CITY OF ZION
CONTRACT DOCUMENT NUMBER 230026
FOR
2023 WATER MAIN REPLACEMENT

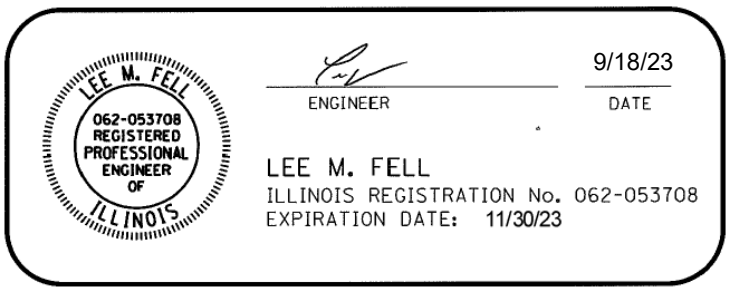
Bid Opening Date: .....December 5, 2023
Bid Opening Time: ..... 10:00 a.m.
Bid Opening Location: .....City Hall
Bid Opening Room Number: .....Council Room
Bid Deposit: .....5% of the Amount of Bid
Performance Bond:.....100% of the Amount of Bid

Obtain information from:
Ray Roberts
City of Zion
Public Works
2828 Sheridan Road
Zion, IL 60099

Submit Bids to:

City of Zion
City Hall
2828 Sheridan Road
Zion, IL 60099

Note: This cover sheet is an integral part of the contract documents and is, as are all of the following documents, part of any contract executed between the City of Zion and any successful BIDDER. Do not detach any portion of this document. Invalidation could result.



Local Public Agency	County	Section Number	Route(s) (Street/Road Name)
City of Zion	Lake		2023 Water Main Improvements

NOTICE TO BIDDERS

Sealed proposals for the project described below will be received at the office of Ray Roberts (Name of Office)

2828 Sheridan Road, Zion, IL 60099 (Address) until 10:00 AM (Time) on 12/05/23 (Date).

Sealed proposals will be opened and read publicly at the office of City Hall (Name of Office)

2828 Sheridan Road, Zion, IL 60099 (Address) at 10:00 AM (Time) on 12/05/23 (Date).

DESCRIPTION OF WORK

Location	Project Length
29th Street, 28th Street, and various Alleys within the City of Zion	4000 (.75 miles)

Proposed Improvement

New 8" and 10" Water Main, with pavement patching and all necessary restoration

1. Plans and proposal forms will be available in the office of

Christopher B. Burke Engineering, Ltd website, or 9575 W Higgins Road, Suite 600 Rosemont, Illinois 60018 or on Quest CDN, Project #8797232

2. ☐ Prequalification

   If checked, the 2 apparent as read low bidders must file within 24 hours after the letting an "Affidavit of Availability" (Form BC 57) in triplicate, showing all uncompleted contracts awarded to them and all low bids pending award for Federal, State, County, Municipal and private work. One original shall be filed with the Awarding Authority and two originals 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. Local Public Agency Formal Contract Proposal (BLR 12200)
   b. Schedule of Prices (BLR 12201)
   c. Proposal Bid Bond (BLR 12230) (if applicable)
   d. Apprenticeship or Training Program Certification (BLR 12325) (do not use for project with Federal funds.)
   e. Affidavit of Illinois Business Office (BLR 12326) (do not use for project with Federal funds)

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.

Local Public Agency	County	Section Number	Route(s) (Street/Road Name)
City of Zion	Lake		2023 Water Main Improvements

PROPOSAL

1. Proposal of _____
Contractor's Name

_____.
Contractor's Address

2. The plans for the proposed work are those prepared by Christopher B Burke Engineering, Ltd.
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 50 working days or by _____ unless additional time is granted in accordance with the specifications.

6. 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 of check shall be forfeited to the Awarding Authority.

7. 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 products 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. A bid may be declared unacceptable if neither a unit price nor a total price is shown.

8. The undersigned submits herewith the schedule of prices on BLR 12201 covering the work to be performed under this contract.

9. The undersigned further agrees that if awarded the contract for the sections contained in the combinations on BLR 12201, 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.

10. A proposal guaranty in the proper amount, as specified in BLRS Special Provision for Bidding Requirements and Conditions for Contract Proposals, will be required. Bid Bonds will be allowed as a proposal guaranty. Accompanying this proposal is either a bid bond, if allowed, on Department form BLR 12230 or a proposal guaranty check, complying with the specifications, made payable to: City of Zion Treasurer of _____.
The amount of the check is Five Percent Bid Bond (5%).

Attach Cashier's Check or Certified Check Here

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

The proposal guaranty check will be found in the bid proposal for: Section Number _____.

RETURN WITH BID

Illinois Department of Transportation

SCHEDULE OF PRICES

A bid will be declared unacceptable if neither a unit price nor total price is shown.

County Lake County
Local Public Agency Zion
Section N/A
Route N/A

Schedule for Multiple Bids

Combination Letter	Sections Included in Combinations	Total

Schedule for Single Bid

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

BASE BID - Bidder's Proposal for making Entire Improvements

Item No.	Items	Unit	Quantity	Unit Price	Total
20100110	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	UNIT	70		
28000510	INLET FILTERS	EACH	13		
*42400800	DETECTABLE WARNINGS	SQ FT	20		
44000600	SIDEWALK REMOVAL	SQ FT	460		
*56103000	DUCTILE IRON WATER MAIN 6"	FOOT	184		
*56103100	DUCTILE IRON WATER MAIN 8"	FOOT	2544		
*56103200	DUCTILE IRON WATER MAIN 10"	FOOT	430		
*56400820	FIRE HYDRANT WITH AUXILIARY VALVE AND VALVE BOX	EACH	4		
67100100	MOBILIZATION	L SUM	0.7		
78000400	THERMOPLASTIC PAVEMENT MARKING - LINE 6"	FOOT	120		
78000650	THERMOPLASTIC PAVEMENT MARKING - LINE 24"	FOOT	14		
*X0326862	STRUCTURES TO BE ADJUSTED	EACH	4		
*X4021000	TEMPORARY ACCESS (PRIVATE ENTRANCE)	EACH	9		
*X4023000	TEMPORARY ACCESS (ROAD)	EACH	7		
*X4400080	DRIVEWAY REMOVAL AND REPLACEMENT	SQ YD	35		
*X5610706	WATER MAIN REMOVAL, 6"	FOOT	90		
*X5610710	WATER MAIN REMOVAL, 10"	FOOT	20		
*X5640155	FIRE HYDRANTS TO BE REMOVED & SALVAGED	EACH	2		
*X8030106	LOCATING UNDERGROUND UTILITIES	FOOT	120		
*XX004689	SANITARY SERVICE TO BE ADJUSTED	EACH	20		
*XX006698	TREE PROTECTION AND PRESERVATION	EACH	20		
*XX006891	CIPP LINER FOR SANITARY SEWER MAIN 8"	FOOT	509		
*NA	ABANDON WATER MAIN AND APPURTENANCES	LSUM	0.7		
*NA	AS-BUILT DRAWINGS	LSUM	0.7		
*NA	BIKE PATH REMOVAL AND REPLACEMENT	SQ FT	435		
*NA	CLASS D PATCHES, 8" (SPECIAL)	SQ YD	1325		
*NA	COMBINATION CURB AND GUTTER REMOVAL AND REPLACEMENT	FOOT	370		
*NA	CONSTRUCTION LAYOUT	LSUM	0.7		
*NA	DUCTILE IRON WATER MAIN FITTINGS	POUND	6182		
*NA	GATE VALVES 10"	EACH	3		
*NA	GATE VALVES 8"	EACH	14		
*NA	ITEMS ORDERED BY THE ENGINEER	UNIT	28250	$1.00	$28,250.00
*NA	PORTLAND CEMENT CONCRETE SIDEWALK 5 INCH, SPECIAL	SQ FT	460		
*NA	PRECONSTRUCTION VIDEO TAPING	LSUM	0.7		
*NA	PRIVATE WATER SERVICE ASBESTOS ABATEMENT	EACH	5		
*NA	SANITARY SEWER POINT REPAIR (WATER MAIN REQUIREMENTS) 12 INCH	FOOT	36		
*NA	STORM SEWER POINT REPAIR (WATER MAIN REQUIREMENTS) 10 INCH	FOOT	30		
*NA	STORM SEWER POINT REPAIR (WATER MAIN REQUIREMENTS) 8 INCH	FOOT	74		
*NA	TRAFFIC CONTROL AND PROTECTION (SPECIAL)	LSUM	0.7		
*NA	TRENCH BACKFILL, SPECIAL	CU YD	2610		
*NA	VALVE BOX, 10"	EACH	3		
*NA	VALVE BOX, 8"	EACH	14		
*NA	WATER MAIN CASING PIPE, STEEL, 16"	FOOT	26		
*NA	WATER MAIN CONNECTION TO EXISTING WATER MAIN (NON-PRESSURE) - DISCONNECT AND CAP EXISTING	EACH	11		
*NA	WATER MAIN IN CASING, 8"	FOOT	30		
*NA	WATER MAIN LINE STOP 10"	EACH	2		
*NA	WATER MAIN LINE STOP 6"	EACH	5		
*NA	WATER SERVICE INTERIOR RESTORATION	EACH	5		
*NA	WATER SERVICE LINE (PRIVATE) - LEAD SERVICE REPLACEMENT	EACH	5		
*NA	WATER SERVICE REPLACEMENT WITH NEW BUFFALO BOX, 1" (LONG SIDE)	EACH	15		
*NA	WATER SERVICE REPLACEMENT WITH NEW BUFFALO BOX, 1" (SHORT SIDE)	EACH	15		
*NA	WATER SERVICE REPLACEMENT WITH NEW BUFFALO BOX, 1.5" (LONG SIDE)	EACH	5		
*NA	WATER SERVICE REPLACEMENT WITH NEW BUFFALO BOX, 1.5" (SHORT SIDE)	EACH	5		

Total Cost=

TOTAL COST IN WORDS

Illinois Department of Transportation

SCHEDULE OF PRICES

A bid will be declared unacceptable if neither a unit price nor total price is shown.

County Lake County
Local Public Agency Zion
Section N/A
Route N/A

Schedule for Multiple Bids

Combination Letter	Sections Included in Combinations	Total

Schedule for Single Bid

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

BASE BID + ALTERNATE 1 -Bidder's Proposal for making Entire Improvements

Item No.	Items	Unit	Quantity	Unit Price	Total
20100110	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	UNIT	70		
28000510	INLET FILTERS	EACH	15		
*42400800	DETECTABLE WARNINGS	SQ FT	30		
44000600	SIDEWALK REMOVAL	SQ FT	540		
*56103000	DUCTILE IRON WATER MAIN 6"	FOOT	207		
*56103100	DUCTILE IRON WATER MAIN 8"	FOOT	2749		
*56103200	DUCTILE IRON WATER MAIN 10"	FOOT	430		
*56400820	FIRE HYDRANT WITH AUXILIARY VALVE AND VALVE BOX	EACH	5		
67100100	MOBILIZATION	L SUM	0.8		
78000400	THERMOPLASTIC PAVEMENT MARKING - LINE 6"	FOOT	120		
78000650	THERMOPLASTIC PAVEMENT MARKING - LINE 24"	FOOT	14		
*X0326862	STRUCTURES TO BE ADJUSTED	EACH	4		
*X4021000	TEMPORARY ACCESS (PRIVATE ENTRANCE)	EACH	9		
*X4023000	TEMPORARY ACCESS (ROAD)	EACH	8		
*X4400080	DRIVEWAY REMOVAL AND REPLACEMENT	SQ YD	35		
*X5610706	WATER MAIN REMOVAL, 6"	FOOT	90		
*X5610710	WATER MAIN REMOVAL, 10"	FOOT	20		
*X5640155	FIRE HYDRANTS TO BE REMOVED & SALVAGED	EACH	3		
*X8030106	LOCATING UNDERGROUND UTILITIES	FOOT	140		
*XX004689	SANITARY SERVICE TO BE ADJUSTED	EACH	20		
*XX006698	TREE PROTECTION AND PRESERVATION	EACH	25		
*XX006891	CIPP LINER FOR SANITARY SEWER MAIN 8"	FOOT	509		
*NA	ABANDON WATER MAIN AND APPURTENANCES	LSUM	0.8		
*NA	AS-BUILT DRAWINGS	LSUM	0.8		
*NA	BIKE PATH REMOVAL AND REPLACEMENT	SQ FT	435		
*NA	CLASS D PATCHES, 8" (SPECIAL)	SQ YD	1336		
*NA	COMBINATION CURB AND GUTTER REMOVAL AND REPLACEMENT	FOOT	385		
*NA	CONSTRUCTION LAYOUT	LSUM	0.8		
*NA	DUCTILE IRON WATER MAIN FITTINGS	POUND	6643		
*NA	GATE VALVES 10"	EACH	3		
*NA	GATE VALVES 8"	EACH	15		
*NA	ITEMS ORDERED BY THE ENGINEER	UNIT	30500	$1.00	$30,500.00
*NA	PORTLAND CEMENT CONCRETE SIDEWALK 5 INCH, SPECIAL	SQ FT	540		
*NA	PRECONSTRUCTION VIDEO TAPING	LSUM	0.8		
*NA	PRIVATE WATER SERVICE ASBESTOS ABATEMENT	EACH	5		
*NA	SANITARY SEWER POINT REPAIR (WATER MAIN REQUIREMENTS) 12 INCH	FOOT	36		
*NA	STORM SEWER POINT REPAIR (WATER MAIN REQUIREMENTS) 10 INCH	FOOT	30		
*NA	STORM SEWER POINT REPAIR (WATER MAIN REQUIREMENTS) 8 INCH	FOOT	74		
*NA	TRAFFIC CONTROL AND PROTECTION (SPECIAL)	LSUM	0.8		
*NA	TRENCH BACKFILL, SPECIAL	CU YD	2868		
*NA	VALVE BOX, 10"	EACH	3		
*NA	VALVE BOX, 8"	EACH	15		
*NA	WATER MAIN CASING PIPE, STEEL, 16"	FOOT	26		
*NA	WATER MAIN CONNECTION TO EXISTING WATER MAIN (NON-PRESSURE) - DISCONNECT AND CAP EXISTING	EACH	12		
*NA	WATER MAIN IN CASING, 8"	FOOT	30		
*NA	WATER MAIN LINE STOP 10"	EACH	2		
*NA	WATER MAIN LINE STOP 6"	EACH	6		
*NA	WATER SERVICE INTERIOR RESTORATION	EACH	5		
*NA	WATER SERVICE LINE (PRIVATE) - LEAD SERVICE REPLACEMENT	EACH	5		
*NA	WATER SERVICE REPLACEMENT WITH NEW BUFFALO BOX, 1" (LONG SIDE)	EACH	15		
*NA	WATER SERVICE REPLACEMENT WITH NEW BUFFALO BOX, 1" (SHORT SIDE)	EACH	15		
*NA	WATER SERVICE REPLACEMENT WITH NEW BUFFALO BOX, 1.5" (LONG SIDE)	EACH	5		
*NA	WATER SERVICE REPLACEMENT WITH NEW BUFFALO BOX, 1.5" (SHORT SIDE)	EACH	5		

Total Cost=

TOTAL COST IN WORDS

RETURN WITH BID

Illinois Department of Transportation

SCHEDULE OF PRICES

A bid will be declared unacceptable if neither a unit price nor total price is shown.

County Lake County
Local Public Agency Zion
Section N/A
Route N/A

Schedule for Multiple Bids

Combination Letter	Sections Included in Combinations	Total

Schedule for Single Bid

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

BASE BID + ALTERNATE 1 + ALTERNATE 2 -Bidder's Proposal for making Entire Improvements

Item No.	Items	Unit	Quantity	Unit Price	Total
20100110	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	UNIT	70		
28000510	INLET FILTERS	EACH	19		
*42400800	DETECTABLE WARNINGS	SQ FT	30		
44000600	SIDEWALK REMOVAL	SQ FT	540		
*56103000	DUCTILE IRON WATER MAIN 6"	FOOT	212		
*56103100	DUCTILE IRON WATER MAIN 8"	FOOT	3024		
*56103200	DUCTILE IRON WATER MAIN 10"	FOOT	430		
*56400820	FIRE HYDRANT WITH AUXILIARY VALVE AND VALVE BOX	EACH	5		
67100100	MOBILIZATION	L SUM	0.9		
78000400	THERMOPLASTIC PAVEMENT MARKING - LINE 6"	FOOT	240		
78000650	THERMOPLASTIC PAVEMENT MARKING - LINE 24"	FOOT	28		
*X0326862	STRUCTURES TO BE ADJUSTED	EACH	5		
*X4021000	TEMPORARY ACCESS (PRIVATE ENTRANCE)	EACH	9		
*X4023000	TEMPORARY ACCESS (ROAD)	EACH	9		
*X4400080	DRIVEWAY REMOVAL AND REPLACEMENT	SQ YD	35		
*X5610706	WATER MAIN REMOVAL, 6"	FOOT	90		
*X5610710	WATER MAIN REMOVAL, 10"	FOOT	20		
*X5640155	FIRE HYDRANTS TO BE REMOVED & SALVAGED	EACH	3		
*X8030106	LOCATING UNDERGROUND UTILITIES	FOOT	160		
*XX004689	SANITARY SERVICE TO BE ADJUSTED	EACH	20		
*XX006698	TREE PROTECTION AND PRESERVATION	EACH	30		
*XX006891	CIPP LINER FOR SANITARY SEWER MAIN 8"	FOOT	509		
*NA	ABANDON WATER MAIN AND APPURTENANCES	LSUM	0.9		
*NA	AS-BUILT DRAWINGS	LSUM	0.9		
*NA	BIKE PATH REMOVAL AND REPLACEMENT	SQ FT	435		
*NA	CLASS D PATCHES, 8" (SPECIAL)	SQ YD	1506		
*NA	COMBINATION CURB AND GUTTER REMOVAL AND REPLACEMENT	FOOT	395		
*NA	CONSTRUCTION LAYOUT	LSUM	0.9		
*NA	DUCTILE IRON WATER MAIN FITTINGS	POUND	6858		
*NA	GATE VALVES 10"	EACH	3		
*NA	GATE VALVES 8"	EACH	16		
*NA	ITEMS ORDERED BY THE ENGINEER	UNIT	32750	$1.00	$32,750.00
*NA	PORTLAND CEMENT CONCRETE SIDEWALK 5 INCH, SPECIAL	SQ FT	540		
*NA	PRECONSTRUCTION VIDEO TAPING	LSUM	0.9		
*NA	PRIVATE WATER SERVICE ASBESTOS ABATEMENT	EACH	5		
*NA	SANITARY SEWER POINT REPAIR (WATER MAIN REQUIREMENTS) 12 INCH	FOOT	36		
*NA	STORM SEWER POINT REPAIR (WATER MAIN REQUIREMENTS) 10 INCH	FOOT	30		
*NA	STORM SEWER POINT REPAIR (WATER MAIN REQUIREMENTS) 8 INCH	FOOT	74		
*NA	TRAFFIC CONTROL AND PROTECTION (SPECIAL)	LSUM	0.9		
*NA	TRENCH BACKFILL, SPECIAL	CU YD	3207		
*NA	VALVE BOX, 10"	EACH	3		
*NA	VALVE BOX, 8"	EACH	16		
*NA	WATER MAIN CASING PIPE, STEEL, 16"	FOOT	26		
*NA	WATER MAIN CONNECTION TO EXISTING WATER MAIN (NON-PRESSURE) - DISCONNECT AND CAP EXISTING	EACH	13		
*NA	WATER MAIN IN CASING, 8"	FOOT	30		
*NA	WATER MAIN LINE STOP 10"	EACH	2		
*NA	WATER MAIN LINE STOP 6"	EACH	7		
*NA	WATER SERVICE INTERIOR RESTORATION	EACH	5		
*NA	WATER SERVICE LINE (PRIVATE) - LEAD SERVICE REPLACEMENT	EACH	5		
*NA	WATER SERVICE REPLACEMENT WITH NEW BUFFALO BOX, 1" (LONG SIDE)	EACH	15		
*NA	WATER SERVICE REPLACEMENT WITH NEW BUFFALO BOX, 1" (SHORT SIDE)	EACH	15		
*NA	WATER SERVICE REPLACEMENT WITH NEW BUFFALO BOX, 1.5" (LONG SIDE)	EACH	5		
*NA	WATER SERVICE REPLACEMENT WITH NEW BUFFALO BOX, 1.5" (SHORT SIDE)	EACH	5		

Total Cost=

TOTAL COST IN WORDS

RETURN WITH BID

Illinois Department of Transportation

SCHEDULE OF PRICES

A bid will be declared unacceptable if neither a unit price nor total price is shown.

County Lake County
Local Public Agency Zion
Section N/A
Route N/A

Schedule for Multiple Bids

Combination Letter	Sections Included in Combinations	Total

Schedule for Single Bid

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

BASE BID + ALTERNATE 1 + ALTERNATE 2 + ALTERNATE 3 -Bidder's Proposal for making Entire Improvements

Item No.	Items	Unit	Quantity	Unit Price	Total
20100110	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	UNIT	70		
28000510	INLET FILTERS	EACH	19		
*42400800	DETECTABLE WARNINGS	SQ FT	30		
44000600	SIDEWALK REMOVAL	SQ FT	540		
*56103000	DUCTILE IRON WATER MAIN 6"	FOOT	232		
*56103100	DUCTILE IRON WATER MAIN 8"	FOOT	3594		
*56103200	DUCTILE IRON WATER MAIN 10"	FOOT	430		
*56400820	FIRE HYDRANT WITH AUXILIARY VALVE AND VALVE BOX	EACH	6		
67100100	MOBILIZATION	L SUM	1		
78000400	THERMOPLASTIC PAVEMENT MARKING - LINE 6"	FOOT	240		
78000650	THERMOPLASTIC PAVEMENT MARKING - LINE 24"	FOOT	28		
*X0326862	STRUCTURES TO BE ADJUSTED	EACH	5		
*X4021000	TEMPORARY ACCESS (PRIVATE ENTRANCE)	EACH	17		
*X4023000	TEMPORARY ACCESS (ROAD)	EACH	10		
*X4400080	DRIVEWAY REMOVAL AND REPLACEMENT	SQ YD	35		
*X5610706	WATER MAIN REMOVAL, 6"	FOOT	100		
*X5610710	WATER MAIN REMOVAL, 10"	FOOT	20		
*X5640155	FIRE HYDRANTS TO BE REMOVED & SALVAGED	EACH	4		
*X8030106	LOCATING UNDERGROUND UTILITIES	FOOT	180		
*XX004689	SANITARY SERVICE TO BE ADJUSTED	EACH	20		
*XX006698	TREE PROTECTION AND PRESERVATION	EACH	35		
*XX006891	CIPP LINER FOR SANITARY SEWER MAIN 8"	FOOT	1059		
*NA	ABANDON WATER MAIN AND APPURTENANCES	LSUM	1		
*NA	AS-BUILT DRAWINGS	LSUM	1		
*NA	BIKE PATH REMOVAL AND REPLACEMENTBIKE PATH REMOVAL AND REPLACEMENT	SQ FT	435		
*NA	CLASS D PATCHES, 8" (SPECIAL)	SQ YD	1826		
*NA	COMBINATION CURB AND GUTTER REMOVAL AND REPLACEMENT	FOOT	395		
*NA	CONSTRUCTION LAYOUT	LSUM	1		
*NA	DUCTILE IRON WATER MAIN FITTINGS	POUND	7022		
*NA	GATE VALVES 10"	EACH	3		
*NA	GATE VALVES 8"	EACH	17		
*NA	ITEMS ORDERED BY THE ENGINEER	UNIT	35000	$1.00	$35,000.00
*NA	PORTLAND CEMENT CONCRETE SIDEWALK 5 INCH, SPECIAL	SQ FT	540		
*NA	PRECONSTRUCTION VIDEO TAPING	LSUM	1		
*NA	PRIVATE WATER SERVICE ASBESTOS ABATEMENT	EACH	5		
*NA	SANITARY SEWER POINT REPAIR (WATER MAIN REQUIREMENTS) 12 INCH	FOOT	36		
*NA	STORM SEWER POINT REPAIR (WATER MAIN REQUIREMENTS) 10 INCH	FOOT	30		
*NA	STORM SEWER POINT REPAIR (WATER MAIN REQUIREMENTS) 8 INCH	FOOT	74		
*NA	TRAFFIC CONTROL AND PROTECTION (SPECIAL)	LSUM	1		
*NA	TRENCH BACKFILL, SPECIAL	CU YD	3901		
*NA	VALVE BOX, 10"	EACH	3		
*NA	VALVE BOX, 8"	EACH	17		
*NA	WATER MAIN CASING PIPE, STEEL, 16"	FOOT	26		
*NA	WATER MAIN CONNECTION TO EXISTING WATER MAIN (NON-PRESSURE) - DISCONNECT AND CAP EXISTING	EACH	15		
*NA	WATER MAIN IN CASING, 8"	FOOT	30		
*NA	WATER MAIN LINE STOP 10"	EACH	2		
*NA	WATER MAIN LINE STOP 6"	EACH	8		
*NA	WATER SERVICE INTERIOR RESTORATION	EACH	5		
*NA	WATER SERVICE LINE (PRIVATE) - LEAD SERVICE REPLACEMENT	EACH	5		
*NA	WATER SERVICE REPLACEMENT WITH NEW BUFFALO BOX, 1" (LONG SIDE)	EACH	20		
*NA	WATER SERVICE REPLACEMENT WITH NEW BUFFALO BOX, 1" (SHORT SIDE)	EACH	20		
*NA	WATER SERVICE REPLACEMENT WITH NEW BUFFALO BOX, 1.5" (LONG SIDE)	EACH	5		
*NA	WATER SERVICE REPLACEMENT WITH NEW BUFFALO BOX, 1.5" (SHORT SIDE)	EACH	5		

Total Cost=

TOTAL COST IN WORDS

Local Public Agency	County	Section Number	Route(s) (Street/Road Name)
City of Zion	Lake		2023 Water Main Improvements

CONTRACTOR CERTIFICATIONS

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

1. **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 procedure established by the appropriate Revenue Act, its liability for the tax or the amount of the tax. Making a false statement voids the contract and allows the Department to recover all amounts paid to the individual or entity under the contract in a civil action.

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

   A violation of section 33E-3 would be represented by a conviction of the crime of bid-rigging which, in addition to Class 3 felony sentencing, provides that any person convicted of this offense, or any similar offense of any state or the United States which contains the same elements as this offense shall be barred for 5 years from the date of conviction from contracting with any unit of State or local government. No corporation shall be barred from contracting with any unit of State or local government as a result of a conviction under this Section of any employee or agent of such corporation if the employee so convicted is no longer employed by the corporation: (1) it has been finally adjudicated not guilty or (2) if it demonstrates to the governmental entity with which it seeks to contract 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 on 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 of 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 on behalf of the corporation.

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

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

Local Public Agency	County	Section Number	Route(s) (Street/Road Name)
City of Zion	Lake		2023 Water Main Improvements

SIGNATURES

(If an individual)

Bidder Signature & Date

Business Address

City | State | Zip Code

(If a partnership)

Firm Name

Signature & Date

Title

Business Address

City | State | Zip Code

Insert the Names and Addresses of all Partners

(If a corporation)

Corporate Name

Signature & Date

Title

Business Address

City | State | Zip Code

Insert Names of Officers

President

Secretary

Attest:

Secretary

Treasurer

Illinois Department of Transportation

Local Public Agency Proposal Bid Bond

Local Public Agency	County	Section Number
City of Zion	Lake	

WE, _____ as PRINCIPAL, and

_____ as SURETY, are held jointly, severally and firmly bound unto the above Local Public Agency (hereafter referred to as "LPA") 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 LPA 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 LPA 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 LPA 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 LPA determines the PRINCIPAL has failed to enter into a formal contract in compliance with any requirements set forth in the preceding paragraph, then the LPA 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 _____ (Month and Year)

Principal

Company Name	Company Name
Signature & Date	Signature & Date
By:	By:
Title	Title

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

Surety

Name of Surety	Signature of Attorney-in-Fact Signature & Date
	By:

STATE OF IL

COUNTY OF LAKE

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) day of _____ (Month and Year) .

Notary Public Signature & Date

(SEAL, if required by the LPA)

Date commission expires _____

Local Public Agency	County	Section Number
City of Zion	Lake	

ELECTRONIC BID BOND

☐ **Electronic bid bond is allowed (box must be checked by LPA 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 LPA 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 & Date

Title

INDEX
FOR
SUPPLEMENTAL SPECIFICATIONS
AND RECURRING SPECIAL PROVISIONS

Adopted January 1, 2024

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 1-1-22) (Revised 1-1-24)

SUPPLEMENTAL SPECIFICATIONS

Illinois Department of Transportation

Check Sheet for Recurring Special Provisions

Local Public Agency	County	Section Number
City of Zion	Lake	

☐ **Check this box for lettings prior to 01/01/2023.**

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

Recurring Special Provisions

Check Sheet #			Page No.
1	☐	Additional State Requirements for Federal-Aid Construction Contracts	53
2	☐	Subletting of Contracts (Federal-Aid Contracts)	56
3	☐	EEO	57
4	☐	Specific EEO Responsibilities Non Federal-Aid Contracts	67
5	☐	Required Provisions - State Contracts	72
6	☐	Asbestos Bearing Pad Removal	78
7	☐	Asbestos Waterproofing Membrane and Asbestos HMA Surface Removal	79
8	☐	Temporary Stream Crossings and In-Stream Work Pads	80
9	☐	Construction Layout Stakes	81
10	☐	Use of Geotextile Fabric for Railroad Crossing	84
11	☐	Subsealing of Concrete Pavements	86
12	☐	Hot-Mix Asphalt Surface Correction	90
13	☐	Pavement and Shoulder Resurfacing	92
14	☐	Patching with Hot-Mix Asphalt Overlay Removal	93
15	☐	Polymer Concrete	95
16	☐	Reserved	97
17	☐	Bicycle Racks	98
18	☐	Temporary Portable Bridge Traffic Signals	100
19	☐	Nighttime Inspection of Roadway Lighting	102
20	☐	English Substitution of Metric Bolts	103
21	☐	Calcium Chloride Accelerator for Portland Cement Concrete	104
22	☐	Quality Control of Concrete Mixtures at the Plant	105
23	☐	Quality Control/Quality Assurance of Concrete Mixtures	113
24	☐	Reserved	129
25	☐	Reserved	130
26	☐	Temporary Raised Pavement Markers	131
27	☐	Restoring Bridge Approach Pavements Using High-Density Foam	132
28	☐	Portland Cement Concrete Inlay or Overlay	135
29	☐	Portland Cement Concrete Partial Depth Hot-Mix Asphalt Patching	139
30	☐	Longitudinal Joint and Crack Patching	142
31	☐	Concrete Mix Design - Department Provided	144
32	☐	Station Numbers in Pavements or Overlays	145

Local Public Agency	County	Section Number
City of Zion	Lake	

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

Check Sheet #			Page No.
LRS 1		**Reserved**	147
LRS 2	☐	Furnished Excavation	148
LRS 3	☒	Work Zone Traffic Control Surveillance	149
LRS 4	☒	Flaggers in Work Zones	150
LRS 5	☒	Contract Claims	151
LRS 6	☒	Bidding Requirements and Conditions for Contract Proposals	152
LRS 7	☐	Bidding Requirements and Conditions for Material Proposals	158
LRS 8		**Reserved**	164
LRS 9	☐	Bituminous Surface Treatments	165
LRS 10		**Reserved**	169
LRS 11	☒	Employment Practices	170
LRS 12	☒	Wages of Employees on Public Works	172
LRS 13	☒	Selection of Labor	174
LRS 14	☐	Paving Brick and Concrete Paver Pavements and Sidewalks	175
LRS 15	☒	Partial Payments	178
LRS 16	☐	Protests on Local Lettings	179
LRS 17	☒	Substance Abuse Prevention Program	180
LRS 18	☐	Multigrade Cold Mix Asphalt	181
LRS 19	☐	Reflective Crack Control Treatment	182

BDE SPECIAL PROVISIONS
For the August 4, 2023 and September 22, 2023 Lettings

The following special provisions indicated by a “check mark” are applicable to this contract and will be included by the Project Coordination and Implementation Section of the Bureau of Design & Environment (BDE).

