS**

Not Used

### **PART 3: EXECUTION**

Where AC pipe removal is required, pipe cutting and removal shall only be handled by a company specialized in handling AC pipe who will strictly adhere to the AWWA M16 Manual, Work practices for Asbestos Cement Pipe.

**END OF SECTION**

## SECTION 15191

### AIR RELEASE, BLOW-OFF OUTLETS AND RELATED COMPONENTS (Contractor Furnished)

#### PART 1: GENERAL

##### **1.01 SCOPE**

Furnish and install air release and blow-off outlets at the locations shown on the Drawings or as directed by the Engineer.

##### **1.02 SUBMITTALS**

Submit shop drawings and manufacturer's literature for equipment to be supplied to the Engineer for approval in accordance with Specification Section 1300. All Products shall meet the requirements of NSF 61

##### **1.03 REFERENCES**

Refer to current AWWA Standards: AWWA Standard for Air-Release, Air/Vacuum, and Combination Air Valves for waterworks Service C512

#### PART 2: PRODUCTS

##### **2.01 COMBINATION AIR/VACUUM RELEASE VALVES**

Provide 1" APCO Model No. 143C as manufactured by Valve and Primer Corporation (Schaumburg, IL) or 1" Valvematic (Elmhurst, IL) Model 201 for mains 12" and smaller unless noted otherwise on the plans. Provide 2" APCO Model No. 145C as manufactured by Valve and Primer Corporation or Valvematic Model 202C for mains 16" and larger unless noted otherwise on the plans. Combination valves shall be double acting to prevent accumulation of air in the pressurized main and to permit air to enter the pipe when pressure seriously drops. Bodies shall be cast iron with stainless steel floats.

##### **2.02 BLOWOFF FLUSHING HYDRANT ASSEMBLY**

Blow off assembly for underground applications shall be designed to fit within a standard valve box. In areas prone to cold weather they shall be self draining and non-freezing. All working parts shall be serviceable from above with no digging required. They shall be operated such that the device goes from full open to full close in a 1/4 turn clockwise turn. Approved types of flushing hydrants are Tru-Flo Model TF 500 by the Kupferle Foundry or equal.

## 2.03 COPPER PIPE

Copper pipe shall be Type L or Type K, as specified in plans, meeting the requirements of ASTM Standard B88.

## 2.04 CORPORATION STOPS

Corporation stops shall be of the brass ball valve type manufactured in accordance with AWWA Standard C800. The inlet connection shall have standard AWWA tapered threads unless otherwise required by the Engineer. The outlet connection shall be a compressed fitting end. The sizes shall range from 1/2" to 2" and shall match the size of specified copper pipe material.

Acceptable manufacturers and model numbers are:

- Ford Meter Box Company - FB400 thru FB1600
- Mueller – B-25000
- A.Y. McDonald – 4701B Series

## 2.06 CURB STOPS

Curb stops shall be bronze body construction, ball valves, with Double O-ring stem seals. Curb stops shall conform to AWWA Standard C800. End connections shall be suitable for flared copper connection. If required by the Engineer, valves shall be furnished with square gate valve operating nuts. Sizes shall be from 3/4" to 2" and shall match the service line size.

Acceptable manufacturers and model numbers:

- Ford Meter Box Company – B22 Series
- Mueller - B-25204
- A.Y. McDonald - 6100 Series

## 2.07 CURB BOXES

Curb boxes shall be standard cast iron, sliding or screw type, 1" or 2-1/2" as required, complete with lid and head bolt. Boxes shall be adjustable from 18-inches to 66-inches. The box size will be determined by the Engineer.

Acceptable manufacturers:

- Bingham & Taylor
- Mueller
- Handley Industries
- Clay & Bailey
- A.Y. McDonald
- Quality Water Products

## 2.08 MISCELLANEOUS SERVICE LINE FITTINGS

Miscellaneous service line fittings such as couplings, adaptors, saddles, bends, plugs, water service electrical insulators, etc. shall conform to AWWA Standard C800.

Acceptable manufacturers:

- Ford Meter Box
- Mueller
- A.Y. McDonald

## PART 3: EXECUTION

### 3.01 INSTALLATION

See Specification Section 15000 for pipe installation. See Detail Drawings showing installation details for air/vacuum release valve assemblies and air blow-off assemblies. See section 15200 for information about selected components (copper pipe, corporation stops, curb stops, curb boxes) common to service lines.