File Name	#		Special Provision Title	Effective	Revised
80099	1	☐	Accessible Pedestrian Signals (APS)	April 1, 2003	Jan. 1, 2022
80274	2	☐	Aggregate Subgrade Improvement	April 1, 2012	April 1, 2022
80192	3	☐	Automated Flagger Assistance Devices	Jan. 1, 2008	April 1, 2023
80173	4	☐	Bituminous Materials Cost Adjustments	Nov. 2, 2006	Aug. 1, 2017
80426	5	☐	Bituminous Surface Treatment with Fog Seal	Jan. 1, 2020	Jan. 1, 2022
80436	6	☐	Blended Finely Divided Minerals	April 1, 2021	
* 80241	7	☐	Bridge Demolition Debris	July 1, 2009	
* 5053I	8	☐	Building Removal	Sept. 1, 1990	Aug. 1, 2022
* 5026I	9	☐	Building Removal with Asbestos Abatement	Sept. 1, 1990	Aug. 1, 2022
80449	10	☐	Cement, Type IL	Aug. 1, 2023	
80384	11	☐	Compensable Delay Costs	June 2, 2017	April 1, 2019
* 80198	12	☐	Completion Date (via calendar days)	April 1, 2008	
* 80199	13	☐	Completion Date (via calendar days) Plus Working Days	April 1, 2008	
80261	14	☐	Construction Air Quality – Diesel Retrofit	June 1, 2010	Nov. 1, 2014
80434	15	☐	Corrugated Plastic Pipe (Culvert and Storm Sewer)	Jan. 1, 2021	
* 80029	16	☐	Disadvantaged Business Enterprise Participation	Sept. 1, 2000	Mar. 2, 2019
80229	17	☐	Fuel Cost Adjustment	April 1, 2009	Aug. 1, 2017
80447	18	☐	Grading and Shaping Ditches	Jan. 1, 2023	
80433	19	☐	Green Preformed Thermoplastic Pavement Markings	Jan. 1, 2021	Jan. 1, 2022
80443	20	☐	High Tension Cable Median Barrier Removal	April 1, 2022	
80446	21	☐	Hot-Mix Asphalt - Longitudinal Joint Sealant	Nov. 1, 2022	Aug. 1, 2023
80438	22	☐	Illinois Works Apprenticeship Initiative – State Funded Contracts	June 2, 2021	Sept. 2, 2021
80045	23	☐	Material Transfer Device	June 15, 1999	Jan. 1, 2022
80450	24	☐	Mechanically Stabilized Earth Retaining Walls	Aug. 1, 2023	
80441	25	☐	Performance Graded Asphalt Binder	Jan. 1, 2023	
80451	26	☐	Portland Cement Concrete	Aug. 1, 2023	
* 3426I	27	☐	Railroad Protective Liability Insurance	Dec. 1, 1986	Jan. 1, 2022
80445	28	☐	Seeding	Nov. 1, 2022	
80448	29	☐	Source of Supply and Quality Requirements	Jan. 2, 2023	
80340	30	☐	Speed Display Trailer	April 2, 2014	Jan. 1, 2022
80127	31	☐	Steel Cost Adjustment	April 2, 2004	Jan. 1, 2022
80397	32	☐	Subcontractor and DBE Payment Reporting	April 2, 2018	
80391	33	☐	Subcontractor Mobilization Payments	Nov. 2, 2017	April 1, 2019
80437	34	☐	Submission of Payroll Records	April 1, 2021	Nov. 1, 2022
80435	35	☐	Surface Testing of Pavements – IRI	Jan. 1, 2021	Jan. 1, 2023
80410	36	☐	Traffic Spotters	Jan. 1, 2019	
* 20338	37	☐	Training Special Provisions	Oct. 15, 1975	Sept. 2, 2021
80429	38	☐	Ultra-Thin Bonded Wearing Course	April 1, 2020	Jan. 1, 2022
80439	39	☐	Vehicle and Equipment Warning Lights	Nov. 1, 2021	Nov. 1, 2022
80440	40	☐	Waterproofing Membrane System	Nov. 1, 2021	
80302	41	☐	Weekly DBE Trucking Reports	June 2, 2012	Nov. 1, 2021
80427	42	☐	Work Zone Traffic Control Devices	Mar. 2, 2020	
* 80071	43	☐	Working Days	Jan. 1, 2002	

Highlighted items indicate a new or revised special provision for the letting.

An * indicates the special provision requires additional information from the designer, which needs to be submitted separately. The Project Coordination and Implementation Section will then include the information in the applicable special provision.

The following special provisions have been deleted from use.

File Name	Special Provision Title	Effective	Revised
5048I	Building Removal-Case II (Non-Friable Asbestos)	Sept. 1, 1990	April 1, 2010
5049I	Building Removal-Case III (Friable Asbestos)	Sept. 1, 1990	April 1, 2010

The following special provisions are in the 2023 Supplemental Specifications and Recurring Special Provisions.

File Name	Special Provision Title	New Location(s)	Effective	Revised
80293	Concrete Box Culverts with Skews > 30 Degrees and Design Fills ≤ 5 Feet	Articles 540.04 & 540.06	April 1, 2012	July 1, 2016
80311	Concrete End Sections for Pipe Culverts	Articles 540.07, 542.01, 542.02, 542.07, 542.11 & 542.12	Jan. 1, 2013	April 1, 2016
80422	High Tension Cable Median Barrier	Articles 644.02, 644.05, 782.01, 782.04, 782.07 & 1097.02	Jan. 1, 2020	Jan. 1, 2022
80442	Hot-Mix Asphalt	Articles 1030.09 & 1030.10	Jan. 1, 2022	Aug. 1, 2022
80444	Hot-Mix Asphalt – Patching	Errata – Article 442.08(b)	April 1, 2022	
80411	Luminaires, LED	Articles 801.05(a), 821.02(d), 821.03, 821.08 & 1067.01-1067.06	April 1, 2019	Jan. 1, 2022
80418	Mechanically Stabilized Earth Retaining Walls	Articles 1003.07 & 1004.06	Nov. 1, 2019	Nov. 1, 2020
80430	Portland Cement Concrete – Haul Time	Article 1020.11(a)(7)	July 1, 2020	
80395	Sloped Metal End Section for Pipe Culverts	Articles 540.07, 542.01, 542.02, 542.07, 542.11 & 542.12	Jan. 1, 2018	
80318	Traversable Pipe Grate for Concrete End Sections	Articles 540.04, 540.07, 540.08 & 542.01, 542.02, 542.07, 542.11 & 542.12	Jan. 1, 2013	Jan. 1, 2018

TABLE OF CONTENTS

GENERAL PROVISIONS

DEFINITIONS

The term "CITY" whenever used in the contract documents shall be construed to mean the City of Zion, Lake County, Illinois.

The term "ENGINEER" whenever used in the contract documents shall be construed to mean the City Engineer of the City of Zion or the appointed representative.

The term "BIDDER" whenever used in the contract documents shall be construed to mean any person or firm submitting a bid to the CITY or its appointed representative.

The term "CONTRACTOR" whenever used in the contract documents shall be construed to mean any person or firm having a contract with the CITY for the work so specified or its appointed representative.

The term "STANDARD SPECIFICATIONS" whenever used in this document shall be construed to mean the "Standard Specifications for Road and Bridge Construction" and "Supplemental Specifications and Recurring Special Provisions", adopted January 1, 2023 , as amended; the "Standard Specifications for Traffic Control Items"; and the latest edition of the "Illinois Manual on Uniform Traffic Control Devices for Streets and Highways" in effect; all issued by the State of Illinois, Department of Transportation.

The term "WATER AND SEWER SPECIFICATIONS" whenever used in this document shall be construed to mean the "Standard Specifications for Water and Sewer Main Construction in Illinois", Eight Edition, adopted July 2020, available from the Associated General Contractors of Illinois or the Illinois Society of Professional Engineers.

PREPARATION OF BID

The BIDDER shall prepare proposal on the attached proposal forms furnished by the CITY. Do not detach any portion of this document. Invalidation could result.

All blank spaces on the proposal page or pages, applicable to the subject specification, must be correctly completed in ink or type written. All signatures must be completed in ink.

The total bid amount is to be shown in both words and figures where indicated. In case of a discrepancy between words and figures, the words shall prevail, unless it clearly appears in the CITY'S opinion that the words rather than the figures are in error. BIDDERS are warned against making any erasures or alterations of any kind, and Proposals which contain omissions, erasures, conditions, alterations, or additions not called for may be rejected.

If BIDDER is a corporation, the President and Secretary shall execute the bid and the corporate seal shall be affixed. In the event this bid is executed by other than the President, attach hereto a certified copy of that section of corporate by-laws or other authorization by the corporation which permits the person to execute the offer for the corporation.

If BIDDER is a partnership, all partners shall execute the bid, unless one partner has been authorized to sign for the partnership, in which case, evidence of such authority satisfactory to the Director of Public Works shall be submitted.

CONDITIONS

BIDDERS are responsible to become familiar with all conditions, instructions, and contract documents governing this bid and shall inspect the site and conditions pertinent to the work involved. Submission of a bid will be considered specific evidence of having performed the above. Failure to make such an inspection shall not excuse the CONTRACTOR from performance of the duties and obligations imposed under the terms of the contract. Once the award has been made, failure to have read all the conditions, instructions and specifications of this contract shall not be cause to alter the original contract or to request additional compensation.

PREVAILING WAGES

The CITY requires all construction CONTRACTORS bidding on CITY projects to be governed by the Illinois Prevailing Wage Act as defined in Section 2 of the Prevailing Wage Act (820 ILCS 130/2). Prevailing wage rate updates can be obtained by calling the Illinois Department of Labor at (312) 793-2914, or writing to the Illinois Department of Labor at: 310 S. Michigan Avenue, 10th Floor, Chicago, Illinois 60604, or calling the City of Zion at (847) 746-4050.

BID SECURITY

When required on the cover sheet, all bids shall be accompanied by a bid security in the amount specified. Bid securities shall be in the form of a bid bond, a certified check or cashier's check drawn on a responsible bank doing business in the United States and shall be made payable to the City of Zion. All bids not accompanied by a bid security, when required, will be rejected.

The bid security of all except the three (3) lowest responsive and responsible BIDDERS on each contract will be returned within fourteen (14) calendar days after the opening of the bid. The bid security of the successful BIDDER will be returned after acceptance by the CITY of satisfactory performance bond. The remaining bid securities of each BIDDER will be returned within fourteen (14) days after the City Board has awarded the contract.

SUBMISSION OF BID

All bids must be delivered to the City Hall by the specified opening time of the bid. Bids arriving after the specified time will not be accepted. Mailed bids arriving after the specified time will not be accepted regardless of post marked time on the envelope and will be returned unopened.

All bids should be submitted in a sealed envelope. The envelope must be clearly marked with the project name and with: BIDDER'S name, address, bid opening location, date and time.

WITHDRAWAL OF BID

BIDDERS may withdraw or cancel their proposals at any time prior to the advertised bid opening time by signing a request therefore. After the bid opening time, no bid shall be withdrawn or canceled for a period of ninety (90) calendar days. The successful BIDDER shall not withdraw or cancel its proposal after having been notified by the CITY that said bid has been accepted by the City Board.

DISQUALIFICATION OF BIDS

The following will be cause for disqualification of bids:

a. Prices excessively high and/or exceed monies available for the intended work;
b. Failure to submit bid security or surety;
c. Failure to offer to meet specified delivery or performance schedules;
d. Failure to price out the bid in conformance to the required format; or qualification of price to protect the BIDDER from unknown future market conditions;
e. Rights of the CITY limited under any contract clause;
f. Reasonable basis to suspect either conflict of interest or collusion among BIDDERS;
g. BIDDER fails to submit required information, literature, or affidavits with bid;
h. Late bids;
i. Failure of any authorized person to sign any required forms or to sign the bid; and
j. BIDDER is prohibited by local, state or federal law from entering into public contracts.

CONSIDERATION OF BIDS

No proposal will be accepted from or contract awarded to any person, firm or corporation that is in arrears or is in default to the CITY upon any debt or contract, or that is a defaulter, as surety or otherwise, upon any obligation to said CITY, or that has failed to perform faithfully any previous contract with the CITY.

The CITY shall accept the bid of the lowest responsible BIDDER on the basis of the bid that is in the best interest of the CITY to accept. In awarding the contract, in addition to price, the CITY shall consider the following:

a. The ability, capacity, and skill of the BIDDER to perform the contract to provide the service required;
b. Whether the BIDDER can perform the contract or provide the service promptly, or within the time specified, without delay or interference;
c. The character, integrity, reputation, judgment, experience, and efficiency of the BIDDER;
d. The quality of performance of previous contracts of services;
e. The previous and existing compliance by the BIDDER with laws and ordinances relating to the contract or service;
f. The sufficiency of the financial resources and ability of the BIDDER to perform the contract or provide the service;

g. The quality, availability, and adaptability of the supplies or contractual services to the particular use required;
h. The ability of the BIDDER to provide future maintenance and service for the use of the subject of the contract;
i. The number and scope of conditions attached to the bid;
j. Whether the BIDDER has a place of business in the CITY;
k. Responsiveness to the exact requirements of the invitation to bid;
l. Ability to work cooperatively with the CITY and its administration; and
m. Past records of the BIDDER'S transaction with the CITY or with other entities as evidence of the BIDDER'S responsibility, character, integrity, reputation, judgment, experience, efficiency, and cooperativeness.

The CITY may reject any and all bids, and may order a re-advertisement for new bids.

The CITY reserves the right to accept or reject any and all proposals or to waive technicalities, and to disregard any informality on the bids and bidding, when in its opinion the best interest of the CITY will be served by such actions.

The bid shall be awarded to the lowest responsible BIDDER who submits the responsive bid that is most advantageous to the public. Written notification of award of contract will be mailed to the lowest responsible BIDDER within seven (7) working days of the Mayor and City Council's decision.

Failure on the part of the successful BIDDER to execute a contract within fifteen (15) calendar days of its receipt or to provide an acceptable performance bond shall be considered just cause to withdraw the award. In such case the bid security shall be forfeited as liquidated damages and not as a penalty.

COMPETENCY OF BIDDER

The BIDDER, if requested in writing, must present within three (3) working days, evidence satisfactory to the Director of Public Works of ability and possession of necessary facilities, prior experience, financial resources, and adequate insurance to comply with the terms of these contract documents.

COLLUSION

Identical bids may be reported to the Justice Department, in conformance to the President's Executive Order No. 10936, 26 F.R. 3555 (1961), and to local or state investigative bodies.

PERFORMANCE BOND

The successful BIDDER must furnish and pay for satisfactory Performance and Labor and Material Payment Bonds in the amount of one hundred (100) percent of the contract sum. Said Bonds shall be in a form acceptable to the CITY, shall be deposited with the CITY at the time of execution of the contract and shall provide that they shall not terminate on completion of the work, but shall be reduced to ten (10) percent of the contract sum upon completion of the work for a period of one (1) year to cover the one (1) year guaranty and maintenance period. Execution of any contract by the CITY is contingent upon the provision of the required Bond by the successful BIDDER. Failure to furnish the required bond within the time specified may be cause for withdrawal of the award.

SUBLETTING OF CONTRACT

The CONTRACTOR may sublet portions of the work, however each subcontract must be approved by the Director of Public Works in writing prior to commencement of work. In no case shall such consent relieve the CONTRACTOR from its obligation or change the terms of the contract. At all times the CONTRACTOR shall maintain no less than fifty (50) percent of the dollar value of the contract by direct employees of the CONTRACTOR.

DIRECTION OF WORK

The CONTRACTOR shall commence the work at such points as the CITY may direct. The CONTRACTOR shall conform to any and all directions as to the order, manner, or time in which the different parts of the work shall be done. All verbal or written instructions from the CITY in explanation of the contract documents made during the progress of the work must be strictly obeyed by the CONTRACTOR as though they had been fully written herein. All such explanations of said contract documents shall be final and conclusive. When more than one kind of material is mentioned in these specifications the CITY shall approve the material to be used.

INTERPRETATION OF CONTRACT DOCUMENTS

The CITY shall in all cases determine the amount or quantity of the several kinds of work which are to be paid for under this contract, and shall decide all questions which may arise relative to the execution of the contract on the part of the CONTRACTOR, and all estimates and decisions shall be final and conclusive. The CITY shall have the right to make alterations in the lines, grades, plans, forms, or dimensions of the work herein contemplated either before or after the commencement of the work. If such alterations diminish the quantity of the work to be done, they shall not constitute a claim for damage or for anticipated profits on the work dispensed with, or if they increase the amount of work, such increase shall be paid according to the quantity actually done and at the price or prices stipulated for such work in the contract. The CITY hereby reserves the right to approve as an equal, or to reject as not being an equal, any article the CONTRACTOR proposes to furnish under the terms of the contract.

PROGRESS OF THE WORK

If the CONTRACTOR shall assign this contract or abandon the work or shall neglect or refuse to comply with the instructions of the CITY relative thereto or shall fail in any manner to comply with the specifications or stipulations herein contained or if at any time the CITY shall be of the opinion that the work is unnecessarily delayed and will not be finished within the prescribed time, or that unnecessary inconvenience is being imposed upon the public or unnecessary expense is being incurred by the CITY for inspection and supervision, the CITY shall notify the CONTRACTOR, in writing, to that effect. If the CONTRACTOR does not, within five (5) calendar days thereafter, take such measures as will in the judgment of the CITY insure the satisfactory completion of the work within the prescribed time or prevent unnecessary inconvenience to the public or prevent unnecessary expense to the CITY, the CITY may put on the necessary force, at the cost to the CONTRACTOR, to correct such delay or the CITY may declare the CONTRACTOR to be in default and terminate the contract as provided for herein.

RESPONSIBILITY FOR CONDUCT OF WORK

The CONTRACTOR shall be responsible to conduct the work in such a manner as to complete it accurately and within the time specified in the contract. The CONTRACTOR must have present, at all times, on the worksite a competent, English-speaking individual responsible for reading and understanding the contract documents. The representative shall be subject to receive instructions from the CITY, have full authority to execute the directions of the CITY, without delay, and promptly supply any necessary labor, equipment, material or incidentals to do so. If any person employed shall refuse or neglect to obey the directions of the CITY, in anything relating to the work, or shall appear to be incompetent, disorderly or unfaithful, he/she shall, upon request of the CITY, be at once discharged and shall not be employed again on any part of the work without consent of the CITY.

The CONTRACTOR shall provide a 2-4 hour and a 24 hour emergency response plan. In either case, if there is no response (from time of notification) then the City can hire a CONTRACTOR and then back charge the CONTRACTOR.

CONTRACTOR'S RESPONSIBILITY FOR WORK

Add the following as a separate paragraph after the existing first paragraph of Section 107.30 of the STANDARD SPECIFICATIONS: The Contractor is required to maintain all work including, but not limited to; roadway, driveway, sidewalk, lighting, traffic signals, landscaping, water and sewer mains, and structures until final acceptance by the Engineer. The Engineer will determine what constitutes acceptable maintenance.

After new water service lines have been installed, the Contractor shall be responsible for locating said service lines for the duration of the project. The City will not locate service lines placed by the Contractor for the duration of the project. The Contractor, at its own expense, shall repair any damage to any service line installed under the contract which was damaged as a result of the Contractor's failure to properly locate the service lines to the satisfaction of the Engineer.

Material Orders: Contractor shall order all materials with long lead times within 5 working days from issuance of the Notice of Award to minimize any project delays and meet project completion date.

Construction Schedule: Contractor shall submit an anticipated construction schedule within 10 working days from issuance of the Notice of Award.

QUALITY OF THE WORK

The work shall be done in a thorough and workman like manner and to the satisfaction of the CITY. The CONTRACTOR shall provide only materials and tools of the best quality for the work. No secondhand material can be used in any case. Should anything be brought to the worksite that is improper to be used on the work, the same shall be removed at the direction of the CITY. All labor will be furnished by the CONTRACTOR and must be efficient and skilled in the work. All work must pass inspection by the CITY.

INSPECTIONS

The CITY shall have the right to inspect any work, material, component equipment, supplies, services, or completed work specified herein before acceptance. Any of said items not complying with these specifications are subject to rejection at the option of the CITY. Any items rejected shall be removed from the premises of the CITY and/or replaced at the entire expense of the CONTRACTOR. The CONTRACTOR will make every effort and means available to facilitate the CITY'S inspection of the work. Any work or material which the CITY may determine to be defective must be rebuilt, replaced, or removed at the CONTRACTOR'S own expense at the direction of the CITY. Any omission to reject or condemn any work or material at the time of its construction or arrival at the worksite shall not be construed to mean an acceptance of the work.

EXTRA WORK

Any work not herein specified which may be implied as being included in this contract, of which the CITY shall be the judge, shall be done by the CONTRACTOR without extra charge. The CONTRACTOR shall also do such work in connection with this contract as the CITY may specifically direct and if it be of a kind for which no price is given or stated in this contract, such price shall be fixed by the CITY and the CONTRACTOR, but no claim for extra work shall be allowed unless the same was done in pursuance of a written special order from the CITY. It is understood that the completion of this contract under this agreement includes any and all work that may be necessary to connect and match work with adjoining work in a reasonable manner.

EXTENSION OF TIME

The CONTRACTOR shall not be entitled to any claim for damages for any hindrance or delay from any cause whatever in the progress of the work or any part thereof. However, such hindrance may entitle the CONTRACTOR to an extension of time for completing the contract, sufficient to compensate for the detention; the same to be determined by the CITY, provided that the CONTRACTOR provides notice, in writing, of the nature of the cause of such detention within ten (10) calendar days after the detention has occurred.

LOSS OR DAMAGE

Any loss or damage arising out of the nature of the work or from any detention or from any other unforeseen obstruction or difficulty which may be encountered in the prosecution of the work or from the action of the elements shall be sustained by the CONTRACTOR who will be required, without cost to the CITY, to remove and replace all portions of the work, displaced or damaged, immediately after completion of this task.

PRICES

The quantities provided in the bid documents are approximate only and are subject to increase or decrease. Actual compensation to the CONTRACTOR shall be based upon the actual quantities multiplied by the unit prices bid for each item. The unit prices submitted herewith are for the purpose of obtaining a gross sum, and for use in computing the value of additions and deductions and for the purpose of determining the lowest BIDDER. Should there be a discrepancy between the gross sum bid and that bid resulting from summation of quantities multiplied by their respective unit prices, the latter shall apply.

PAYMENTS TO CONTRACTOR

The CONTRACTOR shall submit a partial payment estimate not more than once each month. The estimate will cover the work performed from the previous estimate until issuance of the current partial payment estimate. The partial payment estimate must be supported by such data as may be required by the CITY. Upon approval by City Council and approval of partial waiver(s) of lien, the CITY agrees to make payment. The CITY shall retain ten (10) percent of the amount of each payment until final completion and acceptance of all work covered by the contract. The retainage may be reduced at the discretion of the CITY.

FINAL PAYMENT

Upon completion of the work and approval by the CITY, a final payment estimate will be prepared by the CONTRACTOR. Upon approval by City Council and approval of all final waiver(s) of lien by the CITY, the CITY will, within thirty (30) calendar days, pay the CONTRACTOR the final payment on the basis of the approved final payment estimate. The acceptance by the CONTRACTOR of final payment shall constitute a release and waiver of any and all rights and privileges under the terms of the contract, and shall relieve the CITY from any and all claims or liabilities for anything done or furnished relative to the work or for any act or neglect on the part of the CITY relating to or connected with the contract. Any payment, however, final or otherwise, shall not release the CONTRACTOR or his sureties from any obligations under the contract or the performance bond and payment bonds.

TERMINATION OF CONTRACT

The CITY reserves the right to terminate the whole or any part of this contract, upon ten (10) calendar days written notice to the CONTRACTOR. The CITY further reserves the right to terminate the whole or any part of this contract, in the event of default by the CONTRACTOR. Default is defined as failure of the CONTRACTOR to perform any of the

provisions of this contract or failure to make sufficient progress so as to endanger performance of this contract in accordance with its terms. In the event of default and termination, the CITY will invoke the Performance Bond in such manner as the Director of Public Works may deem appropriate. The CONTRACTOR shall be liable for any related costs unless acceptable evidence is submitted to the Director of Public Works that failure to perform the contract was due to cause beyond the control and without the fault or negligence of the CONTRACTOR. The CONTRACTOR will not be liable to perform if situations arise by reason of strikes, acts of God or the public enemy, acts of the CITY, fires or floods.

COMPLIANCE WITH LAWS

The CONTRACTOR shall at all times observe and comply with all laws, ordinances and regulations of the Federal, State, Local and CITY governments, which may in any manner affect the preparation of bids or the performance of the contract.

PERMITS AND LICENSES

The CONTRACTOR shall obtain, at its own expense, all permits and licenses which may be required to complete the contract, and/or required by municipal, state, and federal regulations and laws. All fees shall be included in the bid, no additional compensation will be allowed.

NON-DISCRIMINATION

a. CONTRACTOR shall, as a party to a public contract

1. Refrain from unlawful discrimination in employment and undertake affirmative action to assure equality of employment opportunity and eliminate the effects of past discrimination;

2. By submission of this proposal, the CONTRACTOR certifies that it is an "equal opportunity employer" as defined by Section 2000(e) of Chapter 21, Title 42, U.S. Code Annotated and Executive Orders #11246 and #11375 (42 U.S.C., Section 2000 (e)); Exec. Order No. 11246, 30 F.R. 12319 (1965); Exec. Order No. 11375, 32 F.R. 14303 (1967) which are incorporated herein by reference. The Equal Opportunity Clause, Section 6.1 of the Rules and Regulations of the Department of Human Rights of the State of Illinois, is a material part of any contract awarded on the basis of this proposal.

b. It is unlawful to discriminate on the basis of race, color, sex, national origin, ancestry, age, marital status, physical or mental handicap or unfavorable discharge for military service. BIDDER/supplier shall comply with standards set forth in Title VII of the Civil Rights Act of 1964, 42 U.S.C. S2000 et seq. and The Human Rights Act of the State of Illinois (775 ILCS 5/1 - 101).

VENUE

The parties hereto agree that for purposes of any lawsuit(s) between them concerning the contract, its enforcement, or the subject matter thereof, venue shall be in Lake County, Illinois, and the laws of the State of Illinois shall govern the cause of action.

SPECIAL PROVISIONS

The following Special Provisions supplement the "Standard Specifications for Road and Bridge Construction", adopted January 1, 2022 (hereinafter referred to as the "Standard Specifications"); the latest edition of the "Illinois Manual on Uniform Traffic Control Devices for Streets and Highways" in effect on the date of invitation for bids; and the "Supplemental Specifications and Recurring Special Provisions," adopted January 1, 2022 indicated on the Check Sheet included herein; all of which apply to and govern the construction of the 2022 Watermain Improvements for the City of Zion, Illinois.

These special provisions included herein apply to and govern the proposed improvement designated as 2022 Water Main Improvements and in case of conflict with any part or parts of said specifications, said special provisions shall take precedent and shall govern.

Location of Improvement

This project is located in the City of Zion, Lake County, Illinois, at the following alleys:

BASE BID:

- 29th Street from Gilead Avenue to the Alley between Gilead Avenue and Gilboa Avenue
- Alley between Gilead Avenue and Gilboa Avenue from 29th Street to 27th Street
- 28th Street from Gilboa Avenue to the Alley between Gilboa Avenue and Gideon Avenue
- The Northeast-Southwest diagonal Alley from 28th Street to the Alley between 28th Street and 27th Street
- The Alley between Gideon Avenue and Gabriel Street from the Northeast-Southwest Diagonal Alley to 27th Street
    - Water main replacement with pavement patching and landscape restoration

ALTERNATE 1:

- 29th Street from the Alley between Galilee Avenue and Gilead Avenue to the Alley between Gilead Avenue and Gilboa Avenue.
    - Water main replacement with pavement patching and landscape restoration

ALTERNATE 2:

- 28th Street from the Alley between Galilee Avenue and Gilead Avenue to the Alley between Gilead Avenue and Gilboa Avenue
    - Water main replacement with pavement patching and landscape restoration

ALTERNATE 3:

- Alley between Gilead Avenue and Gilboa Avenue from 28th Street to 27th Street.
    - Water main replacement with pavement patching and landscape restoration

Description of Improvement

The proposed work consists of 4000 LF of proposed water main replacement with pavement patching and all necessary restoration as further described in the contract documents for the said work prepared by Christopher B. Burke Engineering, Ltd. (CBBEL).

Basis of Award

The City will choose the “low bidder” based upon City’s budget. The City may also delete elements from the Bid with no adjustment to unit prices.

Working Days

Work must be completed within 40 Working days from the Notice to Proceed if the Base Bid is selected, 43 work days if the Base Bid + Alternate 1 is selected, 46 working days if the Base Bid + Alternate 1 + Alternate 2 is selected, and 50 working days if the Base Bid + Alternate 1 + Alternate 2 + Alternate 3 is selected.

Work on this project is expected to begin no earlier than April 1st, 2024. Any work beginning before April 1st, 2024 will require City approval.

DEFINITION OF TERMS

In addition to the definitions included in Section 101 of the "Standard Specifications for Road and Bridge Construction", the following should be added:

Engineer – shall be the firm of Christopher B. Burke Engineering, Ltd. as Engineer employed by the Owner.

City – shall be the City of Zion.

Owner – shall be the City of Zion.

Municipality – shall be the City of Zion.

INSURANCE REQUIREMENTS

The Contractor shall follow Section 107 of the Illinois Department of Transportation Standard Specifications for Road and Bridge Construction. The insurance shall also name the City of Zion and Christopher B. Burke Engineering, Ltd. as additional insured.

MAINTENANCE OF EXISTING UTILITIES

The Contractor shall be responsible for interference with or damage to any existing utilities, such as water mains, sewers, gas mains, cable, conduit, etc., and shall repair or replace same at his own expense and with the least possible delay. The Contractor shall give prior notification to the utility companies of his intention to begin work. He shall also call J.U.L.I.E. at 1-800-892-0123 and the City to mark the location of underground utilities.

REDUCTION IN SCOPE OF WORK

Due to budgetary constraints, the City may reduce or add quantities to the bid. No compensation will be allowed to the contractor for decrease in quantities and anticipated profits.

VANDALISM

Special attention is called to Article 107.30 of the STANDARD SPECIFICATIONS. Any defaced work shall be corrected or replaced by the CONTRACTOR at his sole expense prior to final payment. The CITY shall cooperate with the CONTRACTOR to minimize vandalism, but the CONTRACTOR shall be ultimately responsible to correct any damage.

TEMPORARY WATER SHUTDOWNS

The CITY water division shall be notified at least forty-eight (48) hours in advance of any water shutdown. The CITY will determine what residences will be affected by the shutdown and supply to the CONTRACTOR shut-off notice handouts and those areas to be notified. The CONTRACTOR shall be responsible for distributing handouts to affected residences. The turning of any valve other than those installed but not yet accepted by the CITY shall be performed by water division personnel. Before the system is returned to service, a fire hydrant must be opened to relieve any air in the line and to flush the system. After the system is fully flushed, a representative from the CITY will collect chlorine residual and bacteriological samples. Another sample will be collected after 24 hours.

MAINTENANCE OF ROADWAYS

Beginning on the date that the CONTRACTOR begins work on this project, he shall assume responsibility for normal maintenance of all existing roadways within the limits of the improvement. This normal maintenance shall include all repair work deemed necessary by the CITY, but shall not include snow removal operations. Traffic control and protection for this work will be provided by the CONTRACTOR as required by the CITY.

The CONTRACTOR shall assume that the alleys will be shut down during construction and no through vehicles shall be allowed access. All roadways shall remain open to traffic at all times. CITY is to allow parking on local road overnight if the alley is closed.

The work involved in maintaining the existing pavement and shoulders will be paid for separately at the contract unit prices for the various items of work involved, unless otherwise specified elsewhere in these Special Provisions. Traffic control and protection required for this work shall be considered incidental to the contract.

All streets must be kept open to local traffic at all times. If needed this should include the use of flaggers. Failure to keep traffic open will result in an amount of $500 per incident to be deducted from any monies due to the CONTRACTOR.

All patches shall be completed within two weeks of the complete installation of the water services. Failure to complete this will result in an amount of $500 per incident to be deducted from any monies due to the CONTRACTOR.

All streets must be fully open to two-way traffic at the end of each work day. Temporary Aggregate will be used until the project is ready for Patching. During patching operations, the Contractor must provide maintain two-way traffic flow.

STREET CLEANING

Special attention shall be paid to Section 107.15 of the STANDARD SPECIFICATIONS. If the CONTRACTOR fails to clean the pavement, sidewalk or parkways on or adjacent to the section under construction to the satisfaction of the CITY at any time during the contract, the CITY will notify the CONTRACTOR at which time the CONTRACTOR will have 24 hours to respond. The CONTRACTOR must use a mechanical sweeper utilizing water as a dust control measure a minimum of once a week on all streets within the project or as directed by the Engineer.

If the CONTRACTOR fails to respond within 24 hours an amount of $500.00 per incident will be deducted from any monies due the CONTRACTOR.