### 3.02 INSTALLATION OF CORPORATION STOPS

- A. Use experienced craftsmen familiar with installation of water service lines when tapping water mains. Make all taps with a suitable tapping machine (Mueller, Ford, Hays or Dresser type) using the proper combined drill and tap. Hand held drilling equipment is not acceptable.
- B. Inspect corporation stops for cleanliness, damaged threads, and proper operation of the ball valve prior to installation. Do not install corporation stops that fail this inspection.
- C. The main may be tapped at the horizontal centerline on the top of the pipe as shown on Detail Drawings. Use a tapping saddle when the water main wall thickness or material (plastic, concrete or asbestos cement pipeline material) make it unsuitable for direct tapping.
- D. Install all corporation stops so that between 2 and 3 threads extend beyond the inside wall of the main. If necessary, make a test tap with the boring bar marked to the proper depth. The corporation stop, when properly installed, will not be shouldered with the main. Do not use lubricants of any type when installing the corporation stop.
- E. Use the procedure outlined in AWWA Standard C600 for installing taps on grey iron or ductile iron mains encased in polyethylene.

### 3.03 INSTALLATION OF BLOWOFF/DISCHARGE LINE AND FITTINGS

- A. Excavate, backfill, and restore the surface in accordance with Division 2 of these Specifications.

- B. Install copper pipe between the corporation stop and the curb stop or air release valve location making only gradual changes in grade or alignment, as required. Do not make bends greater than 15 degrees in any direction. Install curb stops with the operating nut in the vertical position
- C. Open the corporation stop slowly to fill the service line. When the line is full and all air has been removed, completely open the corporation. Perform a visual leak inspection of all piping, fittings, and taps prior to backfilling. Zero leakage is allowed in 10 minutes.
- D. Provide polyethylene encasement, or other protective wrap approved by the Engineer, on all Service Lines (pile, valves, stops, etc.) unless they are made of different materials than the grey-iron or ductile iron main or not subject to aggressive soils. Polyethylene encasement shall extend along the service line for its entire length.
- E. Install the curb box centered over the nut. Install and adjust the curb boxes to be flush with finished grade. Install and lock the lids on the curb boxes. Discharge piping to the surface, if provided, shall be schedule 40 galvanized steel to schedule 40 PVC and properly supported.

**END OF SECTION**

**FOREST HILL AVENUE WATERMAIN REPLACEMENT  
FROM SHERIDAN ROAD TO KNOXVILLE AVENUE**

**TABLE OF CONTENTS**

<u>TITLE</u>	<u>PAGE</u>
<b><u>SUPPLIMENTAL TECHNICAL SPECIFICATIONS</u></b>	
SUPPLIMENTAL TECHNICAL SPECIFICATIONS	10 PAGES

## Supplemental Technical Specifications

The Technical Specification used for Developer Installed Mains shall be "The American Water Works Service Company Incorporated Standard Pipeline Specifications" dated 2008. The Supplemental Technical Specifications amend or supplement the technical specifications. All provisions, which are not so amended or supplemented by the Supplemental Technical Specifications, shall remain in full force and effect:

Engineer shall mean Illinois American Water representative

### **DIVISION 2 – Site Work**

#### **Section 2020 – Dewatering**

Contractor shall ensure that trench is sufficiently dewatered as outlined in the specification. Contractor shall be responsible for obtaining and paying for any permits required for dewatering and disposal shall be at the discretion of the Developer and Developer's Engineer.

#### **Section 2025 – Existing Utilities and Structures**

Part 3.01 Local Illinois American contact shall be immediately notified of any conflicts or obstructions to the approved water main alignment. No deviations of the approved water main alignment shall be made without the consent and approval by Illinois American.

Part 3.04 D (3) Encasement of proposed watermain with water main grade PVC pipe at the consent of Illinois American. The use of casing spacers are not required in encasements of less than 30 feet. The ends of the encasing pipe shall be sealed.

Part 3.04 E Separation of Water Mains, Sanitary Sewer and Storm Sewers shall be constructed according to the Illinois Environmental Protection Agency Title 35, Subtitle F, Chapter II, Part 653, Section 653.119. Alternate solutions as presented in the Illinois Society of Professional Engineers "Standard Specifications for Water and Sewer main Construction in Illinois"; Fifth Edition shall be acceptable at the discretion of the Water Company Representative and the Illinois Environmental Protection Agency.