PUBLIC CONVENIENCE AND SAFETY

In addition to the requirements of Article 107.09 of the STANDARD SPECIFICATIONS, the CONTRACTOR shall maintain entrances and side roads along the proposed improvement; interference with traffic movements and inconvenience to owners of abutting property and public shall be kept to a minimum. Any delays or inconveniences caused the CONTRACTOR by complying with these requirements shall be considered as incidental to the contract, and no additional compensation will be allowed.

The CONTRACTOR is to plan his work so that there will be no open holes in the pavement during non-work hours.

During all construction operations, the CONTRACTOR will be required to provide, erect and maintain proper signage and barricades plus provide flagmen as necessary for safe traffic control.

All provisions relating to traffic control, signage, barricades and the use of flagmen shall be subject to the approval of the CITY.

The streets must be kept open to local traffic at all times. If needed this should include the use of flaggers. Failure to keep traffic open will result in an amount of $500 per incident to be deducted from any monies due to the CONTRACTOR.

All patches shall be completed within two weeks of the complete installation of water services.

The CONTRACTOR shall provide a 2-4 hour emergency response plan (from Time of Notification). If no response, the City can hire a CONTRACTOR and then back charge the CONTRACTOR.

The CONTRACTOR must also provide a 24-hour response plan (from Time of Notification). If no response, the City can hire a CONTRACTOR and then back charge the CONTRACTOR.

The CONTRACTOR will not be allowed to close any street to through travel without the prior approval of the CITY. The CONTRACTOR will be required to provide all warning signs, barricades, traffic cones, flagmen and other appurtenances to guarantee the safety of motorists and pedestrians during construction. This work will not be paid for separately but shall be considered as incidental to the Contract and no extra compensation will be allowed.

CLEANING DRAINAGE STRUCTURES

All existing storm sewers, pipe culverts, manholes, catch basins and inlets shall be classified as drainage structure insofar as the interpretation of this Special Provision is concerned. This work is divided as follows:

1. All existing drainage structures which are within 100 feet of the project limits shall be inspected by the CONTRACTOR together with the Engineer prior to starting construction and a record kept of their condition. All debris which accumulates in these structures during the time construction is in force shall be removed and disposed of by the CONTRACTOR as directed by the Engineer. This work shall be done at the CONTRACTOR's expense and shall include all necessary vac cleaning.

2. The cleaning and sediment removal and disposal of all inlet filters is considered incidental to the inlet filters.

DETECTABLE WARNINGS

Description. This work shall consist of installing detectable warnings at locations shown on the plans or as directed by the Engineer in accordance with Section 424 of the Standard Specifications.

Materials. The CONTRACTOR shall install EJ Duralast Detectable Warning Plates. The tiles shall be 24" x 60" with dome spacing of 2.35" and "Brick Red" in color. Where applicable, EJ Duralast radius truncated dome detectable warning system shall be utilized. The color of radius system shall be "Brick Red". Where radius tiles are required, the CONTRACTOR shall field verify radius measurements prior to ordering materials. The detectable warning shall be installed in accordance with the manufacturer's recommendations and as shown on the plans and details or as required by the Engineer.

Construction Requirements.
Curb Ramps. Curb ramps shall be constructed according to the Americans with Disabilities Act Accessibility Guidelines (ADAAG), the Illinois Accessibility Code, and as shown on the plans. Curb ramps shall be constructed to the same thickness as the adjacent sidewalk with a minimum thickness of 5in. (100 mm). ADA accessible ramps shall be constructed according to the latest IDOT Highway Standards 424001, 424006, 424011, 424016, and 424024.

Detectable Warnings. The detectable warning shall be installed during the construction of the PCC sidewalk. The top of the plate shall be flush with the surface of the sidewalk. All PCC sidewalk and aggregate sub-base installed below the detectable warning shall be installed according to the manufacturer's specifications. Where radius tiles are required, the CONTRACTOR shall field verify radius measurements prior to ordering materials.

The detectable warnings shall be installed at curb ramps, medians and pedestrian refuge islands, at-grade railroad crossings, transit platform edges, and other locations where pedestrians are required to cross a hazardous vehicular way. Detectable warnings shall also be installed at alleys and commercial entrances when permanent traffic control devices are present. The installation shall be an integral part of the walking surface and only the actual domes shall project above the walking surface. The product or method used for installing detectable warnings shall come with the following documents which shall be given to the Engineer prior to use.

(a) Manufacturer's certification stating the product is fully compliant with the ADAAG.
(b) Manufacturer's five year warranty.
(c) Manufacturer's specifications stating the required materials, equipment, and installation procedures. Products that are colored shall be colored their entire thickness. The materials, equipment, and installation procedures used shall be according to the manufacturer's specifications.

Method of Measurement and Basis of Payment. This work will be measured and paid for at the contract unit price per SQUARE FOOT for DETECTABLE WARNINGS which price shall include all materials, labor and equipment necessary to perform the work as shown in the construction detail and specified herein.

DUCTILE IRON WATER MAIN

General: This work shall include the furnishing of all labor and materials required for the construction of a water main of the required inside diameter constructed as specified herein and in the standard specifications, and conforming in all respects to the lines, grades, and locations shown on the plans or furnished by the engineer.

Materials: Ductile iron water mains shall conform to ANSI specifications A21.51, thickness Class 52, with cement lining conforming to specification A21.4 and shall be coated on the outside with coal tar or asphalt one mil in thickness. Joints shall be push-on conforming to ANSI specification A21.11. All gaskets for push-on and mechanical joints must be lubricated prior to installation. Also included shall be a polyethylene tube to encase the entire water main conforming to ASTM A 21.5. Conductivity will be maintained by installing bronze wedges into the push joints.

Installation: Excavation of water mains shall conform to the provisions of Section 20, 21 and 22 of the "Standard Specifications for Water and Sewer Main Construction" and as specified herein. The water main shall be laid with the minimum cover of five feet six inches (5'- 6") measured from the top of the pipe to finished grade or as indicated on the plans. The trench width shall be ample to permit the pipe to be laid and jointed properly and the backfill to be placed and compacted.

Whenever the term "granular" materials is used in the context of this article, it shall imply coarse aggregate, CA-6, meeting the requirements of the "Standard Specifications for Road and Bridge Construction", as prepared by the State of Illinois, Department of Transportation.

All backfill of water mains within two (2) feet of curb lines and under sidewalks, driveways, and pavement shall be done using granular materials in accordance with the "Standard Specifications for Water and Sewer Main Construction" and shall be compacted in accordance with Section 20 except to a density of 95% standard proctor. Granular backfill shall be measured for payment according to standard drawing 2 and paid for at the contract unit price per cubic yard for TRENCH BACKFILL, SPECIAL except as modified herein.

No clamps are allowed on the new water main, only cut-ins.

Concrete thrust blocks, as shown on the plans and/or directed by the Engineer, shall be constructed at plugs, tees, and bends of 3000 psi concrete in accordance with section 41-2.09 of the "Standard Specifications for Water and Sewer Main Construction in Illinois", latest edition, and Village of Lindenhurst Standards. The concrete thrust blocks shall completely fill the space between the bends of fittings and the walls of the trench from 6 inches below the fittings to 12 inches above the fitting with no possible interference with the making or remaking of the joints. In addition to the concrete thrust blocking all mechanical joints, bends of 10 degrees and larger, and fire hydrants shall be "Megalug" restraint or approved equal. Bolts shall be "Cor-ten". **Field lok gaskets shall be required for 2 joints before or after any fitting, valve or bend.**

Blue, plastic warning tape with the words "CAUTION – WATER MAIN" shall be installed one (1) foot above the top of the proposed water main along the full length. Before construction, a sample of the tape shall be submitted to and approved by the CITY. Warning tape is

considered incidental to the installation of DUCTILE IRON WATER MAIN and shall not be paid for separately.

Testing: A two-hour test combining the pressure test and leakage test shall be made in accordance with sections 41-2.13A, 41-2.13B, 41-213B, AND 41-2.13C of the "Standard specifications for water and sewer main construction". The test pressure shall be 150 psi for a minimum of two (2) hours.

In addition, the CONTRACTOR shall conduct a system pressure leakage test after the two (2) hour test is completed. A twenty-four (24) hour metered leakage test shall be performed. The City of Zion shall provide the meter and double check valve, and the CONTRACTOR shall provide the connection to the new main. The leakage test shall be performed at system pressure, and a maximum allowable leakage of four (4) gallons per inch diameter per 1,000 feet of pipe per twenty-four (24) hours shall be allowed as recorded on the meter. If excessive leakage is encountered, the location of the leak shall be located and repaired, and the twenty-four (24) hour system leakage test shall be repeated at no additional cost until the leakage is within the specified allowance.

No bell clamps are allowed during pressure testing.

Final Connections to Existing Mains: Water mains and appurtenances must be completely installed, flushed, disinfected, and satisfactory bacteriological sample results received prior to permanent connections being made to the active distribution system. Sanitary construction practices must be followed during installation of the final connection, so that there is no contamination of the new or existing water main with foreign material or groundwater.

a. *Connections equal to or less than one pipe length (<18 ft)*: New pipe, fittings, and valve(s) required for the connection may be spray-disinfected or swabbed with a minimum 1-5% solution of chlorine just prior to being installed, if the total length of the connection from the end of a new main to the existing main is equal to or less than 18 ft.
b. *Connections greater than one pipe length (>18 ft):* Pipe required for the connection must be set up aboveground, disinfected, and bacteriological samples taken, as described in Section 5 of AWWA C651-99 if the total length of the connection from the end of a new main to the existing main is greater than 18 ft. after satisfactory bacteriological sample results have been received for the "predisinfected" pipe, the pipe can be used in connecting the new main to the active distribution system. Between the time the satisfactory bacteriological sample results are received and the time that the connection piping is installed, the ends of the piping must be sealed with plastic wraps, watertight plugs, or caps.

Chlorination: Before being placed into service, all new water mains shall be chlorinated in accordance with Sections 41-2.14B, 41-2.14C, 41-2.14C(1), 41-2.14C(2), and 41-2.14D of the "Standard specifications for water and sewer main construction".

Basis of Payment: This work shall be paid for at the contract unit price per foot for DUCTILE IRON WATER MAIN of the size indicated on the "Bidding Schedule" and as specified herein, constructed as required, including polyethylene tube encasement, warning tape, and granular bedding and cradle, all in accordance with the requirements and provisions as outlined above and in the Standard Specifications. Trench backfill be paid for under separate items of the

contract. Water main removed for any work will not be paid separately but will be considered incidental to the associated item.

DISINFECTION OF WATER MAINS

Description: Disinfection of water mains shall be completed in accordance with Section 41-2.14 of the WATER AND SEWER SPECIFICATIONS except as modified in this Special Provision.

The OWNER shall be notified at least twenty-four hours before the disinfection procedure. Representatives of the water division must be present during the procedure.

A. Flushing

Sections of pipe to be disinfected shall first be flushed to remove any solids or contaminated material that may have become lodged in the pipe. If no hydrant is installed at the end of the main, then a tap should be provided large enough to develop a velocity of at least two and five-tenths (2.5) feet per second in the main. One two and one-half (2 1/2) inch hydrant opening will, under normal pressures, provide this velocity in pipe sized up to and including twelve (12) inches.

All taps required for chlorination or flushing purposes, or for temporary or permanent release of air, shall be provided for by the CONTRACTOR as part of the construction of water mains.

B. Requirement of Chlorine

A free chlorine residual of at least 50 ppm and no more than 400 ppm must be reached throughout the entire length and branch lines of the water main. After the super-chlorinated water has sat in the main for twenty-four hours, a chlorine residual test shall be taken to insure the residual has not dropped by over one-half.

C. Form of Applied Chlorine

Chlorine shall be applied by the method which follows, subject to the review of the ENGINEER.

Chlorination shall be made by the use of chlorine gas only. The dry gas shall be fed directly through proper devices for regulating the rate of flow and providing effective diffusion of the gas into the water within the pipe being treated. Chlorinating devices for feeding the chlorine gas must provide means for preventing the backflow of water into the chlorine. The chlorine gas shall be injected into the main at intervals of no more than 1,000 feet.

D. Point of Application

The preferred point of application of the chlorine gas is at the beginning of the pipe line extension or any valved section of it, and through a corporation stop inserted in the pipe. The water injector for delivering the chlorine-bearing water into the pipe should be supplied from a tap made on the pressure side of the gate valve controlling the flow into the pipe line extension. Alternate points of application may be used subject to the review of the ENGINEER.

E. Preventing Reverse Flow

Valves shall be manipulated so that the strong chlorine solution in the line being treated will not flow back into the line supplying the water. Check valves may be used if desired.

F. Retention Period

Treated water shall be retained in the pipe at least twenty-four (24) hours. After this period, the chlorine residual at pipe extremities and at other representative points shall be at least twenty-five (25) mg/l.

G. Chlorinating Valves and Hydrants

In the process of chlorinating newly laid pipe, all valves or other appurtenances shall be operated while the pipe line is filled with the chlorinating agent and under normal operating pressure.

H. Final Flushing and Testing

Following chlorination, all treated water shall be thoroughly flushed from the newly laid pipe at its extremity until the replacement water throughout its entire length shows, upon test, a chlorine residual of less than one (1) mg/l. In the event chlorine is normally used in the source of supply, then the test shall show a residual of not in excess of that carried in the system.

At this time a water sample will be taken by the CONTRACTOR or his representative and sent to a state-certified water lab of his choice. Also at this time the OWNER will witness the sampling. The CONTRACTOR shall take two (2) samples, 24 hours apart with satisfactory results or the procedure shall be repeated.

I. Repetition of Flushing and Testing

Should the initial treatment result in an unsatisfactory bacterial test, the original chlorination procedure shall be repeated by the CONTRACTOR until satisfactory results are obtained. After water main passes chlorination testing, the corporation stop used to chlorinate the main shall be shut off and any piping removed.

PRESSURE TESTING OF WATER MAINS

Description: After the pipe has been laid and partially backfilled as specified herein, all newly-laid pipe, valved sections, and fire hydrants, unless otherwise expressly specified, be subjected to a hydrostatic pressure of 150 psi at the lowest elevation of the pipe section. The ENGINEER shall be given 24 hours notice prior to the beginning of testing. The duration of each pressure test shall be not less than two hours. Water main testing shall be in accordance with the applicable portions of AWWA Standards C600 and C603, or as otherwise modified herein.

Procedure for Test:
The CONTRACTOR shall notify the OWNER at least twenty-four hours prior to the pressure test. Valves will be turned on only under the supervision of the OWNER, and the OWNER will witness all pressure testing.

Each section of pipe to be tested, as determined by the ENGINEER, shall be slowly filled with water and the specified test pressure of one hundred fifty (150) pounds per square inch shall be applied by means of a pump connected to the pipe in a satisfactory manner. The pump pipe connection and all necessary apparatus, including gauges and meters, shall be furnished by the CONTRACTOR. Before applying the specified test pressure, all air shall be expelled from the pipe. To accomplish this, taps shall be made, if necessary, at points of highest elevations and afterwards tightly plugged. Any cracked or defective pipes, fittings, valves, or hydrants discovered in consequence of this pressure test shall be removed and replaced by the CONTRACTOR with sound material, and test shall be repeated until satisfactory to the ENGINEER and the OWNER. The provisions of AWWA C600 and C603, where applicable, shall apply.

The pressure testing shall be accomplished with fire hydrant auxiliary valves open.

Leakage Test:
After completion of the pressure test, a leakage test shall be conducted to determine the quantity of water lost by leakage under the specified test pressure.

1. Test pressure is defined as the maximum operating pressure of the section under test, and is based on the elevation of the lowest point in the line or section under test corrected to the elevation of the test gauge. Applicable provisions of AWWA C600 and C603 shall apply. The minimum duration of each leakage test shall be one (1) hour in addition to the pressure test period.

2. Allowable leakage in gallons per hour for cast iron water main shall not be greater than that determined by the following formula:

$$L = \frac{ND\sqrt{P}}{7400}$$

Note: L = Allowable leakage in gallons per hour
N = Number of joints in length of pipeline tested.
D = Nominal diameter of the pipe in inches.
P = Average test pressure during leakage test in pounds per square inch gauge.

3. Leakage is defined as the quantity of water to be supplied in the newly laid pipe or any valved section under test, which is necessary to maintain the specified leakage test pressure after the pipe has been filled with water and the air expelled.

Immediately after a passed test the pressure shall be drained through a fire hydrant until it is below the potable system pressure.

FIRE HYDRANT WITH NEW AUXILIARY VALVE AND VALVE BOX

Description: This work shall consist of furnishing new fire hydrants of the type and size specified herein below at the locations indicated on the plans or otherwise directed by the Engineer.

Materials: Hydrants shall be of the compression or gate type conforming to the latest specifications of the American Water Works Association, C502, and shall be of a make that has been adopted by the owner as standard. Hydrants shall be designed for a 150 -pound working pressure. Hydrants shall be finished with two (2), two and one-half inch (2-1/2") hose nozzles, and one (1) four and one-half (4-1/2") steamer connection. Threads on nozzles and caps shall be national standard thread and shall conform to the standard adopted by the owner. Hydrants shall open by turning to the left or counter-clockwise and shall be so marked. All new fire hydrants furnished under this contract shall be made by a Factory Painted "Safety Red" color Mueller Centurium and shall have traffic flange construction design with a break way flange and mechanism at the ground line.

Hydrants shall have a six-inch (6") pipe connection, shall be equipped with a (6") auxiliary valve, and shall have a five and one-quarter inch (5-1/4") valve opening. The auxiliary valve shall be attached to the hydrant. The joint for joining the auxiliary valve shall be fitted with a cast iron valve box of the same type as specified under standard drawing #14 of the Standard Specifications for Water and Sewer Main Construction in Illinois. The word "WATER" shall be on all valve boxes. A valve box stabilizer shall be rubber of the type Adapter Inc. Stabilizer and shall be installed between the valve box and the auxiliary valve.

Installation: Hydrants shall be set at the locations indicated on the plans, and shall be such length that with the frost ring nearly at the ground level, there will be five and one-half feet (5-1/2') of cover over the connecting pipe and the height of the nut on the cap is 18"-24" above the ground. At least four feet (4') of cover will be provided across ditches. Hydrants shall be placed on a large, flat stone, and shall have a minimum of one-half cubic yard (1/2cy.) of gravel or porous stone (rounded, not crushed) around the base to provide drainage for the hydrant drip. This shall include a 3-4 mil. plastic barrier, between the gravel drain field and the earth cover. All hydrants shall be properly braced to prevent movement. Any mechanical joint glands required on any mechanical joint fittings necessary for the installation of the hydrants shall be retainer-type glands. All hydrants shall be placed so that the steamer connection is facing the major roadway.

Basis of Payment: This work will be paid for at the contract unit price each for FIRE HYDRANT WITH AUXILIARY VALVE AND VALVE BOX, which price for all work as specified herein, and shall include up to five feet (5') of six inch (6") diameter pipe between the auxiliary valve and the water main.

STRUCTURES TO BE ADJUSTED

Description: This work shall consist of adjusting catch basins, manholes, valve vaults, water valve boxes, fire hydrant auxiliary valve boxes, water service boxes and inlets with their existing frame and grate or with a new frame and grate in accordance with Section 602 of the Standard Specifications and as specified herein.

Basis of Payment: This work will be measured and paid for at the contract unit price per each for STRUCTURES TO BE ADJUSTED. The word STRUCTURE shall be understood to mean catch basin, manhole, valve vaults, water valve box, fire hydrant auxiliary valve box, or inlet as the case may be.

TEMPORARY ACCESS

Revise Article 402.10 of the Standard Specifications to read:
"402.10 For Temporary Access. The contractor shall construct and maintain aggregate surface course for temporary access to private entrances, commercial entrances and roads according to Article 402.07 and as directed by the Engineer.
The aggregate surface course shall be constructed to the dimensions and grades specified below, except as modified by the plans or as directed by the Engineer. All entrances shall account for grade differences based on construction staging, pavement thicknesses, and all temporary conditions.

(a) Private Entrance. The minimum width shall be 12 ft (3.6 m). The minimum compacted thickness shall be 6 in. (150 mm). The maximum grade shall be eight percent, except as required to match the existing grade.
(b) Commercial Entrance. The minimum width shall be 24 ft (7.2 m). The minimum compacted thickness shall be 9 in. (230 mm). The maximum grade shall be six percent, except as required to match the existing grade. Turn radii for truck traffic shall be provided where applicable and as directed by the Engineer.
(c) Road. The minimum width shall be 24 ft (7.2 m). The minimum compacted thickness shall be 9 in. (230 mm). The grade and elevation shall be the same as the removed pavement, except as required to meet the grade of any new pavement constructed.

Maintaining the temporary access shall include relocating and/or regrading the aggregate surface course for any operation that may disturb or remove the temporary access. The same type and gradation of material used to construct the temporary access shall be used to maintain it. The maintenance of the temporary access shall be included in the cost of this item.
When use of the temporary access is discontinued, the aggregate shall be removed and utilized in the permanent construction or disposed of according to Article 202.03."
Add the following to Article 402.12 of the Standard Specifications:
"Aggregate surface course for temporary access will be measured for payment as each for every private entrance, commercial entrance or road constructed for the purpose of temporary access. If a residential drive, commercial entrance, or road is to be constructed under multiple stages, the aggregate needed to construct the second or subsequent stages will not be measured for payment but shall be included in the cost per each of the type specified."
Revise the second paragraph of Article 402.13 of the Standard Specifications to read:

Basis of Payment. "Aggregate surface course for temporary access will be paid for at the contract unit price per EACH for TEMPORARY ACCESS (PRIVATE ENTRANCE) or TEMPORARY ACCESS (ROAD). Any required adjustments throughout the duration of the contract shall be considered maintenance of the temporary access, and shall not be measured for payment.
Partial payment of the amount bid for temporary access, of the type specified, will be paid according to the following schedule:

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

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

DRIVEWAY REMOVAL AND REPLACEMENT

Description. This work shall consist of the construction of new asphalt or P.C.C. driveway pavement at locations shown on the plans, or as directed by the Engineer, in accordance with Sections 301, 351, 406 and 423 of the "Standard Specifications for Road and Bridge Construction," the details shown on the plans and as directed by the Engineer.

Construction Requirements. The Contractor shall place embankment or excavate in accordance with Sections 202 and 205 of the Standard Specifications in order to achieve the finished grades shown on the plans.

The proposed driveway pavement shall consist of:

A) 6" Portland Cement Concrete (High Early Strength) and 2" of Aggregate Base Course, Type B if the existing driveway is P.C.C. or;

B) 3" Hot-Mix Asphalt Surface Course, Mix "D", N50, and 6" of Aggregate Base Course, Type B if the existing driveway is Asphalt.

All excavation; embankment; Hot-Mix Asphalt Surface Course, Mix "D", N50; Aggregate Base Course; Landscape Restoration, and P.C.C. Driveway pavement (High Early Strength) will not be paid for separately but shall be included in this pay item.

Method of Measurement and Basis of Payment. This work will be measured and paid for at the contract unit price per square yard for DRIVEWAY REMOVAL AND REPLACEMENT, which price shall be payment in full for constructing this item as specified, including all materials, labor and equipment.

WATER MAIN REMOVAL

This work shall consist of the removal of portions of the existing water main and capping of the portions that are to remain in place. This work shall be performed at locations shown on the plans and/or subject to the review of the ENGINEER.

Excavation required for water main removal shall be performed in accordance with the applicable portion of the Special Provision “Ductile Iron Pipe Water Main” included herein. Water main removal shall end either at a joint or at a location where the existing pipe has been saw cut so as to provided a smooth, even surface so as to allow a watertight joint. After removal of the existing pipe, the integrity of that portion which is to remain in place shall be checked to insure that the pipe end has not been damaged. Additional removal required by non-compliance with this Special Provision will be performed at the CONTRACTOR’S expense and no additional compensation will be allowed. The existing water main shall be capped at all locations where removal is specified. The valves that control the existing water distribution system may not be adequate to completely shut down the system and the CONTRACTOR should expect some residual pressure to be preset when the cap is installed.

If the excavation required for the removal operation falls within a paved area (existing or proposed), it shall be backfilled with trench backfill. This work shall be performed in accordance with the applicable requirements of the Special Provision “Trench Backfill, Special” included herein. Trench backfill will not be measured for payment but shall be considered incidental to the contract unit price per lineal foot for water main removal.

This work will be paid for at the contract unit price per lineal foot for WATER MAIN REMOVAL, of the diameter specified, measured as removed. This price shall include excavation, capping of existing water mains that remain in place, and backfill as herein specified.

FIRE HYDRANTS TO BE REMOVED AND SALVAGED

This work shall consist of the removal of existing fire hydrants, including auxiliary valves, and plugging and blocking of abandoned watermain as indicated on the plans or required by the ENGINEER. The existing fire hydrants are not to be removed until after the new fire hydrants have been installed and satisfactorily tested. The fire hydrants to be removed shall become the property of the OWNER and shall be delivered to the Public Works Facility.

This work will be paid for at the contract unit price each for FIRE HYDRANTS TO BE REMOVED AND SALVAGED, which price shall be payment in full for all labor, equipment, and material necessary to complete the work as specified herein.

SANITARY SERVICE TO BE ADJUSTED

Description. The work of this Pay Item consists of the removal, replacement, and relocation of sanitary sewer service lines above the water main at the crossing location complete in place, including connections to the existing service lines; couplings; excavation; bracing; bedding and covering of pipe; trench dewatering, including erosion and sedimentation control methods and devices to provide protection to environment from all pumping operations; finish grading; removal and disposal of waste excavated materials; protection, replacement, or repairs of utilities; and backfilling with granular backfill materials.

Basis of Pavement. The work will be paid for at the contract unit price for each SANITARY SERVICE TO BE ADJUSTED, regardless of the depth, length, size, or pipe material of the sanitary sewer service.

LOCATING UNDERGROUND UTILITY

Description: This item shall consist of locating underground utilities that potentially conflict with proposed improvements.

Requirements. It shall be the Contractor's responsibility to locate underground utilities that are marked on the plans. This work will not be paid for separately but shall be included in the cost of the item being constructed. Exceptions are as follows:

- Utilities Marked on the Plans: If the item to be constructed is grade critical, and cannot be adjusted either vertically or horizontally (i.e. storm sewer, sanitary sewer, private utilities), and there is a potential for conflict with the utility. Locating potentially conflicting utilities will be paid under this item.
- Utilities Not Marked on Plans: If a utility is not shown on the plans (or not shown in accordance with Article 104.03 of the Standard Specifications). Locating potentially conflicting utilities will be paid under this item. As per Article 107.40(a)(2) of the Standard Specifications, "Service connections shall not be considered to be utilities in unanticipated locations".

The Contractor shall be required to hand dig to locate all existing services, whether it be private utility services for gas, electric, cable, etc., or for water/sewer.

Construction. The method of excavation to locate utilities will be at the contractor's discretion, as approved by the Engineer. If the contractor elects to use hydro excavation for the removal of excavated material, he/she shall be responsible for all water usage and disposing of the excavated material in accordance with Article 202.03 of the Standard Specifications. Regardless of the method of excavation, the Contractor shall be responsible for replacing excavated soil in the resulting hole with sand, limestone screenings or other material as approved by the Engineer.

Any utilities damaged during excavation operations shall be repaired or replaced at the contractor's expense; no additional compensation shall be allowed.

Removal and replacement/restoration of any pavement, sidewalk, parkway, driveway, etc. necessary to complete the exploration excavation shall be paid for separately under pay items that are in the contract. Sidewalk removal and replacement shall include the complete sidewalk panel. Trench Backfill material shall be per Section 208 of the SSRBC and the TRENCH BACKFILL, SPECIAL specification as included herein.

Method of Measurement: This work will be measured per each excavation, regardless of the soil composition, to locate existing utilities. For this pay item, excavation depth and width will be limited to 72 inches and 5 feet, respectively. The Contractor will not receive compensation if more than one utility is located within the excavation (as defined above). If the utility is deeper than 72 inches, the initial locate shall be measured in accordance with this special provision. Additional excavation (beyond 72 inches in depth) shall be measured and paid for in accordance with Article 109.04 of the Standard Specifications. This work shall include all backfill (Trench Backfill as necessary).

Basis of Payment: This work shall be paid for at the contract unit price per EACH for LOCATING UNDERGROUND UTILITY.

TREE PROTECTION AND PRESERVATION

Description. This work shall consist of furnishing and installing tree protection fencing, tree root pruning, and tree canopy pruning as directed by the ENGINEER in accordance with Section 201 of the Standard Specifications.

Tree protection fencing shall be orange in color, and all limits shall be approved by the ENGINEER. The CONTRACTOR shall submit a material sample of the fencing to the ENGINEER for approval. Fence shall be a minimum of 4 feet high with stakes placed a maximum of 3 feet apart. The tree protection fencing limits shall be determined in the field by the Engineer.

Tree root pruning consists of root pruning using a 'Vermeer' wheel matching the following criteria. If construction is to occur within the root zone of existing plant material, root pruning and special plant care will be required. All pruning shall be performed by a professional arborist.

Inspection. The site shall be inspected for visible aboveground hazards prior to beginning any root management procedure. The location of utilities and other obstructions both below and above ground shall be considered prior to root management operations. Utilities and other obstructions include but are not limited to: gas, electric. communications, sewer; drainage. and, irrigation. Conditions identified that would affect the operation, or are outside of, the scope of work should be reported to the Engineer.

Practices. Root pruning shall not be done when more that the top 1 inch of soil is frozen. Root pruning shall not be done when the soil is saturated, and the surrounding conditions are muddy.

Root pruning using an approved mechanical root pruning saw shall be performed prior to digging where noted on the plans or directed by the Engineer. Whenever roots of plant material to remain are exposed during construction, the damaged root ends are to be removed by cutting them off cleanly.

Roots should be cut with equipment that minimizes cracking the wood and tearing the bark. Root pruning tools shall be selected to meet the objective while minimizing damage to the plant. Wounds to the tree should not be covered, except to manage desiccation or pests. Cuts should result in a smooth surface whenever possible. When treating injured roots, only loose or damaged tissue should be removed.

Heavy equipment should be located outside the root cut line or remain on existing pavement or on a soil-protecting surface.

Temporary staging areas for excavated soil should be located at a safe distance on the side of the trench furthest from the trunk.

Process. Within the tree protection zone remove any sod, coarse woody debris or fresh mulch away from the root collar area. Select tools to avoid root and trunk damage. Repeat until trunk and flare are clear, out to the root collar, where buttress roots divide. Use smaller hand tools, vacuum, or compressed water or air, to complete the excavation for the area that is to be root pruned.

For root cuts on only one side of a tree, the root cut distance shall be no less three times the diameter at breast height.

Roots should be exposed using minimally damaging excavation method prior to pruning. The final cut should result in a flat surface with adjacent bark firmly attached.

When the construction process permits and within 24 hours that root pruning operation occurs backfill the root pruning trench with material excavated from the trench or loose screened topsoil and top with 3-4” shredded hardwood bark mulch.

Exposed fine roots (2mm or less) that due to the construction activities will remain exposed for periods longer than 24 hours shall be covered with burlap and repeatedly sprayed with water until the landscape restoration occurs.

Any damage to the root zone, as determined by the Engineer, shall be compensated by pruning an equivalent amount of the top vegetative growth of the plant material within one week following root damage.

Root pruning shall be done in the presence of the Engineer and in such a manner as to preserve the natural growth habit of each plant.

The root pruner wheel shall be 60-inches diameter (188-inch circumference) carrying 28 pair (56 total) stump cutter teeth with tooth spacing at 6.7-inches on center and shall utilize a 65hp tractor. All root pruning cuts shall be immediately backfilled with material side cast from the earth-sawing procedure, so that the ground surface is even and no tripping potential exists. All root pruning work is to be performed through the services of a certified arborist to be approved by the Engineer. The tree root pruning will occur prior to excavating around the tree and where indicated on the drawings or as directed by the Engineer or the Village Forester; and in such a manner as to preserve the natural growth habit of each tree complete including an equivalent amount of the top vegetative growth of the plant material within one week following root damage, the application of fertilizer nutrients, and supplemental watering. Root pruning depth to be 12” minimum and per the Engineer. Root pruning will be required wherever the ground is disturbed within the drip line of the tree and shall be completed both parallel and perpendicular to the roadway for locations where any sanitary/storm/water main service and concrete work is being completed.

Tree canopy pruning shall be conducted in accordance with Section 201 of the Standard Specifications.

Method of Measurement and Basis of Payment. This work will be paid for at the contract unit price per FOOT for TREE PROTECTION AND PRESERVATION, which price shall include all labor, material, and equipment necessary to complete this work as specified herein.