#### **Section 2105 – Clearing and Grubbing**

Payment shall be at the discretion of the Developer and Developer's Engineer.

#### **Section 2210– Trenching, Backfilling and Compacting**

Part 2.03– Illinois American does not require the use of bedding material for ductile iron and HDPE pipe, unless trench material is unacceptable or rock has

been encountered. Trench bottom shall be flat and shall be benched at each joint to allow full contact with length of pipe.

Part 3.03 Protection of trees and their root systems shall follow the requirements of the municipality that work is being conducted and at a minimum use the requirements as indicated in Part 3.03.

Part 3.05F. Trench Depth, Part (1) General – All trenches shall provide for a minimum cover over the pipe barrel to the top of finished grade as indicated in the following table, unless otherwise authorized by the Water Company Representative.

DISTRICT	MINIMUM COVER OVER PIPE BARREL
Cairo	36-inches
Interurban	42-inches
Alton	42-inches
Champaign	42-inches
Lincoln	42-inches
Pekin	42-inches
Peoria	42-inches
Chicago Metro	66-inches
Pontiac	48-inches
Streator	48-inches
Sterling	48-inches

Part 3.06 B Illinois American does not allow the use of PVC pipe at this time.

Part 3.08 Backfill under roadways shall follow the requirements of the municipality that work is being conducted.

#### Section 2458– Large Scale Horizontal Directional Drilling (HDD)

Part 1.02 Related Sections– Section 01300 does not apply, however please provide submittals of material to be used and explanation of the construction technique for consideration by Illinois American as described in Section 1.05.

Part 1.05 A (4) Proposed Alignment Proposed alignment shall have in line valves prior to and immediately following directional drilled section of main, unless otherwise authorized by Illinois American.

Part 3.06 C Additional cross bracing is required near the connection of HDPE pipe and Ductile Iron pipe. Consult with Illinois American for approved bracing methods.

#### Section 2540– Erosion and Sedimentation Control

Part 1.02 Standards – Developer shall meet all requirements of NPDES Storm Water Phase II Rules and shall provide conformation to the Water Company that a Notice of Intent has been filed where applicable.

## Section 2558– Identification/ Location Guide

Part 2.02 Location Wire – Illinois American requires that Location (Tracer) Wire be installed with Ductile Iron Main.

Part 3.02 B – Location wire shall be placed on top of the polywrapped pipe and shall be taped at the midpoint of each pipe length.

Part 3.02 C – Location wire shall not be looped into a valve box unless otherwise authorized by Illinois American. Location wire shall be extended up a fire hydrant barrel and be terminated within a Tracer Wire Access Box located behind the hydrant. The use of a Pipeline Marker/Test Station may also be acceptable at the approval of the water company.

## DIVISION 15 – Mechanical

### Section 15000 – Piping – General Provisions

Part 1.02 Related Work – Does not apply to this section.

Part 2.02 Petrolatum Tape Coating – Illinois American does not require the use of Petrolatum Tape Coating.

Part 2.03 Rubberized-Bitumen Based Spray-On Undercoating – Illinois American does not allow the use of field applied undercoating.

### Section 15020 – Disinfecting Pipelines

Part 1.02 Work by Owner – The Water Company will operate any existing valves required to complete the flushing and disinfection. A minimum of 24 hours notice must be given the Water Company prior to beginning this process.

The Developer will be responsible for the main being flushed and disinfected. The Contractor/ Developer's Engineer shall take turbidity samples prior to starting the disinfection process.

The Developer's Engineer or representatives of Illinois American (as directed by the Local Water Company Office) will collect bacteriological samples, record chlorine levels and deliver them to the specified laboratory directed by the Water Company by 2pm Monday through Thursday.

Part 3.03 B Slug Method – The Water Company does not allow the use of the slug method unless otherwise authorized by the Water Company Representative.

Part 3.05 A Bacteriological Sampling – Illinois Environmental Protection Agency allows for the main to be accepted on one set of samples, as long as it is the initial test. If a sample fails on the initial test then two (2) consecutive samples taken at least 24 hours apart will be required to be taken and both of these set of samples must pass or the sampling process is repeated.

## Section 15030 – Pressure and Leakage Tests

Part 1.01 Scope of Work - The Developer's Engineer must complete the "Hydrostatic Pressure Test" form within the Illinois American Developer Install Packet. The Engineer and a Water Company Representative shall witness the test and sign the form prior to submission.