CURED-IN-PLACE SEWER LINING

A. General

1. Scope

a. CONTRACTOR shall repair defective sewer segments without excavation using cured-in-place pipe (CIPP) as specified herein and where shown on the Plans.

b. The reconstruction will be accomplished using CIPP which shall consist of a resin-impregnated flexible tube that is inverted into an existing sewer pipe through existing manholes and expanded to fit tightly against the existing pipe by the use of water or air pressure. The resin is cured by circulating hot water or by introducing controlled steam within the tube. When the thermosetting resin cures, the finish pipe will be continuous and tight fitting, and the total wall thickness shall be a homogeneous and monolithic felt and resin composite matrix that is chemically resistant to withstand internal exposure to domestic sewage and storm water. Once the tube/resin composite is cured, the inversion bladder and the carrying device are removed.

CIPP pulled into place according to ASTM F1743 will not be allowed.

B. Materials

1. Flexible Liner Material

The tube will consist of one or more layers of flexible needled felt or an equivalent non-woven material. The tube will be continuous in length and the wall thickness shall be uniform. No overlapping sections shall be allowed in the circumference or the length of the liner. The tube will be capable of conforming to offset joints, bells, and disfigured pipe sections. The tube shall have sufficient strength to bridge missing pipe and stretch to fit irregular pipe sections. The wall color of the interior pipe surface of the CIPP after installation shall be a relatively light color so that a clear and detailed examination with closed circuit television inspection equipment can be made. The resin will be polyester or vinyl ester with proper catalysts as designed for the specific application. Each installation shall have a design report documenting the design criteria for a fully deteriorated pipe section, relative to the hydrostatic pressure, depth of soil cover, and type of soil.

All lining products, installation and testing of CIPP shall be in accordance with the specification reference standards from the American Society for Testing and Materials (ASTM) including: ASTM F1216-93, ASTM D638, ASTM D543, ASTM D790, and ASTM D5813.

The composite of the materials above shall upon installation inside the host pipe, exceed the minimum test standards applicable including ASTM D-790 of 4,500 psi for flexible strength, ASTM D-638 of 3,000 psi for tensile strength and ASTM D-790 of 250,000 psi for modules of elasticity.

The CONTRACTOR shall submit to the OWNER for review prior to installation, the Manufacturer’s product literature and certification, application and

installation requirements for materials used in liner. The submittal shall include the liner pipe thickness to be used in this application with supporting design thickness calculations. The design shall assume fully deteriorated pipe conditions.

C. Execution

1. General

Installation shall be in accordance with standard practice for rehabilitation of existing pipelines and conduits by the inversion and curing of a resin – impregnated tube ASTM F1216-93 and AWWA C-950.

2. Flow Bypassing

The CONTRACTOR when required shall provide for the transfer of flow around the section or sections of pipe that are to be lined. The bypass shall be made by diversion of the flow at an existing upstream access point and pumping the flow into a downstream access point or adjacent system. The pump and bypass lines shall be of adequate capacity and size to handle the flow. The proposed bypassing system shall be approved in advance by the OWNER.

3. Preliminary Cleaning and Inspection

Prior to any lining of designated sanitary sewer line segments the BIDDER shall remove internal deposits as necessary to assure proper liner installation. The cleaning shall be performed in accordance with the specifications for SEWER CLEANING, STANDARD GRADE. Television inspection shall be performed to verify extent of damage, required length of lining and location of service connections. The entire length of the sanitary sewer between the two manholes shall be televised regardless of the size of the repair or lining. Televising shall be performed in accordance with the specifications for TELEVISED INSPECTION. Video tapes and a suitable log shall be provided by the CONTRACTOR which shall document, to the satisfaction of the ENGINEER, the condition of the sewer line segment both immediately before and after lining has been installed. The Recordable Digital Versatile Discs (DVD-R) and log shall become the property of the OWNER.

4. Notification of the Public

The CONTRACTOR shall notify all property owners affected by the liner installation work at least 48 hours prior to commencement of the work which will temporarily plug the sanitary services of the property owners connected to the sewer line segment being lined. The CONTRACTOR shall make every effort to maintain sewer service usage throughout the duration of the project. In the event that a connection will be out of service, the longest period of no service shall be 12 hours.

5. Water Usage

The CONTRACTOR shall obtain all construction water at Public Works for water usage required for sewer cleaning, installation and other process related work items that require water. Water required for the project will be provided at no charge.

6. Line Obstructions

It shall be the responsibility of the CONTRACTOR to clear line obstructions such as solids and roots that will prevent the insertion of CIPP. Line obstructions identified on the pre-bid video (if available) and/or revealed during the pre-installation CCTV inspection such as dropped joints, or a collapsed or crushed pipe that cannot be removed by conventional sewer cleaning and root cutting equipment shall be removed or repaired by the CONTRACTOR. The CONTRACTOR shall make a point repair excavation to uncover and remove or repair the line obstruction. Such excavation shall be approved in writing by the OWNER prior to the commencement of the work.

7. Flexible Liner Installation

a. The tube shall be inspected for tears and frayed sections. The tube, in good condition, will be vacuum impregnated with the thermoset resin. Liner tube shall be impregnated with resin not more than 24 hours before installation and stored out of direct sunlight at temperature less than 40 degrees Fahrenheit (4 degrees Celsius). The resin will be introduced into the tube creating a slug of resin at the beginning of the tube. A set of calibration rollers will assist the resin slug to move throughout the tube. All air in the tube shall be removed by vacuum allowing the resin to thoroughly impregnate the tube. All resin shall be contained to ensure no public property or persons are exposed to the liquid resin. A resin impregnated sample (wick), shall be retained by the installer to provide verification of the curing process taking place in the host pipe.

b. The saturated tub along with the inversion bladder will be inserted into the carrying device. The entire carrying device is pulled into the pipe using a cable winch. The pull is complete when the end of the launching device is aligned with the beginning of the section being reconstructed. The resin and tube are completely protected during the pull. No resin shall be lost by contact with manhole walls or the pipe during the pull. The resin should not be contaminated or diluted by exposure to dirt, debris, or water during the pull. The resin that provides a structural seal shall not contact the pipe until positioned at the point of repair.

c. The installer shall be capable of viewing the beginning of the liner contacting the host pipe verifying the exact placement of the liner. Video documentation of the placement, prior to cursing, shall be provided to the OWNER.

d. The tube will be inverted out of the carrying device by controlled air or water pressure. The installer shall be capable of viewing the entire liner contacting the host pipe from the beginning to the end of the liner verifying the entire damaged section has been covered by the liner. Video documentation of the entire liner contacting the host pipe, prior to curing shall be provided to the OWNER. The tube is held tightly in place against the wall of the host pipe by the pressure until the cure is complete.

e. When the curing process is complete, the pressure will be released.

The inflation bladder and launching device shall be removed from the host pipe with the winch. No barriers, coatings, or any material other than the cured tube/resin composite, specifically designed for desirable physical and chemical resistance properties, should ever be left in the host pipe. Any materials used in the installation other than the cured tube/resin composite is to be removed from the pipe by installer. Third party test results supporting the chemical resistance requirements and structural performance of the liner shall be provided to the OWNER before project approval.

f. Where liner is installed through a manhole uninterrupted, the invert shall be maintained smooth through the manhole, with approximately the bottom half of the liner continuous through the manhole. The invert of the manhole shall be shaped and grouted as necessary to support the liner. The cost of this work shall be included in the CIPP unit price.

g. A second TV inspection is performed to verify the proper cure of the material, the proper opening of service laterals, and the integrity of the seamless pipe. The OWNER will receive a DVD-R documenting the inspection and written report documenting the project. The televising shall be the entire length of sanitary sewer between both manholes regardless of the size of the repair or lining.

D. Measurement and Payment

1. CURED-IN-PLACE SEWER LINING

Payment shall be made at the unit price per lineal foot for CURED-IN-PLACE SEWER LINING, (of the diameter specified) indicated on the Bid Proposal and shall include all labor, materials and equipment including internal cleaning and disposal of debris, internal TV inspection for both before and after conditions, bypass pumping, testing and restoration necessary to perform the work.

ABANDON WATER MAIN AND APPURTENANCES

Description. This work shall consist of abandoning the existing water main and all corresponding appurtenances as shown on the plans, specifically taking the valve box cover off and removing the fire hydrant auxiliary. Existing valve vaults to be abandoned shall have the frame and lid removed (salvage to Public Works) and the cone section removed. The vault is to be backfilled with sand in accordance with Section 605 of the Standard Specifications.

Basis of Pavement. The work will be paid for at the contract unit price for lump sum for ABANDON WATER MAIN AND APPURTENANCES, regardless of the depth, length, size, or pipe material of the existing water main and all appurtenances.

AS-BUILT DRAWINGS

At the completion and acceptance of the work, the CONTRACTOR shall perform an 'as-built' survey of the newly installed water main.

The survey shall provide, a minimum, the following information:

1. Locations and elevations of all hydrants, valves, tees, bends, buffalo boxes, addresses, roads labeled, and reducers tied into the right-of-way.
2. The base sheets should be the design drawings.
3. The water main and size should be clearly labeled.
4. The proposed alignment of the water main should be turned off.
5. If any repairs or solid sleeves are needed shall be located.

The CONTRACTOR will turn over 5 paper copies and one reproducible mylar copy of a full size (24"x36") plan set. The minimum scale will be 1"=20". One copy of the computer files in Microstation and PDFs on a CD.

This item will be paid for at the contract lump sum price for AS-BUILT DRAWINGS, which price shall be payment in full for all services, materials, labor and other items to complete the work.

BIKE PATH REMOVAL AND REPLACEMENT

Description. This work shall consist of complete removal of existing portland cement concrete or HMA pavement bike path and shall include portland cement concrete or HMA bases, overlays, and stabilized subbase. This work shall include constructing of a new hot-mix asphalt multi-use path of width specified as shown in the plans.

The removal work shall be completed in accordance with Section 440 of the Standard Specifications at the locations as shown on the plans. Disposal of all material shall be in accordance with Article 202.03 of the Standard Specifications. Earth excavation required for construction of the aggregate base course and HMA surface course shall be included in the price of BIKE PATH REMOVAL AND REPLACEMENT.

The replacement work includes aggregate base course that shall be constructed to a thickness of six (6) inches minimum below the proposed HMA surface course and shall be composed of CA-6 aggregate in accordance with Section 1004. The proposed HMA surface course shall be constructed to a thickness of two and one half (2.5) inches and shall consist of hot-mix asphalt in conformance with Section 406.

Landscape restoration shall be provided and shall include seeding, erosion control blanket, and topsoil in any disturbed area due to BIKE PATH REMOVAL AND REPLACEMENT. TOPSOIL, FURNISH AND PLACE, 6", SEEDING, CLASS 1, and EROSION CONTROL BLANKET, shall be included in the price of BIKE PATH REMOVAL AND REPLACEMENT.

Method of Measurement and Basis of Payment.
This work will be paid for at the contract unit price per SQUARE FEET for BIKE PATH REMOVAL AND REPLACEMENT measured for payment in place, after sign-off from the Village. Earth excavation and aggregate base course material shall not be measured for payment and shall be considered included in the cost of the work. Landscape restoration shall be provided in all disturbed areas due to construction of a new multi-use path and shall include seeding, erosion control blanket, and topsoil which shall be included in the cost of the work.

CLASS D PATCHES, 8" (SPECIAL)

Description. This work shall consist of removal and replacement of existing pavement at locations as directed by the Engineer. This work shall be done in accordance with Section 442 of the Standard Specifications except that the four types, namely Type I, Type II, Type III and Type IV have been combined under the pay item Class D Patches, Special.

The existing pavement including the base and bituminous surface shall be removed to a depth of eight (8) inches below the bituminous surface and replaced with 2" Surface and 6" Binder, as specified in Section 406. The surface of the patch shall meet finished grade. No patch shall be left open for more than 24 hours.

All holes, soft places and other defects in the subbase or subgrade shall be corrected by the Contractor by removing the unsuitable material, adding more bituminous mixture as specified herein in conformance with Section 406.

Surface shall be Hot-Mix Asphalt Surface Course, Mix "D", N50.
Binder shall be Hot-Mix Asphalt Binder Course, IL-19.0, N50.

This work shall also include Bituminous Materials (Tack Coat) per Section 406 of the Standard Specifications.

Method of Measurement and Basis of Payment. This work will be paid for at the contract unit price per SQUARE YARD for CLASS D PATCHES, 8" (SPECIAL) which price shall include the removal of the existing pavement base and bituminous surface and sub-grade as directed by the Engineer, and the placement and compaction of the specified bituminous mixture up to the existing bituminous surface.

COMB. CONCRETE CURB AND GUTTER REMOVAL AND REPLACEMENT

606.01 **Description.** This work shall consist of the removal of the existing curb and gutter, the construction of new concrete curb and gutter including all necessary excavation, embankment and subbase granular material, and parkway restoration with topsoil and salt tolerant sodding as shown in the detail on the plans and in accordance with Sections 606, 202, 205, 211, 252, and 311 of the Standard Specifications, Plan Sheet 19 (IDOT BD-24) and as specified herein.

606.06 **Construction Requirements.** In addition to the requirements of Article 606.06 of the Standard Specifications the Contractor shall excavate all material necessary to build the proposed curb and gutter and proposed subbase in accordance with Section 202 of the Standard Specifications. The proposed subbase shall be subbase granular material, Type B of the thickness shown in the typical section in accordance with Section 311 of the Standard Specifications. Backfill behind the proposed back of curb shall be in accordance with Section 205 of the Standard Specifications. Any existing pavement removed adjacent to the new curb and gutter shall be replaced with Class SI concrete.

Expansion joints shall be placed at a maximum spacing of 60 feet.
Contraction joints shall be placed at a maximum spacing of 15 feet.
Expansion joints shall be placed 5’ from each side of structures.

Proposed concrete curb and gutter shall be transitioned to existing curb and gutter over a length of 5 feet. This work shall be paid for at the contract unit price per foot for COMBINATION CONCRETE CURB AND GUTTER REMOVAL AND REPLACEMENT.

The following items are to be considered included in the cost to the curb and gutter removal and replacement.

- Filling gap with concrete between existing pavement and proposed Curb and Gutter Removal and Replacement, Type B-6.12 in accordance with State Standard 606001 if in grind and overlay area.
- Excavation to 12” behind the proposed Back of Curb.
- Suitable backfill materials, CA-6 if beneath driveway or sidewalk.
- Proposed ¾” preformed expansion joint at concrete sidewalks or driveways.
- 4” earth excavation and replacement with Subbase Granular Material, Type B 4”.
- Longitudinal bars, if encountered in the existing curb or curb and gutter, are not to be replaced. Cutting and removing longitudinal bars shall be included.

- Drill and grout 2 #6 epoxy coated dowel bars into the existing curb and gutter.

- Sawcutting of the curb as marked by the resident engineer.

- Parkway restoration with a minimum of 18 inch width of 4” Topsoil and Salt Tolerant Sodding shall be included and be considered included in the work described. Any disturbance beyond 18 inches shall be restored with topsoil and sod at no cost to the Owner

606.13-606.14 **Method of Measurement and Basis of Payment.** Combination concrete curb and gutter and all excavation, subbase material, Class SI concrete, backfill, topsoil and salt tolerant sodding necessary to construct the work as shown on the plans and as specified herein shall be measured and paid for at the contract unit price per FOOT for COMBINATION CONCRETE CURB AND GUTTER REMOVAL AND REPLACEMENT.

CONSTRUCTION LAYOUT

The CONTRACTOR shall be required to furnish and place construction layout stakes for this project. The Engineer will provide adequate reference points to the centerline of survey and benchmarks as shown in the plans and listed herein. Any additional control points set by the Engineer will be identified in the field to the CONTRACTOR and all field notes will be kept in the office of the Resident Engineer.

The CONTRACTOR shall provide field forces, equipment and material to set all additional stakes for this project, which are needed to establish offset stakes, reference points, and any other horizontal or vertical controls, including supplementary benchmarks, necessary to secure a correct layout of the work. Stakes for line and grade of pavement and/or curb shall be set at sufficient station intervals (not to exceed 15 m (50 ft.)) to assure substantial conformance to plan line and grade. The CONTRACTOR will not be required to set additional stakes to locate a utility line which is not included as a pay item in the contract nor to determine property lines between private properties.

The CONTRACTOR shall be responsible for having the finished work substantially conform to the lines, grades, elevations and dimensions called for in the plans. Any inspection of checking of the CONTRACTOR's layout by the Engineer and the acceptance of all or any part of it shall not relieve the CONTRACTOR of his/her responsibility to secure the proper dimension, grades and elevations of the several parts of the work. The CONTRACTOR shall exercise care in the preservation of stakes and benchmarks and shall have them reset at his/her expense when any are damaged, lost, displaced or removed or otherwise obliterated.

Responsibility of the Engineer

a. The Engineer will locate and reference the control points within or adjacent to the project limits.

   Locating and referencing the centerline of survey will consists of establishing and referencing the control points of the centerline of surveys such as PC's, PT's and as many POT's as are necessary to provide a line of sight.

b. Benchmarks will be established along the project.

c. The Engineer will make random checks of the CONTRACTOR's staking to determine if the work is in substantial conformance with the plans. Where the CONTRACTOR's work will tie into work that is being or will be done by others, checks will be made to determine if the work is in conformance with the proposed overall grade and horizontal alignment.

d. The Engineer will make all arrangements and take all cross sections from which the various pay items are to be measured.

e. Where the CONTRACTOR, in setting construction stakes, discovers discrepancies, the Engineer will check to determine their nature and make whatever revisions are necessary in the plans, including the re-cross sectioning of the area involved. Any additional re-staking required by the Engineer will be the responsibility of the

CONTRACTOR. The additional re-staking done by the CONTRACTOR will be paid for in accordance with 109.04 of the Standard Specifications.

f. The Engineer will accept responsibility for the accuracy of the initial control points as provided herein.

g. It is not the responsibility of the Engineer, except as provided herein, to check the correctness of the CONTRACTOR's stakes; however, any errors that are apparent will be immediately called to the CONTRACTOR's attention and s(he) shall be required to make the necessary correction before the stakes are used for construction purposes.

Where the plan quantities for excavation are to be used as the final pay quantities, the Engineer will make sufficient checks to determine if the work has been completed in substantial conformance with the plan cross sections.

Responsibility of the CONTRACTOR

a. The CONTRACTOR shall establish from the given survey points and benchmarks all the control points necessary to construct the individual project elements. S(he) shall provide the Engineer adequate control in close proximity to each individual element to allow adequate checking of construction operations. This includes, but is not limited to, line and grade stakes, line and grade nails in form work, and/or filed or etched marks in substantially completed construction work.

It is the CONTRACTOR's responsibility to tie in centerline control points in order to preserve them during construction operations.

b. All work shall be in accordance with normally accepted self-checking surveying practices. Field notes shall be kept in standard survey field notebooks and those books shall become the property of the Engineer at the completion of the project. All notes shall be neat, orderly and in accepted form.

c. Prior to the beginning of construction activities, all structure centerlines and pier lines are to be established by the CONTRACTOR and checked by the engineer. The CONTRACTOR shall provide a detailed structure layout showing span dimensions, staking lines and offset distances.

Measurement and Payment: This item will be paid for at the contract LUMP SUM price for CONSTRUCTION LAYOUT, which prices shall be payment in full for all services, materials, labor and other items required to complete the work.

DUCTILE IRON WATER MAIN FITTINGS

Description: This item shall include the furnishing and complete installation of "compact" ductile iron fittings with EBAA kit shown or indicated on the contract drawings, or required by constructing this improvement. The unit price bid shall include the fittings, the required jointing materials, and the cost of any cutting. Where fittings are called for on the contract plans, and the engineer directs another fitting to be used, the weight of the actual fitting used shall be the basis of the theoretical weight of the body casting only, as set forth in the material suppliers published weights for ductile fittings. All such fittings furnished shall be "compact", mechanical joint, unless otherwise approved by the engineer. All glands furnished shall be MEGA LUGS or TufGrips (Clow) retainer glands as described elsewhere in these specifications.

All ductile iron fittings shall conform in accordance with ANSI/AWWA C153/A21.53 for the mechanical joint, suitable for a maximum working pressure of three hundred fifty pounds (350lbs) per square inch.

Mechanical Joint Bolts: All bolts and nuts used on this project shall be 316 S.S. T- Head bolt and nut and no substitutes will be accepted.

Retainer Glands: Whenever any type of gland for making up a mechanical joint connection is required or specified under this contract, MEGA LUGS or TufGrips (Clow) retainer glands shall be furnished. No additional compensation will be allowed for furnishing and installing MEGA LUGS or TufGrips (Clow) retainer glands. Thrust blocks shall also be required at all mechanical joint fittings in addition to retainer glands.

Basis of Payment: This work shall be paid for at the contract unit price per pound for DUCTILE IRON WATER MAIN FITTINGS, for which the weight of the joint accessories will be included for payment. In any case, the weight per fitting allowable for payment shall not exceed the following:

Bends	Tees	Miscellaneous
90˚ bend, 6" – 83 lbs	Tee, 6" x 6" – 125 lbs	Cut-In-Sleeve, 6" – 112 lbs
90˚ bend, 8" – 106 lbs	Tee, 8" x 6" – 138 lbs	Cut-In-Sleeve, 8" – 142 lbs
90˚ bend, 10" – 155 lbs	Tee, 8" x 8" – 155 lbs	Cut-In-Sleeve, 10" – 204 lbs
45˚ bend, 6" – 71 lbs	Tee, 10" x 6" – 180 lbs	Cut-In-Sleeve, 12" – 253 lbs
45˚ bend, 8" – 93 lbs	Tee, 10" x 8" – 188 lbs	Reducer, 8" x 6" – 95 lbs
45˚ bend, 10" – 142 lbs	Tee, 10" x 10" – 125 lbs	Reducer, 10" x 6" – 95 lbs
22.5˚ bend, 6" – 66 lbs	Tee, 12" x 6" – 201 lbs	Reducer, 10" x 8" – 95 lbs
22.5˚ bend, 8" – 92 lbs	Tee, 12" x 8" – 220 lbs	Plug, 6" – 30 lbs
22.5˚ bend, 10" – 108 lbs	Tee, 12" x 10" – 271 lbs	Plug, 8" – 30 lbs
11.25˚ bend, 6" – 63 lbs		Plug, 10" – 30 lbs
11.25˚ bend, 8" – 86 lbs		Cap, 6" – 36 lbs
11.25˚ bend, 10" – 101 lbs		Cap, 8" – 48 lbs
		Cap, 10" – 35 lbs

GATE VALVES

Description: This work shall consist of furnishing and installing gate valves of the size and type specified at the locations indicated on the plans or directed by the engineer in accordance with the following provisions and the standard specifications.

Materials: All gate valves shall be resilient wedge type. Gate valve shall be iron body, fully bronze mounted, and of ample strength to withstand and operate satisfactorily under 200 psi cold water working pressure, and shall be subjected to a 300 psi by hydrostatic test pressure, made in the shop. Gate valves shall be mechanical joint and shall equal or exceed the requirements of the American Water Works Association. All valves shall be of non-rising stem type and shall be equipped with two-inch (2") square operating nuts. All valves shall open to the left or counterclockwise and shall conform to Mueller A-2370-206 East Jordan or Waterous or Mueller A-2360 with stainless steel trim bolts, and ASTM D-429 for the rubber to metal bond on the cast iron wedge. Gates will be epoxy impregnated in accordance with AWWA C550.

Basis of Payment: This work shall be paid for at the contract unit price per each for GATE VALVE of the respective size listed in the "bidding schedule", which price shall be payment in full for all work as specified.

ITEMS ORDERED BY ENGINEER

Description. This item will be used at the discretion of the ENGINEER for items including, but not limited to, landscaping / decorative landscaping (or other restoration), investigation and repair/replacement of items discovered on site, and/or structure modifications as determined in the field by the Engineer.

General Requirements. Work shall be done under this item as directed by the Engineer.

Basis of Payment. This work will be paid for in units of one dollar ($1.00) under ITEMS ORDERED BY THE ENGINEER. Before work begins, the ENGINEER and the CONTRACTOR shall agree to the amount to be paid for each item of work.

PORTLAND CEMENT CONCRETE SIDEWALK 5 INCH, SPECIAL

Description. This work shall conform to Sections 424 of the Standard Specifications. Expansion joints shall be used wherever the new concrete abuts existing concrete. The limits of all sidewalk removal shall be saw cut. Areas and locations of all sidewalk removal and replacement will be marked on the plans. Replacement will be with a P.C.C. sidewalk section 5" thick on a prepared granular subbase at least 4" thick. Sidewalks shall be 5" thick except at driveway locations, where it shall be 6" thick. All excavation required to attain the minimum sidewalk section thickness required shall be included in this work.

Method of Measurement and Basis of Payment. This item shall be paid for at the contract unit price per SQUARE FOOT for PORTLAND CEMENT CONCRETE SIDEWALK 5 INCH, SPECIAL, measured in place including all saw cutting, expansion and contraction joints, and finishing. All full depth saw-cutting and granular subbase, as required, will be included in this item.

PRECONSTRUCTION VIDEO TAPING

Description. This work consists of providing high quality color video and audio recording of construction areas prior to the start of construction, including coverage of all areas that will be affected by the construction or installation of pipelines such as streets, driveways, sidewalks, fences, trees or plantings, or other items that may be damaged or have to be removed and replaced as part of the construction.

The Contractor shall provide high energy, high quality, color videos on DVD format. Each video shall begin with current date, project name, and Owner, followed by descriptions of the general location, street names, addresses, and data that describes location and subject of viewing. The video shall be taped at a rate of speed not exceeding 48 feet per minute and panning rates and zoom-in or zoom-out rates shall be controlled to provide clarity of object during playback. The finished product shall be provided with bright, sharp, clear pictures and accurate colors free from distortion, tearing, rolls, or other forms of picture imperfection. The audio shall have proper volume and clarity. All recording shall be done at good times of visibility, and when no more than 10 percent of snow or fallen leaf cover is present. The areas shall not be recorded earlier than 6 months prior to the start of construction.

Method of Measurement and Basis of Payment. This work shall be paid for at the contract unit LUMP SUM price for PRECONSTRUCTION VIDEO TAPING.

PRIVATE WATER SERVICE ASBESTOS ABATEMENT

Description. This work consists of the testing for, removal, and proper disposal of friable and non-friable asbestos that is encountered during lead service replacement work.

General. The Contractor shall notify the Engineer if they anticipate that asbestos may be encountered when completing the lead water service replacement work. The Contractor shall coordinate any necessary testing, removal, and disposal of asbestos with the Engineer. No work shall take place without the approval of the Engineer.

Requirements. This work shall be completed in accordance with the requirements of the U.S. Environmental Protection Agency (USEPA), the Illinois Environmental Protection Agency (IEPA), Illinois Department of Health (IDPH) and the Occupational Safety and Health Administration (OSHA).

Basis of Payment. The testing, removal and abatement of asbestos shall be paid in accordance with Article 109.04 of the Standard Specifications.

STORM AND SANITARY SEWER POINT REPAIR (WATER MAIN REQUIREMENTS)

Description.
This work shall consist of removing and replacing portions of existing storm sewer and sanitary sewer of the diameter and depth specified for the length and location shown on the plans or as directed by the Engineer to meet IEPA water main separation requirements.

The material for all replacement storm sewer and sanitary sewer shall consist of polyvinyl chloride (PVC) pipe conforming to AWWA C900 DR 18 with push-on joints conforming to ASTM D-3139 with elastomeric seals conforming to ASTM F477 unless otherwise approved by the Engineer.

The locations and limits of the removals and replacement as shown on the plans have been determined from televised inspections of the existing sewers. The Contractor shall excavate and expose the existing sewers at these locations to determine the exact limits of removal and replacement. The cost for the exploratory excavation will not be paid for separately but shall be considered incidental to the contract unit price for STORM SEWER POINT REPAIR (WATER MAIN REQUIREMENTS) and SANITARY SEWER POINT REPAIR (WATER MAIN REQUIREMENTS) of the diameter and depth specified.

The excavation, bedding, pipe laying, backfilling, pipe removal and replacement, and clean up is considered incidental and shall be completed in accordance with section 550 of the Standard Specifications. Storm sewer or sanitary sewer couplings, collars, wyes, and fittings necessary to construct the sewers or complete a connection to another sewer or structure shall not be measured for payment and shall be considered incidental to this item. Materials for the fittings as well as their required locations shall be approved and directed by the Engineer.

When the storm sewer point repair or sanitary sewer point repair occurs under any section of roadway, driveway or other pavement, trench backfill will be paid for separately at the contract unit price for TRENCH BACKFILL, SPECIAL. In any case otherwise, landscape restoration shall be provided and shall include IDOT Class 1A seeding, erosion control blanket, and 4” topsoil in any disturbed area due to point repair, which shall be considered incidental to the contract.

Method of Measurement and Basis of Payment.
This work will be paid for at the contract unit price per lineal foot for STORM SEWER POINT REPAIR (WATER MAIN REQUIREMENTS) and SANITARY SEWER POINT REPAIR (WATER MAIN REQUIREMENTS) of the diameter and depth specified. The lineal footage of the work for removal and replacement will be measured for payment. The contract unit price shall include all labor, material, and equipment necessary to complete the work as specified.

TRAFFIC CONTROL AND PROTECTION (SPECIAL)

The Traffic Control and Protection shall meet the requirements of Article 701, Work Zone Traffic Control and Article 702, Work Zone Traffic Control Devices of the Standard Specifications for Road and Bridge Construction adopted January 1, 2012.

"701.01 Description" shall be replaced with the following:

701.01 Description
This item of work shall include furnishing, installing, maintaining, replacing, relocating and removing all traffic control devices used for the purpose of regulating, warning or directing traffic during the construction or maintenance of this improvement.

Traffic Control and Protection shall be provided as called for in the Plans, these Special Provisions, applicable Highway Standards, applicable sections of the Standard Specifications, or as directed by the Engineer.

The governing factor in the execution and staging of work for this project is to provide the motoring public with the safest possible travel conditions along the roadway through the construction zone. The Contractor shall arrange his operations to keep the closing of any lane of the roadway to a minimum.

Traffic Control Devices include signs and their supports, signals, pavement markings, barricades with sand bags, channelized devices, warning lights, arrow boards, flaggers, or any other device used for the purpose of regulating, detouring, warning or guiding traffic through or around the construction zone.

"701.04 General," section "(b)" paragraph 4 shall be replaced with the following:

The Contractor is required to conduct routine inspections of the work site at a frequency that will allow for the timely replacement of any traffic control device that has become displaced, worn or damaged to the extent that it no longer conforms to the shape, dimensions, color and operational requirements of the MUTCD, the Traffic Control Standards or will no longer present a neat appearance to motorists. A sufficient quantity of replacement devices, based on vulnerability to damage, shall be readily available to meet this requirement.

The Contractor shall be responsible for the proper location, installation and arrangement of all traffic control devices. Special attention shall be given to advance warning signs during construction operations in order to keep lane assignments consistent with barricade placement at all times. The Contractor shall immediately remove, cover or turn from view of the motorists all traffic control devices which are inconsistent with detour or lane assignment patterns and conflicting conditions during the transition from one construction stage to another. When the Contractor elects to cover conflicting or inappropriate signing, materials used shall totally block out reflectivity of the sign and shall cover the entire sign. The method used for covering the signing shall meet with the approval of the Engineer.

The Contractor shall coordinate all traffic control work on this project with adjoining or overlapping projects, including barricade placement necessary to provide a uniform traffic detour pattern. When directed by the Engineer, the Contractor shall remove all traffic control

devices which were furnished, installed and maintained by him under this contract, and such devices shall remain the property of the Contractor. All traffic control devices shall remain in place until specific authorization for relocation or removal is received from the Engineer.

The Contractor shall ensure that all traffic control devices installed by him are operational, functional and effective 24-hours a day, including Sundays and holidays.

"701.04 General" shall be modified by adding the following section:

(G) PUBLIC SAFETY AND CONVENIENCE:

The Contractor shall provide a telephone number where a responsible individual can be contacted on a 24-hour a day basis to receive notification of any deficiencies regarding traffic control and protection. The Contractor shall dispatch men, materials, and equipment to correct any such deficiencies. The Contractor shall respond to any call from the City or its representative concerning any request for improving or correcting traffic control devices and begin making the requested repairs within two hours from the time of notification.

Personal vehicles shall not park within the right-of-way except in specific areas designated by the Engineer. All roads shall remain open to traffic, the Contractor, may close one lane due to construction only between the hours of 9:00 a.m. and 3:00 p.m. on two lane roads, and shall maintain at least one lane in each direction on four or more lane roads, during the construction of this project. The Contractor shall also maintain entrances and side roads along the proposed improvement. Interference with traffic movements and inconvenience to owners of abutting property and the public shall be kept to a minimum. Any delays or inconveniences caused by the Contractor by complying with these requirements shall be considered as included in the contract, and no additional compensation will be allowed.

On two lane roads, the Contractor is to plan his work so that there will be no open holes in the pavement and that all barricades will be removed from the pavement during non-work hours.

On four or more lane highways, there shall be no open holes in the pavement being used by the traveling public. Lane closures, if allowed, will be in accordance with the applicable standards, any staging details shown in the plans and other applicable contract documents.

The Contractor shall remove all equipment from the shoulders and medians after work hours.

No road closures or restrictions shall be permitted except those covered by Standard Designs without written approval by the Engineer.

"701.04 General" shall be modified by adding the following section:

(H) DEFICIENCY CHARGE:

The primary concern of the City is to maintain a safe travel way for the public and a safe Environment for the worker in the construction zone. The Contractor is expected to comply with the Standard Specifications, contract plans, these Special Provisions, and directions from the Engineer concerning traffic control protection. The Contractor shall provide a

telephone number where a responsible individual can be contacted on a 24-hour a day basis to receive notification of any deficiencies regarding traffic control and protection. The Contractor shall immediately respond correcting traffic control deficiencies by dispatching men, materials and equipment to correct such deficiencies.

If the Contractor fails to begin corrections to the traffic control deficiencies within two (2) hours of the initial attempt of notification by the City or its representative or fails to restore the traffic control and protection compliance with the specifications within eight (8) hours of the original attempt of notification, the Engineer may execute such work as deemed necessary to correct the deficiencies. The cost thereof shall be deducted from monies due or which may be due the Contractor.

Failure to comply with directions from the Engineer for corrections or modifications to the traffic control and protection will result in a charge of $500.00 per calendar day. This charge is separate from the cost of any corrective work ordered. The contractor shall not be relieved of any contractual responsibilities by the City's action.

Delays to the Contractor caused by complying with these requirements will be considered included in the item for Traffic Control and Protection, and no additional compensation will be allowed.

If the Engineer, shall require additional traffic control to be installed in accordance with standards and/or designs other that those included in the Plans. The standards and/or designs will be made available to the Contractor at least one week in advance of the change in traffic control. Payment for any additional traffic control required will be in accordance with Article 109.04 of the Standard Specifications. Revisions in the phasing of construction or maintenance operations, requested by the Contractor, may require traffic control to be installed in accordance with standards and/or designs other than those included in the plans. Revisions or modifications to the traffic control shown on the contract shall be submitted by the Contractor for approval by the Engineer. No additional payment will be made for a Contractor requested modification. In the event the sum total value of all work items for which traffic control and protection is required is increased or decreased by more than ten percent (10%), the contract bid price for Traffic Control and Protection will be adjusted as follows:

Adjusted contract price = .25P + .75P [1 +(X-0. 1)]

Where "P' is the contract price for Traffic Control and Protection

Difference between original and final sum total value of all work items for which traffic

Where "X"= control and protection is required.

Original sum total value of all work for which traffic control and protection is required.

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

In the event the Department cancels or alters any portion of the contract which results in elimination or noncompletion of any portion of the work, payment for partially completed work will be made in accordance with Article 104.02 of the Standard Specifications.

"702.03 Channeling Devices" section "(b)", paragraph 1 shall be replaced with the following:

(b) Barricades

Type 1 and Type 1 A Barricades are intended for use on lower speed roads and shall not be used where the normal posted speed limit is 45 m.p.h. or greater. The normal posted speed limit for construction area is 40 m.p.h. Type 1 and Type 2 Barricades shall not be intermixed within an individual string of barricades. Type 3 Barricades shall be used for road and lane closures and shall not be used for channelization or delineation.

Any drop off greater than 75 mm (three inches), but less than 150 mm (six inches), within 2.5 m (eight feet) of the pavement edge shall be protected by Type 1 or 2 barricades equipped with mono-directional steady burn lights at 30 m (100 foot) center to center spacing. If the drop off within 2.5m (eight feet) of the pavement edge exceeds 150 mm (six inches), the barricades mentioned above shall be paced at 15 m (50 foot) center to center spacing. Barricades that must be placed in excavated areas shall have a leg extension installed such that the top of the barricade is in compliance with the height requirements of Standard 702001.

All Type 1 and Type 2 barricades, shall be equipped with a steady burn light when used during hours of darkness unless otherwise stated herein.

Check barricades shall be placed in work areas perpendicular to traffic every 300 m (1,000 feet), one per lane and per shoulder, to prevent motorists from using work areas as a traveled way. Two additional check barricades shall be placed in advance of each patch excavation or any other hazard in the work area, the first at the edge of the open traffic lane and the second centered in the closed lane. Check barricades shall be Type 1 or 2 and equipped with a flashing light.

"702.03 Channeling Devices" section "(c)" Vertical Panels, add the following:

All vertical panels shall be equipped with a steady burn light when used during the hours of darkness unless otherwise stated herein or in the Plans.

"702.05 Signs" section "(a)" add as paragraph 7:

Construction signs referring to daytime lane closures during working hours shall be removed, covered, or turned away from the view of the motorists during non-working hours.

Measurement and Payment: This item will be paid for at the contract LUMP SUM price for TRAFFIC CONTROL AND PROTECTION (SPECIAL), which prices shall be payment in full for all services, materials, labor and other items required to complete the work.

TRENCH BACKFILL, SPECIAL

Description. The provisions of Section 208 of the "Standard Specifications for Road and Bridge Construction" shall be modified such that the material used for trench backfill shall be CA-6 coarse aggregate. The trench backfill shall be compacted by Method 1, as defined in Article 550.07 of the Standard Specifications, which states the material shall be deposited in uniform lifts not exceeding 12 inches in depth (loose measure), and each lift shall be compacted by ramming or tamping with tools approved by the ENGINEER. Method 2 may also be allowed by the CITY with written approval from the OWNER or Public Works Department assuming 2 weeks of dry time post jetting. All material and placement shall be in accordance with IDOT Policy Memorandum 11-08.4.

Materials. All materials shall be in accordance with Sections 208 and 1003 of the "Standard Specifications for Road and Bridge Construction" and shall be approved by the Engineer prior to placement. Furnished TRENCH BACKFILL, SPECIAL material shall be produced from an IDOT-approved site. All material must be of sound durable aggregate and completely free of all deleterious material, such as wood, wood chips, brush, plastic, etc. Non-mechanically blended RAP may be allowed up to a maximum of 5.0 percent.

Removal of TRENCH BACKFILL, SPECIAL prior to PATCHES of the type and thickness specified, or reconstruction of the roadway, shall be considered incidental to this pay item.

Any material conforming to the requirements of Articles 1003.03 or 1004.05 which has been excavated from on-site trenches shall be used for backfilling the trenches. No compensation shall be made for TRENCH BACKFILL, SPECIAL for the portion of the trench backfilled with excavated material. Excavated material must meet all specifications and requirements as stated herein to the approval of the Engineer; any necessary testing for excavated material approval shall be considered incidental to this pay item.

Method of Measurement and Basis of Payment. This work will be paid for at the contract unit price per CUBIC YARD for TRENCH BACKFILL, SPECIAL which price shall include all material, equipment, and labor necessary to place and compact the trench backfill as specified. The quantity of trench backfill for payment shall be determined by using the method of measurement defined in Article 208.03 (b) of the Standard Specifications. Material coming from an un-approved source shall not be paid for and shall be removed from the project site at no cost.

VALVE BOXES

Description. This work shall consist of constructing Valve Boxes for water mains and water services in accordance with Section 44 of the latest edition of the “Standard Specifications for Water Construction in Illinois” and Section 602 of the latest edition of the “Standard Specifications for Road and Bridge Construction” except as modified herein.

All Adjustable valve boxes shall be provided on buried valves:

a. Valve boxes shall be compatible with size and type of valve protected.
b. Valve boxes shall be extended to finished grade.
c. Valve box cover shall be marked "WATER" for potable water piping valves.
d. Bituminous coated carbon steel valve extension stems and 2-inch square operating nuts 2 inches below the cover shall be provided.

Measurement and Payment. This work will be paid for at the contract unit price each for VALVE BOXES of the diameter specified, together with the specified frames, grates and lids, which price shall include all appurtenances, excavation, and backfill to complete the work as specified herein.

WATER MAIN CASING PIPE, DUCTILE IRON

Description. This work shall consist of installing ductile iron casing pipes around water mains in open cut trenches to meet the water and sewer separation requirements complete in place by open cut method.

Materials. Ductile iron casing pipe shall have a minimum yield strength not less than 35,000 psi. Ductile iron casing pipe size and piping wall thickness shall be as shown on the Drawings. All casing pipe shall be manufactured of new billet ductile iron, cylindrical, with smooth bituminous coated walls inside and outside. Ductile iron casing pipe shall conform to ASTM A53 Grade B, ASTM A139 Grade B, or pipe fabricated in accordance with AWWA C200 using ASTM A36 steel. Casing pipe minimum wall thickness shall be as required by permit requirements of the agency having local jurisdiction, or the CONTRACTOR'S method of construction, whichever is greater.

Construction Requirements. During installation of the ductile iron casing pipe and as additional lengths of steel casing pipe are placed end to end, the ends of the ductile iron casing pipe shall be welded together so that the completed casing forms a continuous length. When the water main (carrier pipe) is placed in the casing pipe, casing spacer shoes shall be placed on the water main (carrier pipe) before insertion into the ductile casing pipe. A minimum of 3 casing spacers shall be provided per standard 18 ft. to 20 ft. length of water main piping or approximately every 6 feet. After the installation of the water main within the ductile iron casing pipe is complete, the annular space between the water main and the casing pipe at both ends shall be sealed with courses of brick and mortar. Water main carrier pipe, casing spacers, and brick and mortar seal shall be paid for separately under the pay item for WATER MAIN IN CASING.

Method of Measurement and Basis of Payment. This work will be paid for at the contract unit price per foot for WATER MAIN CASING PIPE, DUCTILE IRON of the diameter specified, which shall be payment in full for the work as specified.

WATER MAIN CONNECTION TO EXISTING WATER MAIN (NON-PRESSURE) - DISCONNECT AND CAP EXISTING

Description. This work shall consist of the furnishing of all labor, tools, and equipment necessary to effect a connection to the existing water main or the disconnection of an existing water main, intended to be otherwise abandoned, or taken out of service upon completion of this project. All work shall be in accordance with the Standard Specifications.

Construction Requirements. The CONTRACTOR shall coordinate a minimum of 48 hours in advance with the water superintendent for a shutdown connection of the existing water main within the area affected by this work. All materials shall be on hand before work is undertaken to insure that a minimum of time is necessary to complete the work required on the plans. **Only Water Department Personnel** will be in charge of closing system valves, but the CONTRACTOR will lend any assistance necessary to expedite the shutdown. In addition, when it becomes necessary to pass out notices of a system shutdown, the owner may direct the CONTRACTOR to distribute "**NOTICES"** door to door as discussed elsewhere in these Specifications.

The CONTRACTOR will also be required to furnish any and all pipe fittings, required jointing materials, and all work necessary to complete the connection as specified. This includes but not limited to any necessary plugs and corporation stops. A MJ x MJ ductile long solid sleeve shall be used as a cut-in-sleeve. All fittings and pipe that are installed under this item shall be placed on a granular bedding a minimum of six inches (6") in thickness. Pipe fittings shall also be paid for under a separate item in the contract. In addition, whenever a connection is made and a portion of the existing system will not be subject to the chlorination procedure for the new main, the CONTRACTOR shall provide tablet disinfection procedures as described in Section 41-2.14C (3) of the Standard Specifications. Any granular backfill will be paid for under a separate item in the contract. All other items required for restoration (i.e. pavement patches, sodding, etc.) will be paid for under the specific pay item in the contract. After the connection has been made, a visual inspection shall be made for leaks under system pressure, irrespective of the pressure test that may be required under other provisions in the contract. If no visual leaks are detected, the excavation shall be backfilled with materials as directed by the CITY.

Basis of Payment. The work shall be paid for at the contract unit price per each for WATER MAIN CONNECTION TO EXISTING WATER MAIN (NON-PRESSURE) – DISCONNECT AND CAP EXISTING, which price shall be payment in full for all work as specified. Any water main removed to cut and cap an existing water main shall be incidental to this item.

WATER MAIN IN CASING

Description. This work shall consist of installing ductile iron water main in steel casing pipes with casing spacers and casing end seals in open cut trenches to meet the water and sewer separation requirements complete in place in accordance with the plan details.

Materials. The proposed water main in casing pipe shall be ductile iron (DIP) pipe of the diameter as shown in the plans and shall conform to all requirements shown in the special provision for DUCTILE IRON WATER MAIN and as approved by the Engineer.

Construction Requirements. Construction requirements shall conform to the specifications for DUCTILE IRON WATER MAIN, meet the requirements of the latest edition of the "Standard Specifications for Water and Sewer Main Construction in Illinois", meet applicable portions of Section 550 of the Standard Specifications, and shall be in accordance with plan details.

After the casing pipe has been installed and accepted by the Engineer, the carrier pipe shall be installed as previously specified. The carrier pipe shall be pushed and pulled into place in such a manner that there is no opportunity for a joint to be opened. The carrier pipe length shall be adjusted so that the end extends past the end of the casing pipe approximately 12 to 18 inches. Carrier pipe shall be hydrostatically pressure tested as specified in the applicable Special Provision prior to sealing annular space with brick and mortar. When the water main (carrier pipe) is placed in the casing pipe, casing spacer shoes shall be placed on the water main (carrier pipe) before insertion into the steel casing pipe. A minimum of 3 casing spacers shall be provided per standard 18 ft. to 20 ft. length of water main piping or approximately every 6 feet. After the installation of the water main within the steel casing pipe is complete, the annular space between the water main and the casing pipe at both ends shall be sealed with courses of brick and mortar.

Bedding, haunching, and initial backfill to 12" over the top of the casing pipe shall be included in the cost of this item as shown the plan details.

Casing spacers shall be nylon and as approved by the Engineer. Casing spacers shall be installed in accordance with the manufacturer's guidelines and plan details, and approximately every 6 feet along the length of the pipe. The furnishing and placing of the casing spacers shall not be measured for payment and shall be included in the cost of WATER MAIN IN CASING.

The annular spaces at the ends of the finished casing pipe installed shall be sealed using casing end seals. Casing end seals shall be preformed rubber seals using Cascade model CCES End Seals or approved equal. Mortaring of casing ends shall only be allowed with approval from the Engineer.

Utility Marking Tape shall be included in the cost of the item, and shall be installed according to the plan details and the requirements shown in the special provision for DUCTILE IRON WATER MAIN.

Method of Measurement and Basis of Payment. This work will be paid for at the contract unit price per foot for WATER MAIN IN CASING, of the diameter specified, which shall be payment in full for the work as specified.

WATER MAIN LINE STOP

Description. This work shall consist of the placement of a self-contained unit of the size indicated on the plans for the purpose of abandoning a section of water main without interruption of service to that section of main that is to remain active.

General. The line stop unit shall be a self-contained hydraulic (hand pump operated) ram. The line stopping device shall be of such a design that when hydraulic pressure is applied, the rubber will expand and conform to the inside diameter of the pipe and tuberculation inside the main (if any) will be moved outside of the sealing area. The line stop shall be of the "Short Stop" variety which will require removing only the top of the pipe during operation. All fittings shall employ an inside diameter thread, screw-type connection. After insertion of the plug, a screw-on cap shall be used and bolted down. The system shall be capable of containing a water pressure of 150 psi. Shop drawings for line stop sleeves shall be submitted for approval by the Engineer prior to delivery to the job site.

Basis of Payment. This work will be paid for at the contract unit price EACH for WATER MAIN LINE STOP, of the diameter specified, which price shall be payment in full for all excavation, legal disposal of excavated material and trench backfill.

WATER SERVICE INTERIOR RESTORATION

Description. This work consists of the interior restoration of buildings to repair any damages caused by the lead water service replacement work.

General. Interior restoration shall include removal, disposal, and replacement of structural components of the flooring and/or walls as well as restoration of flooring materials, drywall, trim, paint, etc. The interior of each building shall be restored to preconstruction conditions or better. Contractor shall be responsible for documenting the pre-project condition of each building. This work will be paid for separately as Videotaping (Interior and Exterior).

Method of Measurement and Basis of Payment. This work shall be measured and paid for at the contract unit price per each building/residence as WATER SERVICE INTERIOR RESTORATION, which payment shall be full compensation for all labor, materials and equipment necessary to completely restore the interior of buildings with interior lead service replacement work to preconstruction conditions or better as specified.

WATER SERVICE LINE (PRIVATE) – LEAD SERVICE REPLACEMENT

Description. This work shall consist of the replacement of lead water services on the private side of the curb stop as designed herein.

General. Where existing lead services are encountered on private property, exterior private water services shall be completely replaced regardless of whether the existing service is located in the front yard, side yard or rear yard. For any property where an existing private lead water service is encountered, the service shall be replaced as follows:

- Where the water meter is located inside the house, the private service shall be replaced from the b-box to the existing shut-off valve or 18-inches inside of the house. If there is no shut-off valve, the Contractor shall install a valve that meets the requirements of the current Illinois Plumbing Code. Water meters shall not be replaced.

- Where the water meter is located outside the house, the lead service shall be replaced from the b-box, thru the meter, to the nearest interior shut off valve or 18 inches inside of the house, whichever is closer. If there is no shut-off valve, the contractor shall install a valve that meets the requirements of current Illinois Plumbing Code. The water meter shall not be replaced.

Construction Requirements. All work shall be performed in accordance with ANSI/AWWA Standard C810-17, Replacement and Flushing of Lead Service Lines and the Illinois Plumbing Code.

The Contractor shall install the water service pipe to the water meter by method of trenchless installation. The water service shall be one continuous length. The use of couplings, joints, etc. will not be allowed. If the Contractor plans on using the pipe pulling method, he/she shall have a horizontal directional drill on site in the event the pipe pulling method is unsuccessful. Upon approval of the Engineer, the Contractor may install the water service pipe in an open trench. If an open trench is utilized, the trench shall be backfilled with excavated material. The excavated material shall be compacted in 12-inch lifts to the satisfaction of the Engineer.

The water service material shall be 1-inch diameter Type K copper or HDPE (CTS), PE4710, SDR 9, ASTM D2737, AWWA C901 with two (2) 10-guage tracer wires. One wire shall be installed at the 1 o'clock position and the other shall be at the 6 o'clock position. Water service tubing shall be blue. Compression type fittings with stainless steel inserts shall be used at each connection. Splicing of the water service pipe will not be permitted.

Coring of concrete floor slabs and foundation walls shall comply with the following:

Coring of Concrete Floor Slabs

For buildings without basements, the Contractor shall core drill the concrete floor slab to allow for penetration of the water service pipe. The use of breakers or concrete saws to cut through the floor slab will not be allowed. The Contractor shall exercise caution to prevent damage to the floor slab caused by the coring operation. After all work is completed, the cored hole shall be completely sealed with hydraulic cement to

prevent water infiltration. The hydraulic cement shall be a high-quality, engineer approved material.

Coring of Foundation Walls

For houses with basements, the service will be installed through the foundation/basement wall in lieu of the basement floor unless otherwise directed by the Engineer. The Contractor will be allowed to core drill through the basement wall as part of the same trenchless installation operation of the private service. If the Contractor is unable to perform this task, either by lack of satisfactory performance (as determined by the Village) or existing condition limitations, the service will be installed through the basement wall as follows:

An exterior pit shall be hand excavated. Hydro excavation will not be allowed. The Contractor shall core drill the existing foundation wall to allow for the penetration of the water service pipe.

The interior and exterior of the cored hole shall be completely sealed with hydraulic cement to prevent water infiltration. The hydraulic cement shall be a high-quality, engineer approved material. If the cored hole is exposed on the outside of the building, a coating of roof cement shall be added to the exterior of the foundation wall and should completely coat the seams of the cored hole. The Contractor shall exercise caution to prevent damage to the foundation caused by the coring operation. Upon completion of all work, the exterior pit shall be backfilled with excavated material compacted in 12-inch lifts.

The existing water meter shall remain and shall not be removed. All material necessary to connect the new water service to the existing plumbing shall be provided and installed by the Contractor's licensed plumber. All interior water service pipe material shall be type "L" copper pipe; 1-inch diameter on the upstream side of the meter; ¾-inch size (or match existing) on the downstream side of the meter, as necessary. The Contractor is responsible for any modifications to the interior plumbing necessary to install the new water service.

The Contractor shall be responsible for removing and properly disposing of any debris generated by the work on the interior and exterior of the home, including any obsolete lead plumbing material generated by the internal plumbing work. If it is necessary to move fixtures to complete the work, they shall be placed in their original location after completion of the work.

This work shall also include abandoning the exterior lead water service. The lead water service line shall be cut, capped, and abandoned in place

Restoration. All landscape and hardscape removal and restoration shall be included in this item. This shall include, but not be limited to, removal and replacement of existing decks, sidewalks, patios, decorative landscaping, fences, sheds, grassed areas, walkways, trees, bushes etc., required to install the private water service. No separate payment shall be allowed for these items and the Village's intent is to minimize private property impacts through the use of trenchless installations. All private property shall be restored to pre-construction conditions or better. All grassed areas shall be restored with a minimum of 4" of topsoil and sodding, unless otherwise directed by the Engineer. Sodding (including supplemental

watering) shall be completed as specified except that the work shall be included in the cost of WATER SERVICE LINE (PRIVATE) – LEAD SERVICE REPLACEMENT and will not be paid for separately.

The private water service layouts and b-boxes shown on the plans are approximate and provided to aid Contractors with bidding. If approved by the Engineer, the layouts may be adjusted to minimize conflicts with existing landscaping and hardscaping. The bid price for this item shall include the cost of all work to be done on private property for each private water service.

The public portion of the water service (i.e. portion located with the public ROW) shall be installed and paid for in accordance with the special provision for WATER SERVICE REPLACEMENT WITH NEW BUFFALO BOX, (LONG SIDE) OR WATER SERVICE REPLACEMENT WITH NEW BUFFALO BOX, (SHORT SIDE)

Basis of Payment. This work shall be paid for at the contract unit price per each for WATER SERVICE LINE (PRIVATE) – LEAD SERVICE REPLACEMENT.

WATER SERVICE REPLACEMENT WITH NEW BUFFALO BOX

Description: This work shall consist of replacing and reconnecting existing water services to the new water main included on this project. Only services currently being used will be replaced. The work shall include a corporation stop and use of saddle / tapping sleeve to the new water main and new copper water service line, as needed to affect the elevation adjustment for reconnecting the existing water service connection to the new main, to install a new buffalo box on the parkway on the existing water service line, and removal of the existing buffalo box. From the new service to the existing service brass couplings shall be used for the connections as necessary. Removal and disposal of the old b-box is included in this pay item.

Materials: All water service pipe shall be pure copper, type K, for underground utility lines, conforming to ASTM B-88 and B-251. Corporation stops shall be Mueller H-15000-N or approved equal and all necessary fittings shall be solid brass. Curb stops shall be Mueller H15154 or approved equal. All fittings shall be of the type approved by the owner and in accordance with local plumbing codes. Adaptor fitting shall be of the compression type. A Smith Blair or approved equal full stainless steel tapping sleeve shall be required. All materials furnished shall be Mueller or equal or City standard. Buffalo boxes shall be Minneapolis Pattern, or approved equal accepted by the owner as standard and shall meet with their approval prior to ordering.

Installation: After the new water main has been tested, chlorinated, approved and placed in service, each water service shall be reconnected to the new water main. The item of WATER SERVICE REPLACEMENT WITH NEW BUFFALO BOX of the size specified shall include all labor, materials equipment, and tools necessary to otherwise disconnect and transfer the existing service, with any new service line and buffalo box being included in this pay item. If the CONTRACTOR decides to open cut for water services, all required trench backfill and restoration will be incidental to the new services. Any settlement of the trench will be the responsibility of the Contractor to repair at their expense.

Basis of Payment: This work will be paid for at the contract unit price per each for WATER SERVICE REPLACEMENT WITH NEW BUFFALO BOX (LONG SIDE) or WATER SERVICE REPLACEMENT WITH NEW BUFFALO BOX (SHORT SIDE) of the size specified of the new water service in which prices shall be payment in full for all work as specified.

INSTRUCTIONS TO BIDDERS ON FILLING OUT FORMS

1. The Bid Proposal must be signed by an authorized agent. The corporate seal, if applicable, must be affixed. The unit price(s), amount(s), date of signature and any other relevant information must be stated.

2. The BIDDER'S Certification Form must be signed by an authorized agent. The date, notary public seal and any other relevant information must also be properly filled out.

3. The Performance Reference Form must also be properly filled out.

4. The Compliance with Confined Space Entry Procedure Policy and Procedure Form must be signed by an authorized agent.

IF THESE FOUR FORMS ARE NOT PROPERLY FILLED OUT, THE BID MAY BE REJECTED.

WORKING DAYS (BDE)

Effective: January 1, 2002

The Contractor shall complete the work within:

30 working days if the Base Bid is selected,

33 working days if the Base Bid + Alternate 1 is selected,

36 working days if the Base Bid + Alternate 1 + Alternate 2 is selected, and

40 working days if the Base Bid + Alternate 1 + Alternate 2 + Alternate 3 is selected

80071

COMPLIANCE WITH CONFINED SPACE ENTRY POLICY AND PROCEDURE FORM

The undersigned is an authorized representative of

Name of Company: _____,
and certifies that they will comply with all requirements of 29 CFR Part 1910 Permit Required Confined Spaces for General Industry. Special attention is drawn to Section 1910.146(c)(9) which provides as follows:

> In addition to complying with the permit space requirements that apply to all employers, each CONTRACTOR who is retained to perform permit space entry operations shall:
>
> (i) Obtain any available information regarding permit space hazards and entry operations from the host employer;
>
> (ii) Coordinate entry operations with the host employer, when both host employer personnel and CONTRACTOR personnel will be working in or near permit spaces, as required by paragraph (d)(11) of this section; and
>
> (iii) Inform the host employer of the permit space program that the CONTRACTOR will follow and of any hazards confronted or created in permit spaces, either through a debriefing or during the entry operation.

Signed: _____

Title/Position: _____

Subscribed and sworn to before me this _____ day of _____, 2023.

_____
Notary Public

Lake County Prevailing Wage Rates posted on 5/22/2023

						Overtime								
Trade Title	**Rg**	**Type**	**C**	**Base**	**Foreman**	**M-F**	**Sa**	**Su**	**Hol**	**H/W**	**Pension**	**Vac**	**Trng**	**Other Ins**
ASBESTOS ABT-GEN	All	ALL		47.40	48.40	1.5	1.5	2.0	2.0	17.05	15.21	0.00	0.90	
ASBESTOS ABT-MEC	All	BLD		39.60	42.77	1.5	1.5	2.0	2.0	14.77	13.59	0.00	0.86	
BOILERMAKER	All	BLD		54.71	59.63	2.0	2.0	2.0	2.0	6.97	25.06	0.00	2.83	
BRICK MASON	All	BLD		49.81	54.79	1.5	1.5	2.0	2.0	12.10	21.56	0.00	1.10	
CARPENTER	All	ALL		52.01	54.01	1.5	1.5	2.0	2.0	11.79	24.76	1.50	0.80	
CEMENT MASON	All	ALL		48.00	50.00	2.0	1.5	2.0	2.0	11.65	28.36	0.00	0.55	
CERAMIC TILE FINISHER	All	BLD		44.18	44.18	1.5	1.5	2.0	2.0	12.25	14.77	0.00	1.00	
CERAMIC TILE LAYER	All	BLD		51.44	55.44	1.5	1.5	2.0	2.0	12.25	18.48	0.00	1.08	
COMMUNICATION TECHNICIAN	All	BLD		41.20	44.00	1.5	1.5	2.0	2.0	13.82	18.94	2.16	0.93	
ELECTRIC PWR EQMT OP	All	ALL		47.56	64.89	1.5	1.5	2.0	2.0	7.00	13.32	0.00	1.19	1.43
ELECTRIC PWR GRNDMAN	All	ALL		36.53	64.89	1.5	1.5	2.0	2.0	7.00	10.23	0.00	0.92	1.10
ELECTRIC PWR LINEMAN	All	ALL		57.17	64.89	1.5	1.5	2.0	2.0	7.00	16.01	0.00	1.43	1.72
ELECTRIC PWR TRK DRV	All	ALL		37.86	64.89	1.5	1.5	2.0	2.0	7.00	10.61	0.00	0.95	1.14
ELECTRICIAN	All	BLD		43.02	47.27	1.5	1.5	2.0	2.0	15.12	25.79	6.55	0.71	
ELEVATOR CONSTRUCTOR	All	BLD		62.47	70.28	2.0	2.0	2.0	2.0	16.03	20.21	5.00	0.65	
FENCE ERECTOR	All	ALL		46.89	48.89	1.5	1.5	2.0	2.0	13.68	17.42	0.00	0.75	
GLAZIER	All	BLD		48.75	50.25	1.5	2.0	2.0	2.0	15.19	24.43	0.00	1.70	
HEAT/FROST INSULATOR	All	BLD		52.80	55.97	1.5	1.5	2.0	2.0	14.77	16.76	0.00	0.86	
IRON WORKER	All	ALL		55.81	57.81	2.0	2.0	2.0	2.0	16.05	25.31	0.00	0.49	
LABORER	All	ALL		47.40	48.15	1.5	1.5	2.0	2.0	17.05	15.21	0.00	0.90	
LATHER	All	ALL		52.01	54.01	1.5	1.5	2.0	2.0	11.79	24.76	1.50	0.80	
MACHINIST	All	BLD		53.18	57.18	1.5	1.5	2.0	2.0	9.93	8.95	1.85	1.47	
MARBLE FINISHER	All	ALL		38.00	51.41	1.5	1.5	2.0	2.0	12.10	19.60	0.00	0.60	
MARBLE SETTER	All	BLD		48.96	53.86	1.5	1.5	2.0	2.0	12.10	21.03	0.00	0.78	
MATERIAL TESTER I	All	ALL		37.40		1.5	1.5	2.0	2.0	17.05	15.21	0.00	0.90	
MATERIALS TESTER II	All	ALL		42.40		1.5	1.5	2.0	2.0	17.05	15.21	0.00	0.90	
MILLWRIGHT	All	ALL		52.01	54.01	1.5	1.5	2.0	2.0	11.79	24.76	1.50	0.80	
OPERATING ENGINEER	All	BLD	1	55.10	59.10	2.0	2.0	2.0	2.0	22.15	19.30	2.00	2.55	
OPERATING ENGINEER	All	BLD	2	53.80	59.10	2.0	2.0	2.0	2.0	22.15	19.30	2.00	2.55	
OPERATING ENGINEER	All	BLD	3	51.25	59.10	2.0	2.0	2.0	2.0	22.15	19.30	2.00	2.55	
OPERATING ENGINEER	All	BLD	4	49.50	59.10	2.0	2.0	2.0	2.0	22.15	19.30	2.00	2.55	

OPERATING ENGINEER	All	BLD	5	58.85	59.10	2.0	2.0	2.0	2.0	22.15	19.30	2.00	2.55	
OPERATING ENGINEER	All	BLD	6	56.10	59.10	2.0	2.0	2.0	2.0	22.15	19.30	2.00	2.55	
OPERATING ENGINEER	All	BLD	7	58.10	59.10	2.0	2.0	2.0	2.0	22.15	19.30	2.00	2.55	
OPERATING ENGINEER	All	FLT	1	61.10	61.10	1.5	1.5	2.0	2.0	21.40	18.60	2.00	2.40	
OPERATING ENGINEER	All	FLT	2	59.60	61.10	1.5	1.5	2.0	2.0	21.40	18.60	2.00	2.40	
OPERATING ENGINEER	All	FLT	3	58.10	61.10	1.5	1.5	2.0	2.0	21.40	18.60	2.00	2.40	
OPERATING ENGINEER	All	FLT	4	53.60	61.10	1.5	1.5	2.0	2.0	21.40	18.60	2.00	2.40	
OPERATING ENGINEER	All	FLT	5	62.60	61.10	1.5	1.5	2.0	2.0	21.40	18.60	2.00	2.40	
OPERATING ENGINEER	All	FLT	6	41.00	61.10	1.5	1.5	2.0	2.0	21.40	18.60	2.00	2.40	
OPERATING ENGINEER	All	HWY	1	53.30	57.30	1.5	1.5	2.0	2.0	22.15	19.30	2.00	2.55	
OPERATING ENGINEER	All	HWY	2	52.75	57.30	1.5	1.5	2.0	2.0	22.15	19.30	2.00	2.55	
OPERATING ENGINEER	All	HWY	3	50.70	57.30	1.5	1.5	2.0	2.0	22.15	19.30	2.00	2.55	
OPERATING ENGINEER	All	HWY	4	49.30	57.30	1.5	1.5	2.0	2.0	22.15	19.30	2.00	2.55	
OPERATING ENGINEER	All	HWY	5	48.10	57.30	1.5	1.5	2.0	2.0	22.15	19.30	2.00	2.55	
OPERATING ENGINEER	All	HWY	6	56.30	57.30	1.5	1.5	2.0	2.0	22.15	19.30	2.00	2.55	
OPERATING ENGINEER	All	HWY	7	54.30	57.30	1.5	1.5	2.0	2.0	22.15	19.30	2.00	2.55	
ORNAMENTAL IRON WORKER	All	ALL		53.32	55.82	2.0	2.0	2.0	2.0	14.23	25.00	0.00	1.75	
PAINTER	All	ALL		50.30	56.59	1.5	1.5	1.5	2.0	14.26	14.99	0.00	1.72	
PAINTER - SIGNS	All	BLD		41.55	46.67	1.5	1.5	2.0	2.0	3.04	3.90	0.00	0.00	
PILEDRIVER	All	ALL		52.01	54.01	1.5	1.5	2.0	2.0	11.79	24.76	1.50	0.80	
PIPEFITTER	All	BLD		53.00	56.00	1.5	1.5	2.0	2.0	11.85	22.85	0.00	2.92	
PLASTERER	All	BLD		48.65	51.57	2.0	1.5	2.0	2.0	11.65	28.21	0.00	0.55	
PLUMBER	All	BLD		54.80	58.10	1.5	1.5	2.0	2.0	16.70	17.04	0.00	1.58	
ROOFER	All	BLD		48.00	53.00	1.5	1.5	2.0	2.0	11.83	15.26	0.00	0.99	
SHEETMETAL WORKER	All	BLD		49.10	53.03	1.5	1.5	2.0	2.0	13.53	28.20	0.00	1.00	
SIGN HANGER	All	BLD		34.72	37.50	1.5	1.5	2.0	2.0	6.85	4.50	0.00	0.00	
SPRINKLER FITTER	All	BLD		54.55	57.30	1.5	1.5	2.0	2.0	14.20	18.70	0.00	0.75	
STEEL ERECTOR	All	ALL		55.81	57.81	2.0	2.0	2.0	2.0	16.05	25.31	0.00	0.49	
STONE MASON	All	BLD		49.81	54.79	1.5	1.5	2.0	2.0	12.10	21.56	0.00	1.10	
TERRAZZO FINISHER	All	BLD		45.57	45.57	1.5	1.5	2.0	2.0	12.25	17.14	0.00	1.03	
TERRAZZO MECHANIC	All	BLD		49.41	52.91	1.5	1.5	2.0	2.0	12.25	18.60	0.00	1.07	
TRAFFIC SAFETY WORKER I	All	HWY		39.30	40.90	1.5	1.5	2.0	2.0	9.65	9.10	0.00	0.10	
TRAFFIC SAFETY WORKER II	ALL	HWY		40.30	41.90	1.5	1.5	2.0	2.0	9.65	9.10	0.00	0.10	
TRUCK DRIVER	All	ALL	1	42.09	42.64	1.5	1.5	2.0	2.0	11.80	11.75	0.00	0.15	
TRUCK DRIVER	All	ALL	2	42.24	42.64	1.5	1.5	2.0	2.0	11.80	11.75	0.00	0.15	
TRUCK DRIVER	All	ALL	3	42.44	42.64	1.5	1.5	2.0	2.0	11.80	11.75	0.00	0.15	

TRUCK DRIVER	All	ALL	4	42.64	42.64	1.5	1.5	2.0	2.0	11.80	11.75	0.00	0.15	
TUCKPOINTER	All	BLD		49.53	50.53	1.5	1.5	2.0	2.0	9.04	21.06	0.00	1.07	

Legend
Rg Region
Type Trade Type - All,Highway,Building,Floating,Oil & Chip,Rivers
C Class
Base Base Wage Rate
OT M-F Unless otherwise noted, OT pay is required for any hour greater than 8 worked each day, Mon through Fri. The number listed is the multiple of the base wage.
OT Sa Overtime pay required for every hour worked on Saturdays
OT Su Overtime pay required for every hour worked on Sundays
OT Hol Overtime pay required for every hour worked on Holidays
H/W Health/Welfare benefit
Vac Vacation
Trng Training
Other Ins Employer hourly cost for any other type(s) of insurance provided for benefit of worker.