ADD Part 1.03 Work by Owner – The Water Company will operate any existing valves required to complete the pressure testing. A minimum of 24 hours notice must be given to the Water Company prior to beginning this process.

Part 3.01 C – For system operating pressures of 100 psi or less, perform the hydrostatic test at a pressure of 140 psi without exceeding the rating of the pipe and appurtenances, unless otherwise authorized by the Water Company Representative. For system operating pressures of 101 psi to 200 psi, perform the test at a pressure of no less than 100 psi above the normal operating pressure without exceeding the rating of the pipe and appurtenances.

## Section 15106 – Ductile Iron Pipe and Fittings (Contractor Furnished)

Part 2.01 – Pipe material, Subsection "A" General – The pipe shall be coated outside with a 1 mil. bituminous coating in accordance with ANSI/AWWA C151/A21.51-96. The pipe interior shall be cement mortar lined and seal coated in compliance with the latest revision of ANSI/AWWA C104/A21.4-95. The cement mortar lining shall be single thickness unless otherwise noted by the Water Company.

Part 2.01 – Pipe Material, Subsection "C" Pipe Class – The ductile iron pipe sizes 4-inch to 12-inch shall be Pressure Class 350 in accordance with ANSI/AWWA C151/A21.51-96 or approved equal. The ductile iron pipe sizes 16-inch and greater shall be Pressure Class 250 in accordance with ANSI/AWWA C151/A21.51-96 or approved equal.

Part 2.01 – Pipe Material, Subsection "E" Joints – The Water Company shall accept Mechanical and Push-On Joints as outlined in item 1 of the specification. The Water Company shall determine the type of joint applicable to each project. Alternate solutions through the use of Flanged Joints shall be acceptable at the discretion of the Water Company.

Part 2.02 – Fittings, Subsection "A" – The Water Company shall accept Compact Ductile Iron Fittings conforming to ANSI/AWWA C153/A21.53-94 or approved alternative by the Water Company. The Ductile Iron Fittings shall be manufactured by one of the following approved manufacturers:

- 1) American Cast Iron Pipe Company
- 2) McWane Inc.
- 3) Clow Water Systems Corporation
- 4) Griffin
- 5) US Pipe

Part 2.02 – Fittings, Subsection “A”, paragraph (2) – Coating and Lining - The cement mortar lining shall be single thickness unless otherwise noted by the Water Company.

Part 2.02 – Fittings, Subsection “B” Joints - The Water Company shall accept Mechanical and Push-On Joints as outlined in item 1 of the specification in accordance ANSI/ AWWA C111/ A21.11 – 95. The Water Company shall determine the type of joint applicable to each project. Alternate solutions through the use of Flanged Joints shall be acceptable at the discretion of the Water Company.

~~Field Lok gaskets may be permitted on valves and fittings at the discretion of the Water Company. Gaskets must be used only in approved fittings and must be manufactured for use in the fitting to ensure that fitting and pipe tolerances are acceptable. Field Lok gaskets may not be used in vertical restrained joint applications.~~

Part 3.01 Installation, Subsection “B” Mechanical Joints – Mechanical Joint Bolts shall be High Strength, Low Alloy Steel in accordance ANSI/ AWWA C111/ A21.11 – 95.

Part 3.01 Installation, Subsection “A”, paragraph 2. Push-On – The Water Company shall accept the use of US Pipe's Field Lok Gasket, or approved equal in the restraint of Push-on joint pipe. Gasket shall be in accordance to ANSI/ AWWA C111/ A21.11- 95. Gaskets shall be manufactured by and accepted by the pipe manufacture being used for the project.

Part 3.01 Installation, Subsection “C” Restrained Joints (3) – Mechanical Joint Bolts shall be High Strength, Low Alloy Steel in accordance ANSI/ AWWA C111/ A21.11 – 95.

#### **Section 15121 – High Density Polyethylene (HDPE) Pipe (Contractor Furnished)**

Part 2.03 Fittings A - Illinois American requires the use of fused mechanical joint fitting for transition to different piping materials unless otherwise noted by the Water Company.

#### **Section 15131 – Piping Specialties (Contractor Furnished)**

Part 2.01 Polyethylene Encasement - A – The polyethylene film supplied shall be translucent, black or blue and distinctive markings are not required.

Part 2.01 Polyethylene Encasement - D – Contractor shall supply Water Company with submittal including manufacture and technical specification of polyethylene encasement for approval of material prior to installation.