Explanations LAKE 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.

EXPLANATION OF CLASSES

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

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

CERAMIC TILE FINISHER

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

tile installations including, but not be limited to, all soap compounds, paper products, tapes, and all polyethylene coverings, plywood, masonite, cardboard, and any new type of products that may be used to protect tile installations, Blastrac equipment, and all floor scarifying equipment used in preparing floors to receive tile. The clean up and removal of all waste and materials. All demolition of existing tile floors and walls to be re-tiled.

COMMUNICATION TECHNICIAN

Low voltage construction, installation, maintenance and removal of telecommunication facilities (voice, sound, data and video) including outside plant, telephone, security systems and data inside wire, interconnect, terminal equipment, central offices, PABX, fiber optic cable and equipment, micro waves, V-SAT, bypass, CATV, WAN (wide area network), LAN (local area networks), and ISDN (integrated system digital network), pulling of wire in raceways, but not the installation of raceways.

MARBLE FINISHER

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

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

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

OPERATING ENGINEER - BUILDING

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

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

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

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

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

Class 5. Assistant Craft Foreman.

Class 6. Gradall.

Class 7. Mechanics; Welders.

OPERATING ENGINEERS - HIGHWAY CONSTRUCTION

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

Class 2. Batch Plant; Bituminous Mixer; Boiler and Throttle Valve; Bulldozers; Car Loader Trailing Conveyors; Combination Backhoe Front Endloader Machine (Less than 1 cu. yd. Backhoe Bucket or over or with attachments); Compressor and Throttle Valve; Compressor, Common Receiver (3); Concrete Breaker or Hydro Hammer; Concrete Grinding Machine; Concrete Mixer or Paver 7S Series to and including 27 cu. ft.; Concrete Spreader; Concrete Curing Machine, Burlap Machine, Belting Machine and Sealing Machine; Concrete Wheel Saw; Conveyor Muck Cars (Haglund or Similar Type); Drills, All; Finishing Machine - Concrete; Highlift Shovels or Front Endloader; Hoist - Sewer Dragging Machine; Hydraulic Boom Trucks (All Attachments); Hydro-Blaster; Hydro Excavating (excluding hose work); Laser Screed; All Locomotives, Dinky; Off-Road Hauling Units (including articulating) Non Self-Loading Ejection Dump; Pump Cretes: Squeeze Cretes - Screw Type Pumps, Gypsum Bulker and Pump; Roller, Asphalt; Rotary Snow Plows; Rototiller, Seaman, etc., self-propelled; Self-Propelled Compactor; Spreader - Chip - Stone, etc.; Scraper - Single/Twin Engine/Push and Pull; Scraper - Prime Mover in Tandem (Regardless of Size); Tractors pulling attachments, Sheeps Foot, Disc, Compactor, etc.; Tug Boats.

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

Machine; Winch Trucks with "A" Frame; Work Boats; Tamper-Form-Motor Driven.

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

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

Class 6. Field Mechanics and Field Welders

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

OPERATING ENGINEER - FLOATING

Class 1. Craft Foreman; Master Mechanic; Diver/Wet Tender; Engineer; Engineer (Hydraulic Dredge).

Class 2. Crane/Backhoe Operator; Boat Operator with towing endorsement; Mechanic/Welder; Assistant Engineer (Hydraulic Dredge); Leverman (Hydraulic Dredge); Diver Tender.

Class 3. Deck Equipment Operator, Machineryman, Maintenance of Crane (over 50 ton capacity) or Backhoe (115,000 lbs. or more); Tug/Launch Operator; Loader/Dozer and like equipment on Barge, Breakwater Wall, Slip/Dock, or Scow, Deck Machinery, etc.

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

Class 5. Friction or Lattice Boom Cranes.

Class 6. ROV Pilot, ROV Tender

TRAFFIC SAFETY Worker I

Traffic Safety Worker I - work associated with the delivery, installation, pick-up and servicing of safety devices during periods of roadway construction, including such work as set-up and maintenance of barricades, barrier wall reflectors, drums, cones, delineators, signs, crash attenuators, glare screen and other such items, and the layout and application or removal of conflicting and/or temporary roadway markings utilized to control traffic in construction zones, as well as flagging for these operations.

TRAFFIC SAFETY WORKER II

Work associated with the installation and removal of permanent pavement markings and/or pavement markers including both installations performed by hand and installations performed by truck.

TRUCK DRIVER - BUILDING, HEAVY AND HIGHWAY CONSTRUCTION

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

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

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

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

TERRAZZO FINISHER

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

Other Classifications of Work:

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

LANDSCAPING

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

MATERIAL TESTER & MATERIAL TESTER/INSPECTOR I AND II

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

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

SPECIAL PROVISION FOR INSURANCE

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

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

The Contractor shall name the following entities as additional insured under the Contractor's general liability insurance policy in accordance with Article 107.27:

City of Zion

Christopher B. Burke Engineering, Ltd.

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

RECLAIMED ASPHALT PAVEMENT AND RECLAIMED ASPHALT SHINGLES (D-1)

Effective: November 1, 2012
Revise: November 1, 2019

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 airfields under federal, state, or local agency jurisdiction.

(b) Reclaimed Asphalt Shingles (RAS). Reclaimed asphalt shingles (RAS). RAS is from the processing and grinding of preconsumer or post-consumer shingles. RAS shall be a clean and uniform material with a maximum of 0.5 percent unacceptable material, as defined in Central Bureau of Materials Policy Memorandum, "Reclaimed Asphalt Shingle (RAS) Sources", by weight of RAS. All RAS used shall come from a Central Bureau of Materials 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, 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 mixture composition of the mix design.

(2) Restricted FRAP (B quality) stockpiles shall consist of RAP from Class I, HMA (High ESAL), or HMA (High ESAL). If approved by the Engineer, the aggregate from a maximum 3.0 in. (75 mm) 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, 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 HMA (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 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 2000 tons (1800 metric tons) and one sample per 2000 tons (1800 metric tons) thereafter. A minimum of five tests shall be required for stockpiles less than 4000 tons (3600 metric tons).

(2) Incoming Material. For testing as incoming material, washed extraction samples shall be run at a minimum frequency of one sample per 2000 tons (1800 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 Central Bureau of Materials 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 1000 tons (900 metric tons) and one sample per 1000 tons (900 metric tons) thereafter. A minimum of five samples are required for stockpiles less than

1000 tons (900 metric tons). Once a ≤ 1000 ton (900 metric ton), five-sample/test stockpile has been established it shall be sealed. Additional incoming RAS shall be 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 test 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)	± 6 %
No. 8 (2.36 mm)	± 5 %
No. 30 (600 μm)	± 5 %
No. 200 (75 μm)	± 2.0 %
Asphalt Binder	± 0.3 %
G_{mm}	± 0.03 1/

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 ITP, "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)	± 5 %
No. 16 (1.18 mm)	± 5 %
No. 30 (600 µm)	± 4 %
No. 200 (75 µm)	± 2.5 %
Asphalt Binder Content	± 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:[1/]	FRAP	RAS
1/2 in.	5.0%	
No. 4	5.0%	
No. 8	3.0%	4.0%
No. 30	2.0%	4.0%
No. 200	2.2%	4.0%
Asphalt Binder Content	0.3%	3.0%
G_{mm}	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 homogeneous, 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, HMA (High ESAL), or (Low ESAL) IL-9.5L surface mixtures are designated as containing Class B quality coarse aggregate.

(2) RAP from HMA (Low ESAL) IL-19.0L binder mixture is designated as Class D quality coarse aggregate.

(3) RAP from Class I, HMA (High ESAL) binder mixtures, bituminous base course mixtures, and bituminous base course widening mixtures are designated as containing Class C quality coarse aggregate.

(4) RAP from bituminous stabilized subbase and BAM shoulders are designated as containing Class D quality coarse aggregate.

(b) FRAP. If the Engineer has documentation of the quality of the FRAP aggregate, the Contractor shall use the assigned quality provided by the Engineer.

If the quality is not known, the quality shall be determined as follows. Fractionated RAP stockpiles containing plus #4 (4.75 mm) sieve coarse aggregate shall have a maximum tonnage of 5,000 tons (4,500 metric tons). The Contractor shall obtain a representative sample witnessed by the Engineer. The sample shall be a minimum of 50 lb (25 kg). The sample shall be extracted according to Illinois Modified AASHTO T 164 by a consultant laboratory prequalified by the Department for the specified testing. The consultant laboratory 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 Central Bureau of Materials Aggregate Lab for MicroDeval Testing, according to ITP 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 the 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 percent by weight of the total mix.

When FRAP is used alone or FRAP is used in conjunction with RAS, the percent of virgin asphalt binder replacement (ABR) shall not exceed the amounts listed below for a given N Design.

Maximum Asphalt Binder Replacement (ABR) for FRAP with RAS Combination

HMA Mixtures 1/ 2/ 4/	Maximum % ABR		
Ndesign	Binder 5/	Surface 5/	Polymer Modified 3/
30L	50	40	30
50	40	35	30
70	40	30	30
90	40	30	30
SMA			30
IL-4.75			40

1/ For Low ESAL HMA shoulder and stabilized subbase, the percent asphalt binder replacement shall not exceed 50 % of the total asphalt binder in the mixture.

2/ When the binder replacement exceeds 15 % 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 % 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 %, the required virgin asphalt binder grade shall be PG64-28.

3/ When the ABR for SMA or IL-4.75 is 15 % 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 %.

5/ When the mix has Illinois Flexibility Index Test (I-FIT) requirements, the maximum percent asphalt binder replacement designated on the table may be increased by 5%.

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.

The RAP, FRAP and RAS stone specific gravities (G_{sb}) shall be according to the "Determination of Aggregate Bulk (Dry) Specific Gravity (G_{sb}) of Reclaimed Asphalt Pavement (RAP) and Reclaimed Asphalt Shingles (RAS)" procedure in the Department's Manual of Test Procedures for Materials.

1031.08 HMA Production. HMA production utilizing FRAP and/or RAS shall be as follows.

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 and agglomerated material.

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) FRAP. The coarse aggregate in all FRAP used shall be equal to or less than the nominal maximum size requirement for the HMA mixture being produced.

(b) RAS. RAS shall be incorporated into the HMA mixture either by a separate weight depletion system or by using the RAP weigh belt. Either feed system shall be interlocked with the aggregate feed or weigh system to maintain correct proportions for all rates of production and batch sizes. The portion of RAS shall be controlled accurately to within ± 0.5 percent of the amount of RAS utilized. When using the weight depletion system, flow indicators or sensing devices shall be provided and interlocked with the plant controls such that the mixture production is halted when RAS flow is interrupted.

(c) 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 (0.1 metric 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 Wedge Shoulders, Type B. The use of RAP 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 shall be according to the current Central Bureau of Materials Policy Memorandum, “Reclaimed Asphalt Pavement (RAP) for Aggregate Applications”.

(b) Gradation. The RAP material shall meet the gradation requirements for CA 6 according to Article 1004.01(c), except the requirements for the minus No. 200 (75 µm) sieve shall not apply. The sample for the RAP material shall be air dried to constant weight prior to being tested for gradation.”

HOT-MIX ASPHALT BINDER AND SURFACE COURSE (D-1)

Effective: November 1, 2019
Revised: February 2, 2020

Description. This work shall consist of constructing a hot-mix asphalt (HMA) binder and/or surface course on a prepared base. Work shall be according to Sections 406 and 1030 of the Standard Specifications, except as modified herein.

Materials. Revise Article 1004.03(c) to read:

" (c) Gradation. The coarse aggregate gradations shall be as listed in the following table.

Use	Size/Application	Gradation No.
Class A-1, A-2, & A-3	3/8 in. (10 mm) Seal	CA 16 or CA 20
Class A-1	1/2 in. (13 mm) Seal	CA 15
Class A-2 & A-3	Cover Coat	CA 14
HMA High ESAL	IL-19.0; Stabilized Subbase IL-19.0	CA 11 1/
	SMA 12.5 2/	CA 13 4/, CA 14, or CA 16
	SMA 9.5 2/	CA 13 3/4/ or CA 16 3/
	IL-9.5	CA 16, CM 13 4/
	IL-9.5FG	CA 16
HMA Low ESAL	IL-19.0L	CA 11 1/
	IL-9.5L	CA 16

1/ CA 16 or CA 13 may be blended with the CA 11.

2/ The coarse aggregates used shall be capable of being combined with stone sand, slag sand, or steel slag sand meeting the FA/FM 20 gradation and mineral filler to meet the approved mix design and the mix requirements noted herein.

3/ The specified coarse aggregate gradations may be blended.

4/ CA 13 shall be 100 percent passing the 1/2 in. (12.5mm) sieve."

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

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

HMA Nomenclature. Revise the "High ESAL" portion of the table in Article 1030.01 to read:

"High ESAL	Binder Courses	IL-19.0, IL-9.5, IL-9.5FG, IL-4.75, SMA 12.5, Stabilized Subbase IL-19.0
	Surface Courses	IL-9.5, IL-9.5FG, SMA 12.5, SMA 9.5"

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

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

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

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

Note 2. The asphalt binder shall be an SBS PG 76-28 when the SMA is used on a full-depth asphalt pavement and SBS PG 76-22 when used as an overlay, except where modified herein. The asphalt binder shall be a SBS PG 76-22 for IL-4.75, except where modified herein. The elastic recovery shall be a minimum of 80.

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

Note 4. Warm mix additives or foaming processes shall be selected from the Department's Qualified Producer List, "Technologies for the Production of Warm Mix Asphalt (WMA)"."

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

High ESAL, MIXTURE COMPOSITION (% PASSING) [1/]										
Sieve Size	IL-19.0 mm		SMA 12.5		SMA 9.5		IL-9.5mm		IL-4.75 mm	
	min	max	min	max	min	max	min	max	min	max
1 1/2 in (37.5 mm)										
1 in. (25 mm)		100								
3/4 in. (19 mm)	90	100		100						
1/2 in. (12.5 mm)	75	89	80	100		100		100		100
3/8 in. (9.5 mm)				65	90	100	90	100		100
#4 (4.75 mm)	40	60	20	30	36	50	34	69	90	100
#8 (2.36 mm)	20	42	16	24 [4/]	16	32 [4/]	34 [5/]	52 [2/]	70	90
#16 (1.18 mm)	15	30					10	32	50	65
#30 (600 μm)			12	16	12	18				
#50 (300 μm)	6	15					4	15	15	30
#100 (150 μm)	4	9					3	10	10	18
#200 (75 μm)	3	6	7.0	9.0 [3/]	7.5	9.5 [3/]	4	6	7	9 [3/]
#635 (20 μm)			≤ 3.0		≤ 3.0					
Ratio Dust/Asphalt Binder		1.0		1.5		1.5		1.0		1.0

1/ Based on percent of total aggregate weight.

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

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

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

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

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

"(1) High ESAL Mixtures. The target value for the air voids of the HMA shall be 4.0 percent, for IL-4.75 it shall be 3.5 percent and for Stabilized Subbase it shall be 3.0 percent at the design number of gyrations. The voids in the mineral aggregate (VMA) and voids filled with asphalt binder (VFA) of the HMA design shall be based on the nominal maximum size of the aggregate in the mix and shall conform to the following requirements.

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

1/ Maximum draindown for IL-4.75 shall be 0.3 percent.

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

Revise the table in Article 1030.04(b)(3) to read:

<table>
<tr><td colspan="4">"VOLUMETRIC REQUIREMENTS, SMA 12.5 1/ and SMA 9.5 1/</td></tr>
<tr><td>Ndesign</td><td>Design Air Voids Target %</td><td>Voids in the Mineral Aggregate (VMA), % min.</td><td>Voids Filled with Asphalt (VFA), %</td></tr>
<tr><td rowspan="2">80 4/</td><td rowspan="2">3.5</td><td>17.0 2/</td><td rowspan="2">75 - 83</td></tr>
<tr><td>16.0 3/</td></tr>
</table>

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

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

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

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

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

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

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

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

Quality Control/Quality Assurance (QC/QA). Revise the third paragraph of Article 1030.05(d)(3) to read:

"If the Contractor and Engineer agree the nuclear density test method is not appropriate for the mixture, cores shall be taken at random locations determined according to the QC/QA document "Determination of Random Density Test Site Locations". Core densities shall be determined using the Illinois Modified AASHTO T 166 or T 275 procedure."

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

"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 10 ft (3 m) apart longitudinally along the unconfined pavement edge and centered at the random density test location.

When a longitudinal joint sealant (LJS) is applied, longitudinal joint density testing will not be required on the joint(s) sealed."

Revise the second table in Article 1030.05(d)(4) and its notes to read:

"DENSITY CONTROL LIMITS			
Mixture Composition	Parameter	Individual Test (includes confined edges)	Unconfined Edge Joint Density, minimum
IL-4.75	Ndesign = 50	93.0 – 97.4 % 1/	91.0%
IL-9.5FG	Ndesign = 50 - 90	93.0 – 97.4 %	91.0%
IL-9.5	Ndesign = 90	92.0 – 96.0 %	90.0%
IL-9.5, IL-9.5L,	Ndesign < 90	92.5 – 97.4 %	90.0%
IL-19.0	Ndesign = 90	93.0 – 96.0 %	90.0%
IL-19.0, IL-19.0L	Ndesign < 90	93.0 2/ – 97.4 %	90.0%
SMA	Ndesign = 80	93.5 – 97.4 %	91.0%

1/ Density shall be determined by cores or by correlated, approved thin lift nuclear gauge.

2/ 92.0 % when placed as first lift on an unimproved subgrade."

Equipment. Add the following to Article 1101.01 of the Standard Specifications:

"(h) Oscillatory Roller. The oscillatory roller shall be self-propelled and provide a smooth operation when starting, stopping, or reversing directions. The oscillatory roller shall be able to operate in a mode that will provide tangential impact force with or without vertical impact force by using at least one drum. The oscillatory roller shall be equipped with water tanks and sprinkling devices, or other approved methods, which shall be used to wet the drums to prevent material pickup. The drum(s) amplitude and frequency of the tangential and vertical impact force shall be approximately the same in each direction and meet the following requirements:

(1) The minimum diameter of the drum(s) shall be 42 in. (1070 mm);

(2) The minimum length of the drum(s) shall be 57 in. (1480 mm);

(3) The minimum unit static force on the drum(s) shall be 125 lb/in. (22 N/m); and

(4) The minimum force on the oscillatory drum shall be 18,000 lb (80 kN)."

Construction Requirements.

Add the following to Article 406.03 of the Standard Specifications:

"(j) Oscillatory Roller .....1101.01"

Revise the third paragraph of Article 406.05(a) to read:

"All depressions of 1 in. (25 mm) or more in the surface of the existing pavement shall be filled with binder. At locations where heavy disintegration and deep spalling exists, the area shall be cleaned of all loose and unsound material, tacked, and filled with binder (hand method)."

Revise Article 406.05(c) to read.

"(c) Binder (Hand Method). Binder placed other than with a finishing machine will be designated as binder (hand method) and shall be compacted with a roller to the satisfaction of the Engineer. Hand tamping will be permitted when approved by the Engineer."

Revise the special conditions for mixture IL-4.75 in Article 406.06(b)(2)e. to read:

"e. The mixture shall be overlaid within 5 days of being placed."

Revise Article 406.06(d) to read:

"(d) Lift Thickness. The minimum compacted lift thickness for HMA binder and surface courses shall be as follows.

MINIMUM COMPACTED LIFT THICKNESS	
Mixture Composition	Thickness, in. (mm)
IL-4.75	3/4 (19) - over HMA surfaces [1/] 1 (25) - over PCC surfaces [1/]
IL-9.5FG	1 1/4 (32)
IL-9.5, IL-9.5L	1 1/2 (38)
SMA 9.5	1 3/4 (45)
SMA 12.5	2 (51)
IL-19.0, IL-19.0L	2 1/4 (57)

1/ The maximum compacted lift thickness for mixture IL-4.75 shall be 1 1/4 in. (32 mm)."

Revise Table 1 and Note 3/ of Table 1 in Article 406.07(a) of the Standard Specifications to read:

"TABLE 1 - MINIMUM ROLLER REQUIREMENTS FOR HMA				
	Breakdown Roller (one of the following)	Intermediate Roller	Final Roller (one or more of the following)	Density Requirement
Binder and Surface [1/]	V_D, P [3/], T_B, 3W, O_T, O_B	P [3/], O_T, O_B	V_S, T_B, T_F, O_T	As specified in Articles: 1030.05(d)(3), (d)(4), and (d)(7).
IL-4.75 and SMA [4/ 5/]	T_B, 3W, O_T	- -	T_F, 3W, O_T	
Bridge Decks [2/]	T_B	- -	T_F	As specified in Articles 582.05 and 582.06.

3/ A vibratory roller (V_D) or oscillatory roller (O_T or O_B) may be used in lieu of the pneumatic-tired roller on mixtures containing polymer modified asphalt binder."

Add the following to EQUIPMENT DEFINITION in Article 406.07(a) contained in the Errata of the Supplemental Specifications:

"O_T - Oscillatory roller, tangential impact mode. Maximum speed is 3.0 mph (4.8 km/h) or 264 ft/min (80 m/min).

O_B - Oscillatory roller, tangential and vertical impact mode, operated at a speed to produce not less than 10 vertical impacts/ft (30 impacts/m)."

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

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

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

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

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

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

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

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

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

Illinois Modified AASHTO T 324 Requirements [1/]

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

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

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

For IL 4.75mm Designs (N-50) the maximum rut depth is 9.0mm at 15,000 repetitions.

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

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

"(a) High ESAL, IL-4.75, WMA, and SMA Mixtures. For each contract, a 300 ton (275 metric tons) test strip, except for SMA mixtures it will be 400 ton (363 metric ton), will be required at the beginning of HMA production for each mixture at the beginning of each construction year according to the Manual of Test Procedures for Materials "Hot Mix Asphalt Test Strip Procedures". At the request of the Producer, the Engineer may waive the test strip if previous construction during the current construction year has demonstrated the constructability of the mix using Department test results."

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

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

Method of Measurement:

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

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

Basis of Payment. Replace the second through the fifth paragraphs of Article 406.14 with the following:

"HMA binder and surface courses will be paid for at the contract unit price per ton (metric ton) for MIXTURE FOR CRACKS, JOINTS, AND FLANGEWAYS; HOT-MIX ASPHALT BINDER

COURSE (HAND METHOD), of the Ndesign specified; HOT-MIX ASPHALT BINDER COURSE, of the mixture composition and Ndesign specified; HOT-MIX ASPHALT SURFACE COURSE, of the mixture composition, friction aggregate, and Ndesign specified; POLYMERIZED HOT-MIX ASPHALT BINDER COURSE (HAND METHOD), of the Ndesign specified; POLYMERIZED HOT-MIX ASPHALT BINDER COURSE, of the mixture composition and Ndesign specified; POLYMERIZED HOT-MIX ASPHALT SURFACE COURSE, of the mixture composition, friction aggregate, and Ndesign specified; POLYMERIZED HOT-MIX ASPHALT BINDER COURSE, STONE MATRIX ASPHALT, of the mixture composition and Ndesign specified; POLYMERIZED HOT-MIX ASPHALT SURFACE COURSE, STONE MATRIX ASPHALT, of the mixture composition, friction aggregate, and Ndesign specified."

GROUND TIRE RUBBER (GTR) MODIFIED ASPHALT BINDER (D-1)
Effective: June 26, 2006
Revised: April 1, 2016

Add the following to the end of article 1032.05 of the Standard Specifications:

"(c) Ground Tire Rubber (GTR) Modified Asphalt Binder. A quantity of 10.0 to 14.0 percent GTR (Note 1) shall be blended by dry unit weight with a PG 64-28 to make a GTR 70-28 or a PG 58-28 to make a GTR 64-28. The base PG 64-28 and PG 58-28 asphalt binders shall meet the requirements of Article 1032.05(a). Compatible polymers may be added during production. The GTR modified asphalt binder shall meet the requirements of the following table.

Test	Asphalt Grade GTR 70-28	Asphalt Grade GTR 64-28
Flash Point (C.O.C.), AASHTO T 48, °F (°C), min.	450 (232)	450 (232)
Rotational Viscosity, AASHTO T 316 @ 275 °F (135 °C), Poises, Pa·s, max.	30 (3)	30 (3)
Softening Point, AASHTO T 53, °F (°C), min.	135 (57)	130 (54)
Elastic Recovery, ASTM D 6084, Procedure A (sieve waived) @ 77 °F, (25 °C), aged, ss, 100 mm elongation, 5 cm/min., cut immediately, %, min.	65	65

Note 1. GTR shall be produced from processing automobile and/or light truck tires by the ambient grinding method. GTR shall not exceed 1/16 in. (2 mm) in any dimension and shall contain no free metal particles or other materials. A mineral powder (such as talc) meeting the requirements of AASHTO M 17 may be added, up to a maximum of four percent by weight of GTR to reduce sticking and caking of the GTR particles. When tested in accordance with Illinois modified AASHTO T 27, *a* 50 g sample of the GTR shall conform to the following gradation requirements:

Sieve Size	Percent Passing
No. 16 (1.18 mm)	100
No. 30 (600 μm)	95 ± 5
No. 50 (300 μm)	> 20

Add the following to the end of Note 1. of article 1030.03 of the Standard Specifications:

"A dedicated storage tank for the Ground Tire Rubber (GTR) modified asphalt binder shall be provided. This tank must be capable of providing continuous mechanical mixing throughout by continuous agitation and recirculation of the asphalt binder to provide a uniform mixture. The tank shall be heated and capable of maintaining the temperature

of the asphalt binder at 300 °F to 350 °F (149 °C to 177 °C). The asphalt binder metering systems of dryer drum plants shall be calibrated with the actual GTR modified asphalt binder material with an accuracy of ± 0.40 percent."

Revise 1030.02(c) of the Standard Specifications to read:

"(c) RAP Materials (Note 5) ……..…..1031"

Add the following note to 1030.02 of the Standard Specifications:

Note 5. When using reclaimed asphalt pavement and/or reclaimed asphalt shingles, the maximum asphalt binder replacement percentage shall be according to the most recent special provision for recycled materials.

FRICTION AGGREGATE (D-1)

Effective: January 1, 2011
Revised: November 1, 2019

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	Allowed Alone or in Combination [5/]: Gravel Crushed Gravel Carbonate Crushed Stone Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Steel Slag Crushed Concrete
HMA Low ESAL	Stabilized Subbase or Shoulders	Allowed Alone or in Combination [5/]: Gravel Crushed Gravel Carbonate Crushed Stone Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Steel Slag[1/] Crushed Concrete
HMA High ESAL Low ESAL	Binder IL-19.0 or IL-19.0L SMA Binder	Allowed Alone or in Combination [5/ 6/]: Crushed Gravel Carbonate Crushed Stone[2/] Crystalline Crushed Stone Crushed Sandstone Crushed Slag (ACBF) Crushed Concrete[3/]

<table>
<tr><th>Use</th><th>Mixture</th><th>Aggregates Allowed</th></tr>
<tr><td>HMA
High ESAL
Low ESAL</td><td>C Surface and Binder IL-9.5 or IL-9.5L

SMA
Ndesign 50
Surface</td><td><u>Allowed Alone or in Combination</u> [5/]:
Crushed Gravel
Carbonate Crushed Stone[2/]
Crystalline Crushed Stone
Crushed Sandstone
Crushed Slag (ACBF)
Crushed Steel Slag[4/]
Crushed Concrete[3/]</td></tr>
<tr><td rowspan="5">HMA
High ESAL</td><td rowspan="5">D Surface and Binder IL-9.5

SMA
Ndesign 50
Surface</td><td><u>Allowed Alone or in Combination</u> [5/]:
Crushed Gravel
Carbonate Crushed Stone (other than Limestone)[2/]
Crystalline Crushed Stone
Crushed Sandstone
Crushed Slag (ACBF)
Crushed Steel Slag[4/]
Crushed Concrete[3/]</td></tr>
<tr><td><u>Other Combinations Allowed:</u>
<table><tr><td>Up to...</td><td>With...</td></tr><tr><td>25% Limestone</td><td>Dolomite</td></tr><tr><td>50% Limestone</td><td>Any Mixture D aggregate other than Dolomite</td></tr><tr><td>75% Limestone</td><td>Crushed Slag (ACBF) or Crushed Sandstone</td></tr></table></td></tr>
<tr><td rowspan="3">HMA
High ESAL</td><td rowspan="3">E Surface
IL-9.5

SMA
Ndesign 80
Surface</td><td><u>Allowed Alone or in Combination</u> [5/ 6/]:

Crystalline Crushed Stone
Crushed Sandstone
Crushed Slag (ACBF)
Crushed Steel Slag

No Limestone.</td></tr>
<tr><td><u>Other Combinations Allowed:</u>
<table><tr><td>Up to...</td><td>With...</td></tr></table></td></tr>
</table>

<table>
<tr><td>Use</td><td>Mixture</td><td colspan="2">Aggregates Allowed</td></tr>
<tr><td rowspan="3"></td><td rowspan="3"></td><td>50% Dolomite[2/]</td><td>Any Mixture E aggregate</td></tr>
<tr><td>75% Dolomite[2/]</td><td>Crushed Sandstone, Crushed Slag (ACBF), Crushed Steel Slag, or Crystalline Crushed Stone</td></tr>
<tr><td>75% Crushed Gravel[2/] or Crushed Concrete[3/]</td><td>Crushed Sandstone, Crystalline Crushed Stone, Crushed Slag (ACBF), or Crushed Steel Slag</td></tr>
<tr><td rowspan="4">HMA
High ESAL</td><td rowspan="4">F Surface
IL-9.5

SMA
Ndesign 80
Surface</td><td colspan="2"><u>Allowed Alone or in Combination</u> [5/ 6/]:

Crystalline Crushed Stone
Crushed Sandstone
Crushed Slag (ACBF)
Crushed Steel Slag
No Limestone.</td></tr>
<tr><td colspan="2"><u>Other Combinations Allowed</u>:</td></tr>
<tr><td>Up to...</td><td>With...</td></tr>
<tr><td>50% Crushed Gravel[2/], Crushed Concrete[3/], or Dolomite[2/]</td><td>Crushed Sandstone, Crushed Slag (ACBF), Crushed Steel Slag, or Crystalline Crushed Stone</td></tr>
</table>

1/ Crushed steel slag allowed in shoulder surface only.
2/ Carbonate crushed stone (limestone) and/or crushed gravel 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 combinations of aggregates are used, the blend percent measurements shall be by volume."
6/ Combining different types of aggregate will not be permitted in SMA Ndesign 80."

(D-1) AGGREGATE SURFACE COURSE FOR TEMPORARY ACCESS
Effective: April 1, 2001
Revised: January 2, 2007

Revise Article 402.10 of the Standard Specifications to read:

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

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

(a) Private Entrance. The minimum width shall be 12 ft (3.6 m). The minimum compacted thickness shall be 6 in. (150 mm). The maximum grade shall be eight percent, except as required to match the existing grade.

(b) Commercial Entrance. The minimum width shall be 24 ft (7.2 m). The minimum compacted thickness shall be 9 in. (230 mm). The maximum grade shall be six percent, except as required to match the existing grade.

(c) Road. The minimum width shall be 24 ft (7.2 m). The minimum compacted thickness shall be 9 in. (230 mm). The grade and elevation shall be the same as the removed pavement, except as required to meet the grade of any new pavement constructed.

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

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

Add the following to Article 402.12 of the Standard Specifications:

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

Revise the second paragraph of Article 402.13 of the Standard Specifications to read:

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

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

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

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

(D-1) COARSE AGGREGATE FOR BACKFILL, TRENCH BACKFILL AND BEDDING

Effective: November 1, 2011
Revised: November 1, 2013

This work shall be according to Section 1004.05 of the Standard Specifications except for the following:

Reclaimed Asphalt Pavement (RAP) maybe blended with gravel, crushed gravel, crushed stone crushed concrete, crushed slag, chats, crushed sand stone or wet bottom boiler slag. The RAP used shall be according to the current Bureau of Materials and Physical Research Policy Memorandum, “Reclaimed Asphalt Pavement (RAP) for Aggregate Applications”. The RAP shall be uniformly graded and shall pass the 1.0 in. (25 mm) screen. When RAP is blended with any of the coarse aggregate listed above, the blending shall be done mechanically with calibrated feeders. The feeders shall have an accuracy of $\pm$ 2.0 percent of the actual quantity of material delivered. The final blended product shall not contain more than 40 percent by weight RAP.

The coarse aggregate listed above shall meet CA 6 and CA 10 gradations prior to being blended with the processed and uniformly graded RAP. Gradation deleterious count shall not exceed 10% of total RAP and 5% of other by total weight.

(D-1) DRAINAGE AND INLET PROTECTION UNDER TRAFFIC
Effective: April 1, 2011
Revised: April 2, 2011

Add the following to Article 603.02 of the Standard Specifications:

"(i) Temporary Hot-Mix Asphalt (HMA) Ramp (Note 1) 1030
(j) Temporary Rubber Ramps (Note 2)

Note 1. The HMA shall have maximum aggregate size of 3/8 in. (95 mm).

Note 2. The rubber material shall be according to the following.

Property	Test Method	Requirement
Durometer Hardness, Shore A	ASTM D 2240	75 ±15
Tensile Strength, psi (kPa)	ASTM D 412	300 (2000) min
Elongation, percent	ASTM D 412	90 min
Specific Gravity	ASTM D 792	1.0 - 1.3
Brittleness, °F (°C)	ASTM D 746	-40 (-40)"

Revise Article 603.07 of the Standard Specifications to read:

"**603.07 Protection Under Traffic.** After the casting has been adjusted and the Class PP concrete has been placed, the work shall be protected by a barricade and two lights according to Article 701.17(e)(3)b.

When castings are under traffic before the final surfacing operation has been started, properly sized temporary ramps shall be placed around the drainage and/or utility castings according to the following methods.

(a) Temporary Asphalt Ramps. Temporary hot-mix asphalt ramps shall be placed around the casting, flush with its surface and decreasing to a featheredge in a distance of 2 ft (600 mm) around the entire surface of the casting.

(b) Temporary Rubber Ramps. Temporary rubber ramps shall only be used on roadways with permanent posted speeds of 40 mph or less and when the height of the casting to be protected meets the proper sizing requirements for the rubber ramps as shown below.

Dimension	Requirement
Inside Opening	Outside dimensions of casting + 1 in. (25 mm)
Thickness at inside edge	Height of casting ± 1/4 in. (6 mm)

Thickness at outside edge	1/4 in. (6 mm) max.
Width, measured from inside opening to outside edge	8 1/2 in. (215 mm) min

Placement shall be according to the manufacturer's specifications.

Temporary ramps for castings shall remain in place until surfacing operations are undertaken within the immediate area of the structure. Prior to placing the surface course, the temporary ramp shall be removed. Excess material shall be disposed of according to Article 202.03."

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

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

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

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

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

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

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

CONSTRUCTION AIR QUALITY – DIESEL RETROFIT (BDE)

Effective: June 1, 2010
Revised: November 1, 2014

The reduction of emissions of particulate matter (PM) for off-road equipment shall be accomplished by installing retrofit emission control devices. The term "equipment" refers to diesel fuel powered devices rated at 50 hp and above, to be used on the jobsite in excess of seven calendar days over the course of the construction period on the jobsite (including rental equipment).

Contractor and subcontractor diesel powered off-road equipment assigned to the contract shall be retrofitted using the phased in approach shown below. Equipment that is of a model year older than the year given for that equipment's respective horsepower range shall be retrofitted:

Effective Dates	Horsepower Range	Model Year
June 1, 2010 [1/]	600-749	2002
	750 and up	2006
June 1, 2011 [2/]	100-299	2003
	300-599	2001
	600-749	2002
	750 and up	2006
June 1, 2012 [2/]	50-99	2004
	100-299	2003
	300-599	2001
	600-749	2002
	750 and up	2006

1/ Effective dates apply to Contractor diesel powered off-road equipment assigned to the contract.

2/ Effective dates apply to Contractor and subcontractor diesel powered off-road equipment assigned to the contract.

The retrofit emission control devices shall achieve a minimum PM emission reduction of 50 percent and shall be:

a) Included on the U.S. Environmental Protection Agency (USEPA) *Verified Retrofit Technology List* (http://www.epa.gov/cleandiesel/verification/verif-list.htm), or verified by the California Air Resources Board (CARB) (http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm); or

b) Retrofitted with a non-verified diesel retrofit emission control device if verified retrofit emission control devices are not available for equipment proposed to be used on the project, and if the Contractor has obtained a performance certification from the retrofit

device manufacturer that the emission control device provides a minimum PM emission reduction of 50 percent.

Note: Large cranes (Crawler mounted cranes) which are responsible for critical lift operations are exempt from installing retrofit emission control devices if such devices adversely affect equipment operation.

Diesel powered off-road equipment with engine ratings of 50 hp and above, which are unable to be retrofitted with verified emission control devices or if performance certifications are not available which will achieve a minimum 50 percent PM reduction, may be granted a waiver by the Department if documentation is provided showing good faith efforts were made by the Contractor to retrofit the equipment.

Construction shall not proceed until the Contractor submits a certified list of the diesel powered off-road equipment that will be used, and as necessary, retrofitted with emission control devices. The list(s) shall include (1) the equipment number, type, make, Contractor/rental company name; and (2) the emission control devices make, model, USEPA or CARB verification number, or performance certification from the retrofit device manufacturer. Equipment reported as fitted with emissions control devices shall be made available to the Engineer for visual inspection of the device installation, prior to being used on the jobsite.

The Contractor shall submit an updated list of retrofitted off-road construction equipment as retrofitted equipment changes or comes on to the jobsite. The addition or deletion of any diesel powered equipment shall be included on the updated list.

If any diesel powered off-road equipment is found to be in non-compliance with any portion of this special provision, the Engineer will issue the Contractor a diesel retrofit deficiency deduction.

Any costs associated with retrofitting any diesel powered off-road equipment with emission control devices shall be considered as included in the contract unit prices bid for the various items of work involved and no additional compensation will be allowed. The Contractor's compliance with this notice and any associated regulations shall not be grounds for a claim.

Diesel Retrofit Deficiency Deduction

When the Engineer determines that a diesel retrofit deficiency exists, a daily monetary deduction will be imposed for each calendar day or fraction thereof the deficiency continues to exist. The calendar day(s) will begin when the time period for correction is exceeded and end with the Engineer's written acceptance of the correction. The daily monetary deduction will be $1,000.00 for each deficiency identified.

The deficiency will be based on lack of diesel retrofit emissions control.

If a Contractor accumulates three diesel retrofit deficiency deductions for the same piece of equipment in a contract period, the Contractor will be shutdown until the deficiency is corrected.

Such a shutdown will not be grounds for any extension of the contract time, waiver of penalties, or be grounds for any claim.

80261

WARM MIX ASPHALT (BDE)

Effective: January 1, 2012
Revised: April 1, 2016

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.

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.

"(11) Equipment for Warm Mix Technologies.

a. Foaming. Metering equipment for foamed asphalt shall have an accuracy of ± 2 percent of the actual water metered. The foaming control system shall be electronically interfaced with the asphalt binder meter.

b. Additives. Additives shall be introduced into the plant according to the supplier's recommendations and shall be approved by the Engineer. The system for introducing the WMA additive shall be interlocked with the aggregate feed or weigh system to maintain correct proportions for all rates of production and batch sizes."

Mix Design Verification.

Add the following to Article 1030.04 of the Standard Specifications.

"(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."

Construction Requirements.

Revise the second paragraph of Article 406.06(b)(1) of the Standard Specifications to read:

"The HMA shall be delivered at a temperature of 250 to 350 °F (120 to 175 °C). WMA shall be delivered at a minimum temperature of 215 °F (102 °C)."

Basis of Payment.

This work will be paid at the contract unit price bid for the HMA pay items involved. Anti-strip will not be paid for separately, but shall be considered as included in the cost of the work.

80288

SOIL REPORT

April 5, 2023

TESTING SERVICE CORPORATION

Corporate Office

360 South Main Place, Carol Stream, IL 60188-2404
630.462.2600

Mr. Lee Fell
Christopher B. Burke Engineering, Ltd.
9575 West Higgins Road, Suite 600
Rosemont, IL 60018-4920

RE: L – 95,246
Potentially Impacted Property Evaluation for LPC-663 Form
Zion Water Main Project
Area Bounded by Gilead and Gabriel Avenues and 27th and 29th Streets
Zion, IL

Dear Mr. Fell:

Testing Service Corporation (TSC) has completed a Potentially Impacted Property (PIP) Evaluation, soil sampling, and laboratory analyses for the above captioned project. The general scope of work was presented in TSC's proposal number 70,151 Revised dated 12/27/2022. The General Conditions document which accompanied the proposal also applies to this report. TSC was requested to evaluate site soil conditions for the disposal of construction spoils at a Clean Construction & Demolition Debris (CCDD) or Uncontaminated Soil Fill Operation (USFO) facility.

Uncontaminated soil including uncontaminated soil mixed with clean construction or demolition debris (CCDD) accepted at a CCDD fill operation must be certified to be uncontaminated soil in accordance with Section 22.51(f)(2)(B) of the Environmental Protection Act [415 ILCS 5/22.51(f)(2)(B)]. Uncontaminated soil accepted at an uncontaminated soil fill operation (USFO) must be certified to be uncontaminated soil in accordance with Section 22.51a(d)(2)(B) of the Environmental Protection Act [415 ILCS 5/22.51a(d)(2)(B). These certifications must be made by a licensed professional engineer or geologist (PE/PG) using the Form LPC-663 when the soil is removed from a site which is determined by the PE/PG to be a "Potentially Impacted Property" (PIP) based on review of readily ascertainable property history, environmental databases and site reconnaissance. Uncontaminated soil from a site which is not identified as a PIP by the PE/PG may be certified by either the source site owner or operator using LPC-662 with pH analysis only.

Source Site

The source site ("Site") is along streets within an area bounded by Gilead and Gabriel Avenues and 27th and 29th Streets in a residential area of Zion, IL. The activity that is generating the soil for disposal is water main improvements to the area.

Records Review

In accordance with Illinois Administrative Code 35 Part 1100, on behalf of the Site owner, TSC evaluated the historical uses of the Site to identify potential contamination sources, both from the Site and adjoining properties, which may cause the Site to be considered a PIP.

TSC researched the history of the property by reviewing historical topographic maps dating back to 1908 and aerial photographs dating back to 1939. Based on this information, the Site and surrounding area had been a residential subdivision developing since before that time, and completed after 1961. One commercial building was constructed on the northwest after 1953, as were apartments to the north of that structure. A Commercial area was constructed to the northeast also at that time. The rest of the northwest side was developed commercial after 1961. One commercial building on the south end of the west area, on the west side of the Site, was demolished after 2011. The Site and surrounding properties then remain as described to the present.

TSC evaluated current Federal and State environmental agency records for the Site and vicinity by obtaining information from an EDR First Report from Environmental Data Resources, Inc. (EDR). The EDR First Report identifies listings on reviewed environmental databases within one quarter mile of the Site address and is utilized in identifying potential contamination sources, both at the Site and from adjoining properties, which may cause the Site to be considered a PIP.

The EDR First Report information does not identify the Site itself on the reviewed environmental databases.

The EDR First Report information does not identify any adjoining or nearby properties to the Site on the various reviewed environmental databases.

Doctors Offices of Zion, adjoining on the northeast at 1911 27th Street, is on the RCRA NonGen/NLR database for being a current non-generator, former small quantity generator, of D002 corrosive, and, F003 and F005 solvent wastes with no violations reported.

Justen Rental Apartments, adjoining on the northwest at 2703 Galilee Avenue, is on Leaking Underground Storage Tank (LUST), IL EPA ID 0972005057, for having a release from an other petroleum Underground Storage Tank (UST) without a No Further Remediation Letter. It is also on UST for having removed two 550 gallon heating oil tanks on August 26, 1994.

Mundercolor, formerly adjoining to the west at 2771 Galilee Avenue, is on Site Remediation Program (SRP). It is also on RCRA NonGen/NLR database for being a current non-generator, former small quantity generator, of D001 ignitable waste with no violations found.

All other properties that appeared in the EDR First Report were found by the Site reconnaissance and historical review to be outside a reasonably likely zone of influence to the Site.

The EDR First Report Orphan Summary did not identify any properties.

Site Reconnaissance

On February 14, 2023, TSC conducted a reconnaissance of the Site and adjoining properties for the purpose of identifying indications of the use or disposal of hazardous substances or petroleum products. The Site is streets in a residential area consistent with information reviewed on topographic maps, aerial photographs, and the EDR environmental database report. No indications of staining, unnaturally stressed vegetation or areas conspicuously absent of vegetation were noted at the Site. No evidence of aboveground storage tanks or of vent or fill pipes suggesting the presence of underground storage tanks were identified at the Site areas to be excavated. No indication of petroleum sheen was identified. No indications of solid waste or drum storage were noted at the Site. No suspect PCB containing equipment or hazardous waste generation was identified on Site. No evidence of the use or release of hazardous substances or petroleum products was identified at the Site in or affecting areas that are to be excavated. No additional sources of potential impact from the Site or adjacent properties were identified. The current status of the surrounding properties is also consistent with the information reviewed and none of the above conditions were noted at their locations within a zone of influence to the Site. No additional sources of potential impact from the Site or adjacent properties were identified.

Based on adjoining properties to the Site appearing on the environmental database search results, the Site was identified as a Potentially Impacted Property. The collection of soil samples and analysis were performed to evaluate the soil for common contaminants of concern.

Soil Sampling & Analytical Testing

On February 14-15, 2023, TSC, in conjunction with a geotechnical investigation, performed ten core borings with soil samples (B-1 through B-10) within the described project area. The boring locations are indicated on the attached Boring Location Plan.

Soil at the Site beneath the pavement consists generally of silty clay with little sand and gravel. The soil samples were screened using a Mini-RAE 3000 photo-ionization detector (PID), which did not detect any readings exceeding background conditions. No visual or odorous signs of impact were noted in the samples. Samples B-3/S-5, B-7/S-5, and B-9/S-4 from 4-6 feet below ground surface (bgs), and, B-4/S-4 and B-8/S-3 from 1-2.5 feet bgs, were selected as being representative of the soil to be removed from the Site. The samples were placed in laboratory supplied jars and 5035 preserved vials. The samples were then transported to the analytical laboratory in a cooler on ice using standard chain of custody procedures. TSC's Professional Geologist, determined that analysis for Volatile Organic Compounds (VOCs), Polynuclear Aromatic hydrocarbons (PNAs), total RCRA metals, and pH, are appropriate indicator parameters of potential impact to the Site.

The analytical results are presented in the First Environmental Laboratories, Inc. analytical report dated February 23, 2023. The analytical report indicates that no VOCs or PNAs were detected in the samples at the laboratory reporting limits. Several of the total RCRA metals were detected in the samples at typical background levels, except for elevated chromium in B-4/S-4 and B-8/S-3. The pH values of 8.51 for sample B-3/S-5, 8.09 for B-4/S-4, 8.26 for B-7/S-5, 7.73 for B-8/S-3, and 7.93 for B-9/S-4 are within the required range of 6.25-9.0 units.

The analytical results were compared to the Maximum Allowable Concentrations of Chemical Constituents (MACs) listed in 35 IAC 1100 Subpart F. The analytical results obtained from the soil samples tested indicate that all analyzed parameters meet their respective MACs for disposal at a CCDD/USFO facility, except for chromium in B-4/S-4 and B-8/S-3. Chromium was detected in B-4/S-4 at 29.0 mg/kg and in B-8/S-3 at 27.5 mg/kg which both exceed the MAC for chromium of 21.0 mg/kg.

In accordance with 35IAC1100.610(b)(3)(C) as an alternative to the MAC value, compliance verification may be determined by comparing soil sample extraction results by SPLP for chromium to the respective TACO Class I Soil Component of the Groundwater Ingestion Exposure Route Objective in 35IAC742 Appendix B, Table A. TSC requested First Environmental Laboratories, Inc. to perform SPLP chromium analysis on samples B-4/S-4 and B-8/S-3. The analytical results are presented in the First Environmental Laboratories, Inc. analytical report dated March 2, 2023.

The SPLP chromium concentrations of 0.080 mg/L for B-4/S-4 and 0.052 mg/L for B-8/S-3 do meet the TACO Class I Soil Component of the Groundwater Ingestion Exposure Route Objective of 0.1 mg/L for chromium, therefore, B-4/S-4 and B-8/S-3 do meet the MAC for chromium after SPLP analysis.

The IEPA LPC-663 Form, Uncontaminated Soil Certification, signed by a Licensed Professional Geologist, along with the analytical report and chain of custody, has been completed for disposal of the soil from the source site, the area bounded by Gilead and Gabriel Avenues and 27th and 29th Streets in Zion, IL, as shown on last page of the attached EDR First Report.

TSC recommends the full report be forwarded to the CCDD/USFO facility selected for disposal. It is noted that the CCDD/USFO facility will make the determination on whether or not they will choose to accept the soil and may request additional analytical data. Additionally, the CCDD/USFO will screen each load of soil with a PID, which will determine the final acceptance of individual loads, regardless of the analytical results.

We appreciate the opportunity to be of service to you. Please contact us with any questions.

Respectfully,

TESTING SERVICE CORPORATION

Brian K. Walker, P.G. #196.000772
Environmental Department Manager

Prepared by:

Aaron J. Ulrey, P.G. #196.001390
Project Geologist

BKW:AJU:ljm

Enc: LPC-663 Form
Boring Location Plan
Analytical Report and Chain of Custody
EDR First Report

Illinois Environmental Protection Agency

1021 North Grand Avenue East • P.O. Box 19276 • Springfield • Illinois • 62794-9276 • (217) 782-3397

Uncontaminated Soil Certification by Licensed Professional Engineer or Licensed Professional Geologist for Use of Uncontaminated Soil as Fill in a CCDD or Uncontaminated Soil Fill Operation LPC-663

Revised in accordance with 35 Ill. Adm. Code 1100, as amended by PCB R2012-009 (eff. Aug. 27, 2012)

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

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

I. Source Location Information

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

Project Name: Zion Water Main Project 2023 Office Phone Number, if available: 847-823-0500

Physical Site Location (address, including number and street):
Area bounded by Gilead and Gabriel Avenues and 27th and 29th Streets

City: Zion State: IL Zip Code: 60099

County: Lake Township: Zion

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

Latitude: 42.44441 (Decimal Degrees) Longitude: - 87.84137 (-Decimal Degrees)

Identify how the lat/long data were determined:

○ GPS ○ Map Interpolation ○ Photo Interpolation ○ Survey ⊘ Other

EDR First Report

IEPA Site Number(s), if assigned: BOL: None BOW: None BOA: None

Approximate Start Date (mm/dd/yyyy): _____ Approximate End Date (mm/dd/yyyy): _____

Estimated Volume of debris (cu. Yd.): _____

II. Owner/Operator Information for Source Site

Site Owner

Name: _____

Street Address: _____

PO Box: _____

City: _____ State: _____

Zip Code: _____ Phone: _____

Contact: _____

Email, if available: _____

Site Operator

Name: _____

Street Address: _____

PO Box: _____

City: _____ State: _____

Zip Code: _____ Phone: _____

Contact: _____

Email, if available: _____

This Agency is authorized to require this information under Section 4 and Title X of the Environmental Protection Act (415 ILCS 5/4, 5/39). Failure to disclose this information may result in: a civil penalty of not to exceed $50,000 for the violation and an additional civil penalty of not to exceed $10,000 for each day during which the violation continues (415 ILCS 5/42). This form has been approved by the Forms Management Center.

L-95246

Project Name: Zion Water Main Project 2023 Latitude: 42.44441 Longitude: - 87.84137

Uncontaminated Soil Certification

III. Basis for Certification and Attachments

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

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

See attached report. Topographic maps reviewed to 1908, aerials to 1939. Source site subdivision since before that time, completed after 1961. Commercial areas on northwest and to northeast after 1953. EDR does identify 3 adjoining properties on environmental database search. 10 soil borings performed.

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

Samples PID screened ID'd no volatile organics. Samples B3/S5, B4/S4, B7/S5, B8/S3, B9/S4 representing Site conditions, collected for analysis of VOCs, PNAs, total RCRA metals, & pH. Analytical results verify the sampled soil meets MACs, after chromium SPLP. pH range of 7.73 to 8.51 also between 6.25 and 9.0, therefore, soil in those locations uncontaminated.

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

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

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

Company Name:	Testing Service Corporation
Street Address:	360 South Main Place
City:	Carol Stream State: IL Zip Code: 60188
Phone:	630-462-2600

Aaron J. Ulrey
Printed Name:

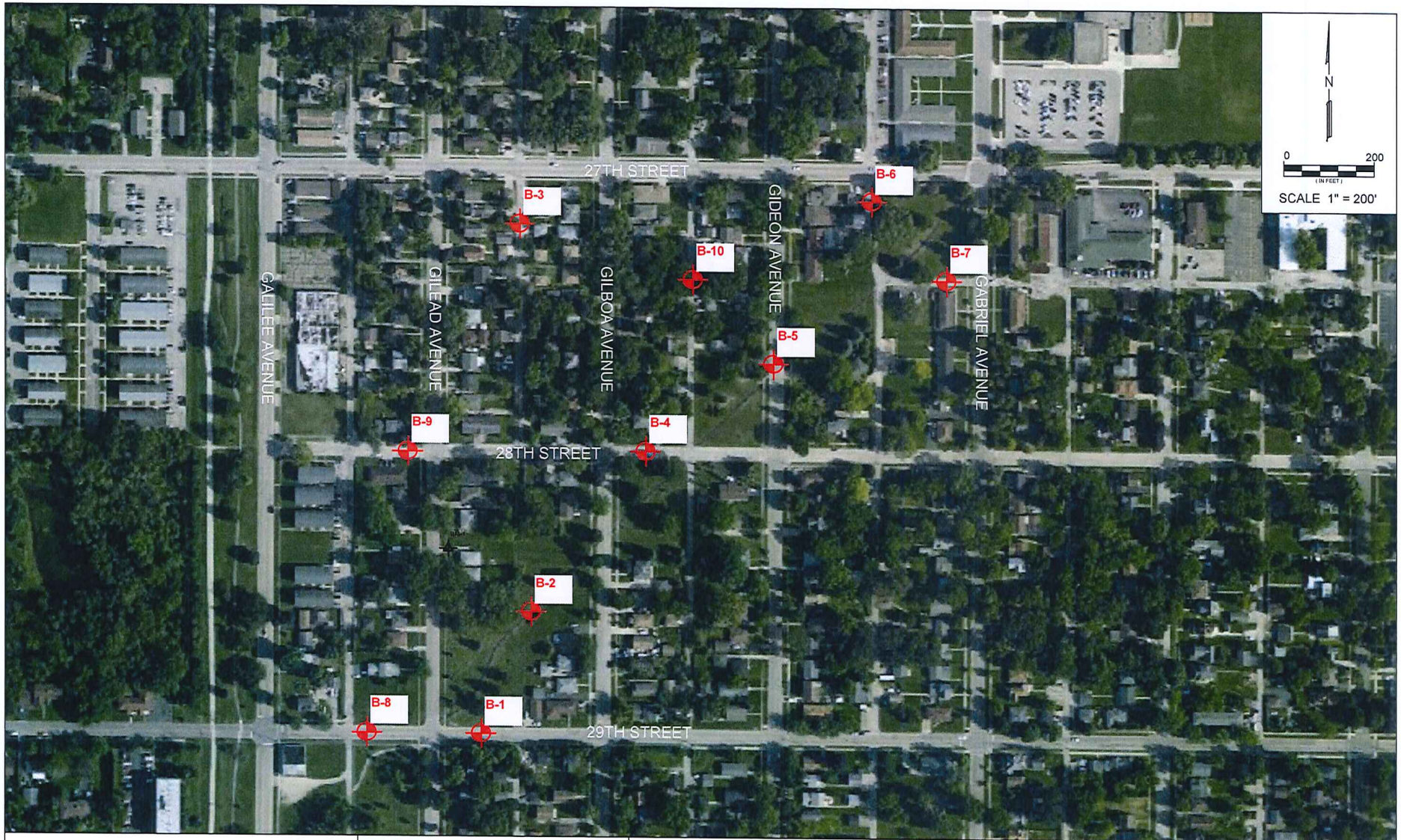
Licensed Professional Engineer or
Licensed Professional Geologist Signature:

4-5-2023
Date:

AARON JON ULREY
196.001390
REGISTERED PROFESSIONAL GEOLOGIST
STATE OF ILLINOIS

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

L-95,246



NOTE:
GROUND SURFACE ELEVATIONS AT THE BORINGS WERE ACQUIRED BY TSC USING A TRIMBLE R8S GNSS RECEIVER, BEING ROUNDED TO THE NEAREST 0.5 FOOT.

LEGEND

SOIL BORING LOCATION

BORING LOCATION PLAN
ZION WATER MAIN
GILEAD AVENUE TO GABRIEL AVENUE
BETWEEN 27TH AND 29TH STREET
ZION, ILLINOIS

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

DRAWN BY:	FFE
CHECKED BY:	TRP
JOB NO.:	L - 95,246
DATE:	03-24-23

PAGE NO.
1 OF 1

Local Office
March 23, 2023

TESTING SERVICE CORPORATION

Local Office:

457 E. Gundersen Drive, Carol Stream, IL 60188-2492
630.462.2600 ● Fax 630.653.2988

Corporate Office:

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

Mr. Lee Fell
Christopher B. Burke Engineering, Ltd.
9575 West Higgins Road Suite 600
Rosemont, IL 60018

RE: L-95,245
Zion Water Main
Galilee to Gabriel Between 27th and 29th St
Zion, Illinois

Dear Mr. Fell:

This report presents the results of a soils exploration performed for proposed water main and roadway reconstruction in Villa Park, Illinois. These geotechnical engineering services have been provided in accordance with TSC Proposal No. 68,373 dated February 1, 2022 and the attached General Conditions, incorporated herein by reference.

The project site is generally located between Gabriel and Galilee Avenues to the east and west and between 27th and 29th Streets to the north and south, respectively in Zion, Illinois. Current plans call for new water mains along various alleyways, Gideon Avenue, 28th and 29th Streets as well as along a municipality right-of-way. The new water main will likely be installed roughly 6 feet below existing grade. It is assumed the pipe will likely be installed by open-cut methods, with directional drilling possible. Roadway rehabilitation/reconstruction is planned along the various alleyways and roadways with water main improvements.

Field Investigation and Laboratory Testing

Ten (10) soil borings were performed as part of this soils exploration with the pavement being first cored at all the boring locations. The boring locations were selected and laid out in the field by TSC. Reference is made to the enclosed Boring Location Plan for the drilling layout, ground surface elevations at the borings are also shown.

The pavement cores were obtained using a 4" diameter core barrel with an impregnated diamond matrix cutting bit. Granular base course materials were then hand-augered and sampled to determine their thickness and composition. The pavement core samples were examined by a materials technician in the laboratory. These results are summarized in the Appendix under "Core Results".

The borings were drilled using a GeoProbe drill rig (no N-values were obtained) and extended to 8 feet below existing grade. Macro-core push samples (1.5-inch diameter) were taken with representative test specimens obtained at approximate 2-foot intervals. Water level readings were taken during and following completion of drilling operations, with the boreholes then immediately backfilled for safety reasons and those in pavement areas also patched at the surface.

Soil samples were examined in the laboratory to verify field descriptions and to classify them in accordance with the Unified Soil Classification System. Laboratory testing included water content determinations for all cohesive and intermediate (silt or loamy) soil types. An estimate of unconfined

compressive strength was obtained for all cohesive soils using a calibrated pocket penetrometer (Qp). Dry unit weight tests were also run on specimens of cohesive fill.

Reference is made to the boring logs included with this report indicating subsurface stratigraphy and soil descriptions, results of field and laboratory tests, as well as water level observations. Definitions of descriptive terminology are also included. While strata changes are shown as a definite line on the boring logs, the actual transition between soil layers is likely to be more gradual. Fluctuations in the groundwater table may also occur due to variations in precipitation (short-term and seasonal) as well as rises or drops in pond, creek or other nearby surface water features, i.e. groundwater levels at a future date may be higher or lower than those recorded at the time of drilling.

Discussion of Test Data

Pavement Core

Pavement cores were first taken at Borings 1 - 10 which were drilled along various alleyways, Gideon Avenue, 28th and 29th Streets as well as along a municipality right-of-way. The results of the pavement cores are summarized in the following table, i.e., pavement and base course total thicknesses are given.

SUMMARY OF CORE RESULTS

Boring No.	Bituminous Concrete Thickness* (in)	Base Course Thickness** (in)
1	9¾	6
2	3	7
3	1½	8
4	3¾	12
5	8½	##
6	2	6
7	2¼	8
8	10½	12
9	3	18
10	±3" #	7

* Total asphalt thickness rounded to the nearest ¼ inch.
** Base course thickness rounded to the nearest 1 inch.
# Approximate pavement thickness due to the deteriorated condition of bituminous courses.
No granular base course materials encountered.

The pavement cores revealed the presence of 1½ to 10½ inches of bituminous concrete. The asphalt pavement was typically found overlying 6 to 18 inches of granular base course materials while being apparently absent at B-5. Examination of the core samples at Borings 3, 6 and 7 (i.e. in alleyways) revealed that the asphalt section was comprised of a single bituminous surface course, with 2 bituminous surface courses at B-2 (multi-use path). The remaining core samples taken along the various roadway revealed 1 to 2 surface courses and 1 to 3 binder courses. It was noted that the asphalt layers were occasionally not bonded together at Borings 1, 2, 8 and 10. It was also noted that the surface and/or binder courses were in a partially deteriorated to deteriorated condition at Borings 2, 3 and 10.