Part 2.03A Rods - A – Illinois American does not allow the use of rods for use as a restraining device unless otherwise noted by the company.

Part 2.04 Retainer Glands - The retainer glands shall be manufactured by one of the following approved manufacturers, or approved equal:

- 1) Ford Meters Uni-Flange Series 1400
- 2) EBAA, Inc Mega Lug

Part 2.05 Test/ Tracer Boxes – The additional approved manufacturer

C.P. Test Services – Valveco Inc.  
 P.O. Box 336  
 New Berlinville, PA 19545  
 Phone: 888-482-5826  
 Model – TRAB (Tracer Wire Access Box)

Part 2.06 Marking Posts – An additional approved marking post which incorporates a tracer wire testing station shall be:

Rhino TriView Flex Test Station marked for a water main.

Part 3.01 Installation – A. Polyethylene Encasement – All new main shall be encased in polyethylene unless otherwise noted by the Water Company.

### Section 15150 – Gate Valves

Part 2.01 Small Gate Valves - Gate valves shall be installed for all mains up to and including 8-inch in diameter unless otherwise directed by the Water Company. The gate valve opening direction is specified by the District in Table 2:

Table 2: Gate Valve Opening Direction

DISTRICT		GATE VALVE OPENING DIRECTION
Southern	Alton	Right (clockwise)
	Cairo	Left (counter-clockwise)
	Interurban	Right (clockwise)
Northern	Lincoln	Left (counter-clockwise)
	Pekin	Left (counter-clockwise)
	Peoria	Left (counter-clockwise)
Eastern	Champaign	Left (counter-clockwise)
	Pontiac	Left (counter-clockwise)
	Streator	Left (counter-clockwise)
	Sterling	Left (counter-clockwise)
	Chicago Metro	Left (counter-clockwise)

The Water Company shall accept the use of Mechanical Joint or Push-On Joint Valves. The Water Company shall determine the type of joint and restraint applicable to each project.

The Small Gate Valves shall be manufactured by one of the following approved manufacturers:

- 1) ~~Clow Valve Company~~
- 2) Mueller Company
- 3) ~~US Pipe and Foundry~~
- 4) American Flow Control

Part 2.02 Large Gate Valves – Not applicable unless specified by the Water Company.

### Section 15155 – Butterfly Valves

Part 2.01 Valves - Specified butterfly valves shall be epoxy coated in accordance with ANSI/ AWWA C550-90. All paint seal or epoxy coatings will be ANSI/ NSF 61 certified for use on potable water applications.

Butterfly valves shall be installed for all mains 12-inch or greater in diameter unless otherwise directed by the Water Company. The butterfly valve opening direction is specified by the District in Table 3:

Table 3: Butterfly Valve Opening Direction

DISTRICT		BUTTERFLY VALVE OPENING DIRECTION
Southern	Alton	Right (clockwise)
	Cairo	Left (counter-clockwise)
	Interurban	Right (clockwise)
Northern	Lincoln	Left (counter-clockwise)
	Pekin	Left (counter-clockwise)
	Peoria	Left (counter-clockwise)
Eastern	Champaign	Left (counter-clockwise)
	Pontiac	Left (counter-clockwise)
	Streator	Left (counter-clockwise)
	Sterling	Left (counter-clockwise)
	Chicago Metro	Left (counter-clockwise)

The Water Company shall accept the use of Mechanical Joint or Push-On Joint Valves. The Water Company shall determine the type of joint and restraint applicable to each project.

The Butterfly Valves shall be manufactured by one of the following approved manufacturers:

- 1) Mueller Company (Henry Pratt Company Division)
- 2) Clow Water Systems Corporation

## Section 15171 – Tapping Sleeves, Saddles and Valves

Part 2.02 Tapping Sleeves and Valves - The Cast/ Ductile Iron Tapping Sleeves (short or long pattern) for cast, ductile iron and asbestos/ cement pipe mechanical joint ends shall be manufactured by one of the following approved manufacturers:

- 1) Mueller Company H615 (CI and DL pipe) or approved equal
- 2) Mueller Company H619 (A/C pipe) or approved equal

Resilient Seat Tapping Valves shall be manufactured by one of the following approved manufacturers:

- 1) Mueller Company T2360-16 (CI, DL and A/C pipe) or approved equal. Tapping valve shall have mechanical joint end.

The tapping valve opening direction is specified by the District in Table 4:

**Table 4: Tapping Valve Opening Direction**

DISTRICT		TAPPING VALVE OPENING DIRECTION
Southern	Alton	Right (clockwise)
	Cairo	Left (counter-clockwise)
	Interurban	Right (clockwise)
Northern	Lincoln	Left (counter-clockwise)
	Pekin	Left (counter-clockwise)
	Peoria	Left (counter-clockwise)
Eastern	Champaign	Left (counter-clockwise)
	Pontiac	Left (counter-clockwise)
	Streator	Left (counter-clockwise)
	Sterling	Left (counter-clockwise)
	Chicago Metro	Left (counter-clockwise)

Fabricated tapping sleeves for cast iron or asbestos/ cement pipe, stainless steel type, will be welded stainless steel tapping sleeve provided with a wrought, or full thickness cast, stainless steel flange, full seal gasket and 304 stainless steel bolts and nuts. Either the bolt or the nut will be coated with a plastic material to serve as a self-lubricant.

The fabricated tapping sleeve shall be manufactured by one of the following approved manufacturers:

- 1) JCM Industries, Inc. (Fabricated)
- 2) Ford Company (Fabricated)

## Section 15181 – Fire Hydrants

Part 1.01 Scope – The contractor shall furnish the fire hydrant unless otherwise directed by the Water Company.

Part 2.01 Material – Fire hydrants shall be in accordance with the requirements as contained in ANSI/ AWWA C502-94 and shall have an epoxy coated in accordance with ANSI/ AWWA C550-90. The hydrant shall be a 5 1/4 inch barrel traffic model (*Peoria barrel size shall be 4 1/2 inch*) with two (2) 2 1/2 inch hose connections and one (1) 4 1/2 inch pump nozzle, for installation in a 5 foot trench depth unless otherwise indicated by the Water Company.

### **Fire Hydrant Thread Type**

National Standard (NS 2-1/2" Butt, 7-1/2 threads, thread O.D. 3.062")  
(F-548 4-1/2" Butt, 4 threads)

Mueller Thread (D306 2-1/2" Butt, 6 threads, thread O.D. 3.082")  
(F-548 4-1/2" Butt, 4 threads)

The hydrant thread type for each District are listed in Table 5:

**Table 5: Hydrant Threads Type**

DISTRICT	FIRE HYDRANT THREAD TYPE	DIRECTION TO OPEN
Southern	Alton	National Standard
	Cairo (1) *	Special Thread
	Interurban	National Standard
	(Exceptions)	
	East St. Louis	Mueller Thread
	Alorton	Mueller Thread
	Brooklyn	Mueller Thread
	Cahokia - Maplewood	Mueller Thread
	Fairview – Caseyville	Mueller Thread
	Sauget	Mueller Thread
	National City	Mueller Thread
	Fairmont City	Mueller Thread
	Washington Pk	Mueller Thread
Northern	Granite City	Mueller Thread
	Venice	Mueller Thread
	Pekin	National Standard
	Peoria(2)*	National Standard
Eastern	Lincoln	National Standard
	Champaign	National Standard
	Pontiac(3)*	National Standard
	Streator (4)*	National Standard
	Sterling (5)*	National Standard
	Chicago Metro	National Standard

- (1) Cairo- (A-263 2-3/8" Butt, 8 threads, thread O.D. 2.980")  
(F-548 4-1/2" Butt, 4 threads, 1-3/8" pentagon operating nut)
- (2) Peoria - (C-305 2-1/2" Butt, 7 threads, thread O.D. 3.068")  
(Steamer Nozzle shall be 4" Butt, 4 threads, thread O.D. 4.955")
- (3) Pontiac - (D-306 2-1/2" Butt. 7-1/2 threads, thread O.D. 3.062")  
(4-1/2" (Large) Butt, 4 threads, 1-1/4" pentagon operating nut)
- (4) Streator – (Steamer Nozzle shall be National Standard "Fine" Thread)
- (5) Sterling – (Pumper nozzle shall be 4" and a 1-1/8" pentagon operating nut)

The fire hydrant shall be manufactured by one of the following approved manufacturers:

- 1) Mueller Company (Super Centurion)
- 2) Clew (Medallion)

At the discretion of the Water Company the hydrant maybe required to include Hydra Shield Security Caps for each nozzle.

The hydrants shall be provided in the specified color as indicated by the Water Company.