Soil Borings

Silty clay fill materials were found underlying the pavement section in Borings 2, 3, 7, 9 and 10 (5 total), extending 3 to 8 feet below existing grade. Samples of the cohesive fill exhibited dry unit weights typically ranging from 100 to 118 pounds per cubic foot (pcf), occasionally lower in Borings 9 and 10. Water contents generally varied from 14 to 25 percent. They also had pocket penetrometer readings (estimate of unconfined compressive strength) of 0.5 to 2.5 tons per square foot (tsf). Sand fill materials were found below the pavement section in B-6, extended about 2½ feet deep.

Buried topsoil materials below the pavement section and/or existing fill materials in Borings 2 and 8 extending about 4 feet below the top of pavement. The clayey topsoil materials had water contents of 36 to 45 percent.

Medium stiff to stiff native silty clay soils of apparent medium to high plasticity were found underlying the pavement section, fill materials and/or a stiffer clay crust in Borings 2, 4, 6 and 7. These CL/CH type materials (Unified classification) extended 4 to 8 feet below existing grade. They exhibited unconfined compressive strengths ranging from 0.5 to 1.5 tons per square foot (tsf) at water contents varying from 26 to 30 percent.

Medium stiff to hard silty clay soils of low to medium plasticity (CL by Unified classification) were otherwise found in Borings 1, 4 - 8 and 10 (7 total), extending to completion depths in most cases. These deeper cohesive materials had unconfined compressive strengths typically varying from 1.0 to 4.5 tsf at water contents varying from 15 to 25 percent. Sand, sand/gravel and clayey silt materials were found interbedded within the cohesive soil mass in Borings 4 and 5.

Most of the borings were “dry” both during and upon completion of drilling operations. Free water was initially encountered at a depth of 4 feet below existing grade in B-5 and rose to within 2 feet of the surface upon completion of drilling operations.

Analysis and Recommendations

Water Main Construction

Borings 1 - 10 were drilled for the new water main along various alleyways, Gideon Avenue, 28th and 29th Streets as well as along a municipality right-of-way. The pipe will likely be installed roughly 6 feet

below existing grade by open-cut methods, with directional drilling possible. Stiff to hard native silty clay soils were encountered at the water main bearing depth in Borings 1, 2, 5 - 8 and 10 (7 total). The cohesive materials are considered suitable (or marginally suitable) for support of the new water main and trench backfill. Marginal bearing soils (Qu $\leq$ 1.0 tsf and/or W > 25%) were present in Borings 2 and 6. Existing clay fill materials were encountered at the approximate bearing depth in Borings 3 and 9, also considered marginally suitable for support of the new water main. If the trench bottom becomes unstable, 12 to 18 inches of CA-1 material (3-inch rock) may be placed to provide a satisfactory base for construction, with a 4 to 6-inch cap of FA-2 sand placed over the 3" rock for direct support of the water main.

A clayey silt deposit was encountered at the approximate water main bearing level in B-4. These intermediate materials are also considered suitable for water main pipe support. While these materials are considered stable in a confined state, they may appear soft and spongy if exposed by an open-cut excavation and may slough into the excavation making a larger than expected excavation. If the trench bottom becomes unstable, 12 to 18 inches of CA-1 material (3-inch rock) may be placed to provide a satisfactory base for construction, with a 4 to 6 inch cap of FA-2 sand placed over the 3" rock for direct support of the water main. If directional drilling is performed in the area of B-4 as well as B-5, drilling mud may be required to help stabilize the borehole during directional drilling, to possibly be needed elsewhere along the water main. It is recommended that a horizontal directional drilling contractor be contacted to discuss their ability to install the proposed water main in these materials.

Most of the borings were "dry" both during and following completion of drilling operations and the predominantly cohesive/impermeable nature (i.e. low permeability) of the subsurface soils encountered across the site, serious groundwater problems are not anticipated. However, the accumulation of run-off water or seepage at the base of excavations may still occur during foundation construction. The Contractor should therefore be prepared to implement dewatering procedures, as a minimum to include pumping from strategically placed sumps.

More serious water problems can be expected at B-5, where wet granular materials were found above the water main bearing level. Granular soil types encountered under hydrostatic pressure at the time of construction can lead to a running condition, where the materials in the bottom and the side walls will rapidly slough and "flow" into the excavation, causing a larger than normal excavation. If allowed to occur, running soils may lead to instability of the excavation side slopes, loss of ground and settlement in surrounding areas. It should be noted that this condition represents a groundwater and not an actual soils problem. It is also a temporary condition that exists as long as the excavation is open, towards which the groundwater contained in the permeable soil layers will flow. It is recommended that the Contractor use an excavation support system in order to prevent the loss of ground and settlement in surrounding areas. If directional drilling is performed, drilling mud may be required to help stabilize the borehole during directional drilling, to possibly be needed elsewhere along the water main.

Lateral Earth Pressures

Lateral earth pressures for permanent underground structures will be dependent on the type of backfill used and the groundwater levels. Equivalent fluid pressures are given for cohesive and granular

backfills assuming at-rest (Ko) and passive (Kp) earth pressures. The values shown represent the increase in lateral pressure over a 1.0 foot distance measured in pounds per square foot (psf/ft).

BACKFILL TYPE	EQUIVALENT FLUID PRESSURE (PSF/FT)	
	ABOVE WATER TABLE	BELOW WATER TABLE
	AT-REST STATE	
Granular	50	90
Cohesive	70	100
	PASSIVE STATE	
Granular	400	250
Cohesive	320	220

Pavement Rehabilitation

Pavement cores were taken at Borings 1 - 10 to guide roadway rehabilitation/reconstruction along various alleyways, Gideon Avenue, 28th and 29th Streets where water main improvements are planned. The pavement cores taken at Borings 1, 5 and 8 revealed 8½ to 10½ inches of asphalt pavement, which is considered suitable for milling and overlaying. As long as some reflective cracking can be tolerated 29th Street and Gideon Avenue may be milled and resurfaced. It should be understood that this option is a temporary fix with a limited life span and will not have the same results as total pavement reconstruction. An 4.75mm bituminous Sand Mix layer may be applied first in order to help reduce/delay reflective cracking which may occur. It is recommended that a tack coat also be used to create a strong adhesive bond without slippage.

In areas where a partial replacement is performed, it will be necessary to remove any distressed pavement sections and/or any unbonded pavement sections. The evaluation of the failed areas should be performed after the milling work has been completed. At this time additional failures may become evident. In the event deficient pavement conditions are noted, it will be necessary to remove the distressed pavement sections. Subgrade support for improvements will be related to the thickness of the existing granular base course materials as well as the condition of the subgrade soils.

The pavement cores taken at Borings 2 - 4, 6, 7, 9 and 10 (7 total) revealed 1½ to 3¾ inches of asphalt pavement, considered deficient for milling and resurfacing (i.e. too thin to save). If the various alley ways and 28th Street are milled it is possible that the exposed pavement sections may fall apart with the use of typical heavy milling equipment and associated truck traffic. During wet times of the year, milling and overlaying may be more problematic due to a wet base course and subgrade, with the trucks and heavy milling equipment aggravating this condition.

Base Course Assessment

If the bituminous concrete is entirely removed, the exposed granular base course may remain in place provided that it passes a proof-roll. In our experience the granular base course materials often fail to pass a proof-roll in areas where the base course layer is less than 10 inches thick and/or in time of wetter weather. Therefore, the granular section in the area of Borings 1 - 3, 5 - 7 and 10 (7 total) may not pass a proof-roll, as well as elsewhere along the various alleyways and roadways.

The proof-roll should be performed using a heavily loaded 6-wheel dump truck or equivalent piece of construction equipment. Areas where the rutting depths of the granular base course are in the range of ½ inch should be marked out for partial or full depth patching with a bituminous concrete binder course mixture. If rutting depths are greater than 1 inch, the remediation of the underlying granular base course (and/or subgrade) by removal and replacement methods with granular materials should be scheduled. Undercut areas may be backfilled with crushed concrete, limestone or gravel that meet IDOT gradation CA-1, CA-3 or CA-7.

Total Reconstruction

If the existing subgrade is exposed as part of pavement reconstruction it should be anticipated that the exposed clay soils (native and/or fill) found below the existing pavement section in most of the borings will likely have to be reduced in moisture content and recompacted in order to provide a stable subgrade prior to paving. Compaction to 95 percent of Modified Proctor density is recommended to create a stable base for proof-rolling and paving. If paving construction is performed when drying of surficial soils cannot be accomplished, removal of unstable subgrade and replacement with approximately 1 to 2 feet of granular materials may be required.

A nominal Illinois Bearing Ratio (IBR) value of 3.0 is recommended for the design of new asphalt pavements. The use of this value assumes that any soft or unstable areas will be remediated, i.e. subgrade stabilized until passing a proof-roll.

It is recommended that any new base course materials conform to IDOT gradation specification CA-6 (well-graded crushed stone or sand and gravel mixture). These materials should be compacted to 95 percent Modified Proctor density or 100 percent of the Standard Proctor (ASTM D 698) maximum density value. Bituminous materials should conform to an approved current IDOT Superpave mix design (N50 typical for light-duty pavements and N50 or N70 for heavy-duty), as well as Standard Specifications for Road and Bridge Construction, Sections 406 and 1032. They should be compacted to between 93 and 97 percent of their theoretical maximum density, as determined by the supplier.

Closure

The analysis and recommendations submitted in this report are based upon the data obtained from the ten (10) soil borings and ten (10) pavement cores performed at the locations indicated on the Boring Location Plan. This report does not reflect any variations which may occur between these borings or elsewhere on the site, the nature and extent of which may not become evident until during the course

of construction. If variations are then identified, recommendations contained in this report should be re-evaluated after performing on-site observations.

Please call if there are any questions in regard to this matter or if we may be of further service.

Respectfully submitted,

TESTING SERVICE CORPORATION

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

TRP:RRK:trp
Enc.

Rodrigo R. Knutson
Graduate Engineer

TESTING SERVICE CORPORATION

GENERAL CONDITIONS

Geotechnical and Construction Services

1. PARTIES AND SCOPE OF WORK: If Client is ordering the services on behalf of another, Client represents and warrants that Client is the duly authorized agent of said party for the purpose of ordering and directing said services, and in such case the term "Client" shall also include the principal for whom the services are being performed. Prices quoted and charged by TSC for its services are predicated on the conditions and the allocations of risks and obligations expressed in these General Conditions. Unless otherwise stated in writing, Client assumes sole responsibility for determining whether the quantity and the nature of the services ordered by Client are adequate and sufficient for Client's intended purpose. Unless otherwise expressly assumed in writing, TSC's services are provided exclusively for client. TSC shall have no duty or obligation other than those duties and obligations expressly set forth in this Agreement. TSC shall have no duty to any third party. Client shall communicate these General Conditions to each and every party to whom the Client transmits any report prepared by TSC. Ordering services from TSC shall constitute acceptance of TSC's proposal and these General Conditions.

2. SCHEDULING OF SERVICES: The services set forth in this Agreement will be accomplished in a timely and workmanlike manner. If TSC is required to delay any part of its services to accommodate the requests or requirements of Client, regulatory agencies, or third parties, or due to any cause beyond its reasonable control, Client agrees to pay such additional charges, if any, as may be applicable.

3. ACCESS TO SITE: TSC shall take reasonable measures and precautions to minimize damage to the site and any improvements located thereon as a result of its services or the use of its equipment; however, TSC has not included in its fee the cost of restoration of damage which may occur. If Client desires or requires TSC to restore the site to its former condition, TSC will, upon written request, perform such additional work as is necessary to do so and Client agrees to pay to TSC the cost thereof plus TSC's normal markup for overhead and profit.

4. CLIENT'S DUTY TO NOTIFY ENGINEER: Client represents and warrants that Client has advised TSC of any known or suspected hazardous materials, utility lines and underground structures at any site at which TSC is to perform services under this Agreement. Unless otherwise agreed in writing, TSC's responsibility with respect to underground utility locations is to contact the Illinois Joint Utility Locating Information for Excavators for the location of public, but not private, utilities.

5. DISCOVERY OF POLLUTANTS: TSC's services shall not include investigation for hazardous materials as defined by the Resource Conservation Recovery Act, 42 U.S.C.§ 6901, et, seq., as amended ("RCRA") or by any state or Federal statute or regulation. In the event that hazardous materials are discovered and identified by TSC, TSC's sole duty shall be to notify Client.

6. MONITORING: If this Agreement includes testing construction materials or observing any aspect of construction of improvements, Client's construction personnel will verify that the pad is properly located and sized to meet Client's projected building loads. Client shall cause all tests and inspections of the site, materials and work to be timely and properly performed in accordance with the plans, specifications, contract documents, and TSC's recommendations. No claims for loss, damage or injury shall be brought against TSC unless all tests and inspections have been so performed and unless TSC's recommendations have been followed.

TSC's services shall not include determining or implementing the means, methods, techniques or procedures of work done by the contractor(s) being monitored or whose work is being tested. TSC's services shall not include the authority to accept or reject work or to in any manner supervise the work of any contractor. TSC's services or failure to perform same shall not in any way operate or excuse any contractor from the performance of its work in accordance with its contract. "Contractor" as used herein shall include subcontractors, suppliers, architects, engineers and construction managers.

Information obtained from borings, observations and analyses of sample materials shall be reported in formats considered appropriate by TSC unless directed otherwise by Client. Such information is considered evidence, but any inference or conclusion based thereon is, necessarily, an opinion also based on engineering judgment and shall not be construed as a representation of fact. Subsurface conditions may not be uniform throughout an entire site and ground water levels may fluctuate due to climatic and other variations. Construction materials may vary from the samples taken. Unless otherwise agreed in writing, the procedures employed by TSC are not designed to detect intentional concealment or misrepresentation of facts by others.

7. DOCUMENTS AND SAMPLES: Client is granted an exclusive license to use findings and reports prepared and issued by TSC and any sub-consultants pursuant to this Agreement for the purpose set forth in TSC's proposal provided that TSC has received payment in full for its services. TSC and, if applicable, its sub-consultant, retain all copyright and ownership interests in the reports, boring logs, maps, field data, field notes, laboratory test data and similar documents, and the ownership and freedom to use all data generated by it for any purpose. Unless otherwise agreed in writing, test specimens or samples will be disposed immediately upon completion of the test. All drilling samples or specimens will be disposed sixty (60) days after submission of TSC's report.

8. TERMINATION: TSC's obligation to provide services may be terminated by either party upon (7) seven days prior written notice. In the event of termination of TSC's services, TSC shall be compensated by Client for all services performed up to and including the termination date, including reimbursable expenses. The terms and conditions of these General Conditions shall survive the termination of TSC's obligation to provide services.

9. PAYMENT: Client shall be invoiced periodically for services performed. ~~Client agrees to pay each invoice within thirty (30) days of its receipt. Client further agrees to pay interest on all amounts invoiced and not paid or objected to in writing for valid cause within sixty (60) days at the rate of twelve (12%) per annum (or the maximum interest rate permitted by applicable law, whichever is the lesser) until paid and TSC's costs of collection of such accounts, including court costs and reasonable attorney's fees.~~

10. WARRANTY: TSC's professional services will be performed, its findings obtained and its reports prepared in accordance with these General Conditions and with generally accepted principles and practices. In performing its professional services, TSC will use that degree of care and skill ordinarily exercised under similar circumstances by members of its profession. In performing physical work in pursuit of its professional services, TSC will use that degree of care and skill ordinarily used under similar circumstances. This warranty is in lieu of all other warranties or representations, either express or implied. Statements made in TSC reports are opinions based upon engineering judgment and are not to be construed as representations of fact.

~~Should TSC or any of its employees be found to have been~~ negligent in performing professional services or to have made and breached any express or implied warranty, representation or contract, Client, all parties claiming through Client and all parties claiming to have in any way relied upon TSC's services or work agree that the maximum aggregate amount of damages for which TSC, its officers, employees and agents shall be liable is limited to $50,000 or the total amount of the fee paid to TSC for its services performed with respect to the project, whichever amount is greater. ~~In the event Client is unwilling or unable to limit the damages for which TSC may be liable in accordance with the provisions set forth in the preceding paragraph, upon written request of Client received within five days of Client's acceptance of TSC's proposal together with payment of an additional fee in the amount of 5% of TSC's estimated cost for its services (to be adjusted to 5% of the amount actually billed by TSC for its services on the project at time of completion), the limit on damages shall be increased to $500,000 or the amount of TSC's fee, whichever is the greater. This charge is not to be construed as being a charge for insurance of any type, but is increased consideration for the exposure to an award of greater damages.~~

11. INDEMNITY: Subject to the provisions set forth herein, TSC and Client hereby agree to indemnify and hold harmless each other and their respective shareholders, directors, officers, partners, employees, agents, subsidiaries and division (and each of their heirs, successors, and assigns) from any and all claims, demands, liabilities, suits, causes of action, judgments, costs and expenses, including reasonable attorneys' fees, arising, or allegedly arising, from personal injury, including death, property damage, including loss of use thereof, due in any manner to the negligence of either of them or their agents or employees or independent contractors. In the event both TSC and Client are found to be negligent or at fault, then any liability shall be apportioned between them pursuant to their pro rata share of negligence or fault. TSC and Client further agree that their liability to any third party shall, to the extent permitted by law, be several and not joint. The liability of TSC under this provision shall not exceed the policy limits of insurance carried by TSC. Neither TSC nor Client shall be bound under this indemnity agreement to liability determined in a proceeding in which it did not participate represented by its own independent counsel. The indemnities provided hereunder shall not terminate upon the termination or expiration of this Agreement, but may be modified to the extent of any waiver of subrogation agreed to by TSC and paid for by Client.

12. SUBPOENAS: TSC's employees shall not be retained as expert witnesses except by separate, written agreement. Client agrees to pay TSC pursuant to TSC's then current fee schedule for any TSC employee(s) subpoenaed by any party as an occurrence witness as a result of TSC's services.

13. OTHER AGREEMENTS: TSC shall not be bound by any provision or agreement (i) requiring or providing for arbitration of disputes or controversies arising out of this Agreement or its performance, (ii) wherein TSC waives any rights to a mechanics lien or surety bond claim; (iii) that conditions TSC's right to receive payment for its services upon payment to Client by any third party or (iv) that requires TSC to indemnify any party beyond its own negligence These General Conditions are notice, where required, that TSC shall file a lien whenever necessary to collect past due amounts. This Agreement contains the entire understanding between the parties. Unless expressly accepted by TSC in writing prior to delivery of TSC's services, Client shall not add any conditions or impose conditions which are in conflict with those contained herein, and no such additional or conflicting terms shall be binding upon TSC. The unenforceability or invalidity of any provision or provisions shall not render any other provision or provisions unenforceable or invalid. This Agreement shall be construed and enforced in accordance with the laws of the State of Illinois. In the event of a dispute arising out of or relating to the performance of this Agreement, the breach thereof or TSC's services, the parties agree to try in good faith to settle the dispute by mediation under the Construction Industry Mediation Rules of the American Arbitration Association as a condition precedent to filing any demand for arbitration, or any petition or complaint with any court. Paragraph headings are for convenience only and shall not be construed as limiting the meaning of the provisions contained in these General Conditions.

PAVEMENT CORE RESULTS

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

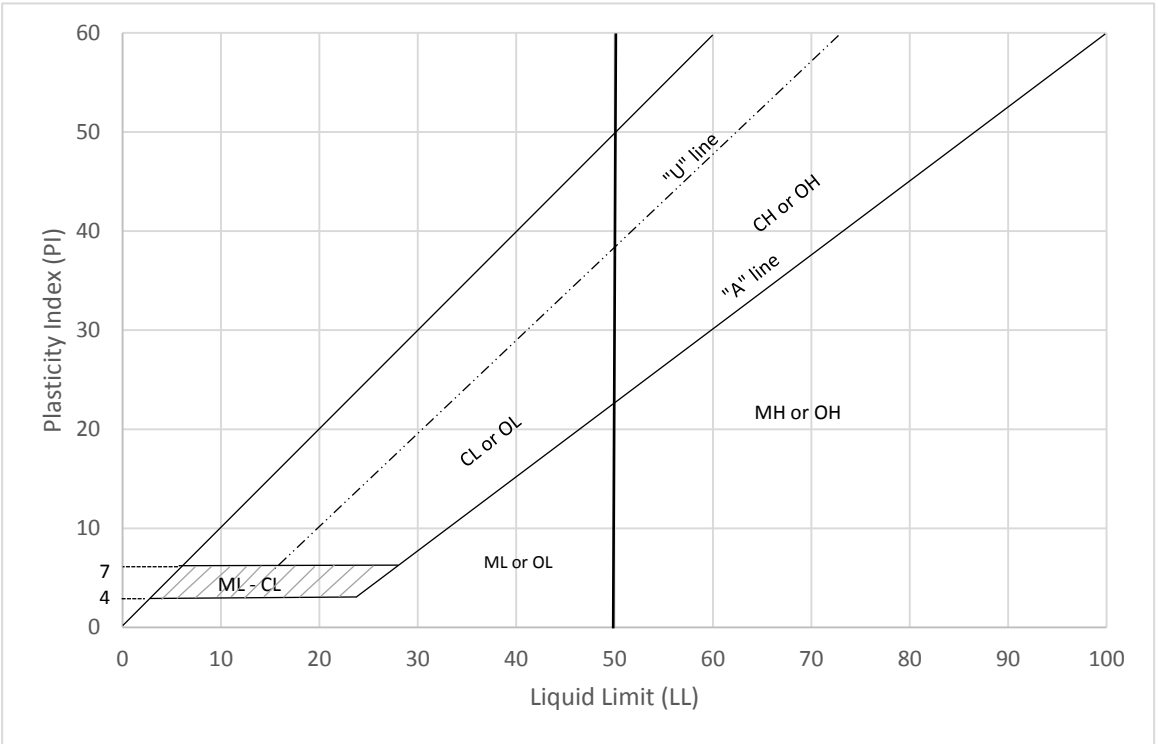
C-1	1.5"	Bituminous Surface Course	
	2.3"	Bituminous Binder Course	(Not Bonded to Underling Course)
	1.9"	Bituminous Binder Course	(Not Bonded to Underling Course)
	4.1"	Bituminous Binder Course	
	9¾"	**Total Asphalt Pavement Thickness**	
	6"	Crushed Stone Base Course, with Asphalt pieces and Clay	
C-2	1.4"	Bituminous Surface Course	(Not Bonded to Underling Course)
	1.5"	Bituminous Surface Course	(Partially Deteriorated)
	3"	**Total Asphalt Pavement Thickness**	
	7"	Crushed Stone Base Course, with course to fine sand	
C-3	1.5"	Bituminous Surface Course	(Partially Deteriorated)
	1½"	**Total Asphalt Pavement Thickness**	
	8"	Crushed Stone Base Course (apparent CA-6 gradation)	
C-4	1.9"	Bituminous Surface Course	
	1.8"	Bituminous Binder Course	
	3¾"	**Total Asphalt Pavement Thickness**	
	12"	Crushed Stone Base Course (apparent CA-6 gradation)	
C-5	1.6"	Bituminous Surface Course	
	1.3"	Bituminous Surface Course	
	5.8"	Bituminous Binder Course	
	8½"	**Total Asphalt Pavement Thickness**	
		No Base Course Observed	
C-6	1.9"	Bituminous Surface Course	
	2"	**Total Asphalt Pavement Thickness**	
	6"	Crushed Stone Base Course (apparent CA-6 gradation)	
C-7	2.3"	Bituminous Surface Course	
	2¼"	**Total Asphalt Pavement Thickness**	
	8"	Crushed Stone Base Course, with course to fine sand	

C-8	1.4"	Bituminous Surface Course	
	2.4"	Bituminous Binder Course	(Not Bonded to Underling Course)
	1.8"	Bituminous Binder Course	(Not Bonded to Underling Course)
	4.8"	Bituminous Binder Course	
	10½"	**Total Asphalt Pavement Thickness**	
	12"	Crushed Stone Base Course, with course to fine sand	
C-9	1.4"	Bituminous Surface Course	
	1.6"	Bituminous Binder Course	
	3"	**Total Asphalt Pavement Thickness**	
	18"	Crushed Stone Base Course (apparent CA-6 gradation)	
C-10	NP	Bituminous Surface Course	(Deteriorated, Not Bonded to Underling Course)
	NP	Bituminous Binder Course	(Deteriorated)
	± 3"	**Approximate Asphalt Pavement Thickness**	
	7"	Crushed Stone Base Course (apparent CA-6 gradation)	

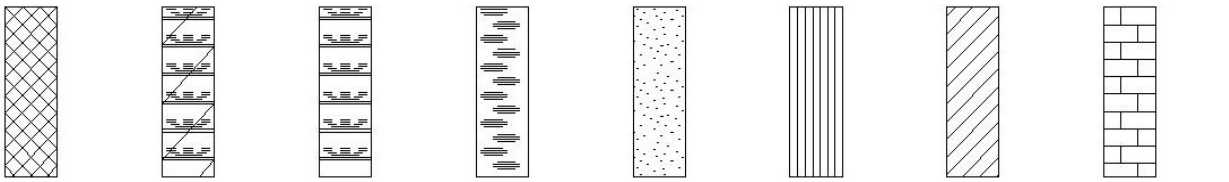
Testing Service Corporation
Unified Classification Chart

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

a. Based on the material passing the 3-inch (75-mm) sieve.
b. If field sample contained cobbles and/or boulders, add "with cobbles and/or boulders" to group name
c. Gravels with 5 to 12% fines required dual symbols
GW-GM well graded gravel with silt
GW-GC well graded gravel with clay
GP-GM poorly graded gravel with silt
GP-GC poorly graded gravel with clay
d. Sands with 5 to 12% fines require dual symbols
SW-SM well graded sand with silt
SW-SC well graded sand with clay
SP-SM poorly graded sand with silt
SP-SC poorly graded sand with clay
e. $C_u = D_{60}/D_{10}$ $C_C = \frac{(D_{30})^2}{D_{10} \times D_{60}}$
f. If soils contains ≥ 15% sand, add "with sand" to group name.
g. If fines classify as CL-ML, use dual symbol GC-GM, SC-SM
h. If fines are organic, add "with organic fines" to group name
i. If soils contains ≥ 15% gravel, add "with gravel" to group name
j. If Atterberg Limits plot in hatched area, soil is a CL – ML, silty clay
k. If soils contains 15 to 29% plus No. 200, add "with sand" or "with gravel" whichever is predominant
l. If soil contains ≥ 30% plus No. 200, predominantly sand, add "sandy" to group name.
m. If soils contains ≥ 30% plus No. 200, predominantly gravel, add "gravelly" to group name
n. PI ≥ 4 and plots on or above "A" line
o. PI ≥ 4 and plots below "A" line
p. PI plots on or above "A" line
q. PI plots below "A" line



LEGEND FOR BORING LOGS



FILL TOPSOIL PEAT GRAVEL SAND SILT CLAY LIMESTONE/ DOLOMITE

SAMPLE TYPE

SS	=	Split-Spoon
ST	=	Thin-Walled Tube
A	=	Auger
MC	=	Macro-Core (Geoprobe)

WATER LEVEL OBSERVATIONS

▼	While Drilling
▽	End of Boring
▼	24 Hours

FIELD AND LABORATORY TEST DATA

N	=	Standard Penetration Resistance in Blows per Foot (bpf)
WC	=	In-Situ Water Content (%)
Qu	=	Unconfined Compressive Strength in Tons per Square Foot (tsf)
	*	Pocket Penetrometer Reading: Maximum Value = 4.5 tsf
γ_{dry}	=	Dry Unit Weight in Pounds per Cubic Foot (pcf)

SOIL DESCRIPTIONS:

MATERIAL	PARTICLE SIZE RANGE
BOULDER	Over 12 inches
COBBLE	12 inches to 3 inches
Large GRAVEL	3 inches to ¾ inch
Small GRAVEL	¾ inch to No. 4 Sieve
Coarse SAND	No. 4 Sieve to No. 10 Sieve
Medium SAND	No. 10 Sieve to No. 40 Sieve
Fine SAND	No. 40 Sieve to No. 200 Sieve
SILT and CLAY	Passing No. 200 Sieve

COHESIVE SOILS

CONSISTENCY	Qu (tsf)
Very Soft	Less than 0.25
Soft	0.25 to 0.5
Medium Stiff	0.5 to 1.0
Stiff	1.0 to 2.0
Very Stiff	2.0 to 4.0
Hard	4.0 and over

COHESIONLESS SOILS

RELATIVE DENSITY	N (bpf)
Very Loose	0 – 3
Loose	4 – 9
Medium Dense	10 – 29
Dense	30 – 49
Very Dense	50 and over

MODIFYING TERM	PERCENT BY WEIGHT
Trace	1 – 10
Little	10 – 20
Some	20 – 35

PROJECT **Zion Water Main, Gilead to Gabriel Between 27th and 29th St, Zion, IL**

CLIENT **Christopher B. Burke Engineering, Ltd., 9575 West Higgins Road, Rosemont, IL**

BORING **1** DATE STARTED **2-15-23** DATE COMPLETED **2-15-23** JOB **L-95,245**

ELEVATIONS

GROUND SURFACE

END OF BORING

WATER LEVEL OBSERVATIONS

WHILE DRILLING **Dry**

AT END OF BORING **Dry**

24 HOURS

LENGTH RECOVERY	SAMPLE NO.	SAMPLE TYPE	N	WC	Qu	γ_{DRY}	DEPTH	ELEV.	SOIL DESCRIPTIONS
	1	CORE					0.8		9¾" Bituminous Concrete
	2	BAG					1.3		6" Crushed Stone Base with Clay
	3	MC		25.2	1.0*		4.0		Medium stiff to stiff brown silty CLAY, little sand, trace gravel, very moist (CL)
	A			15.8	4.5+*				Hard brown trace gray silty CLAY, little sand and gravel, moist (CL)
	4	MC							
	B			14.7	4.5+*				
									End of Boring at 8.0'

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

MC = Continuous Macro-core samples (1.5" diam.) using ATV GeoProbe rig

DISTANCE BELOW SURFACE IN FEET

0

5

10

15

DRILL RIG NO. **353**

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

TSC 95245.GPJ TSC_ALL.GDT 3/23/23

PROJECT **Zion Water Main, Gilead to Gabriel Between 27th and 29th St, Zion, IL**

CLIENT **Christopher B. Burke Engineering, Ltd., 9575 West Higgins Road, Rosemont, IL**

BORING **2** DATE STARTED **2-14-23** DATE COMPLETED **2-14-23** JOB **L-95,245**

ELEVATIONS

GROUND SURFACE

END OF BORING

WATER LEVEL OBSERVATIONS

WHILE DRILLING **Dry**

AT END OF BORING **Dry**

24 HOURS

LENGTH RECOVERY	SAMPLE NO.	SAMPLE TYPE	N	WC	Qu	γ_{DRY}	DEPTH	ELEV.	SOIL DESCRIPTIONS
	1	CORE					0.3		3" Bituminous Concrete
	2	BAG					0.8		7" Crushed Stone Base
	A			15.9	2.5*	118			FILL - Brown silty CLAY, little sand and gravel, moist (CL)
	3	MC					3.0		
	B			45.2	0.75*				Black clayey TOPSOIL, very moist (OL)
	A			23.8	1.25*		4.0		Stiff brown trace gray silty CLAY, little sand, trace gravel, trace roots, moist to very moist (CL)
	4	MC					6.0		
	B			27.7	0.75*				Medium stiff brown and gray silty CLAY, trace sand, very moist (CL/CH)

End of Boring at 8.0'

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

MC = Continuous Macro-core samples (1.5" diam.) using ATV GeoProbe rig

DISTANCE BELOW SURFACE IN FEET

0 5 10 15

DRILL RIG NO. **353**

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

TSC 95245.GPJ TSC_ALL.GDT 3/23/23

PROJECT **Zion Water Main, Gilead to Gabriel Between 27th and 29th St, Zion, IL**

CLIENT **Christopher B. Burke Engineering, Ltd., 9575 West Higgins Road, Rosemont, IL**

BORING **3** DATE STARTED **2-15-23** DATE COMPLETED **2-15-23** JOB **L-95,245**

ELEVATIONS

GROUND SURFACE

END OF BORING

WATER LEVEL OBSERVATIONS

WHILE DRILLING **Dry**

AT END OF BORING **Dry**

24 HOURS

LENGTH RECOVERY	SAMPLE NO.	SAMPLE TYPE	N	WC	Qu	γ_{DRY}	DEPTH	ELEV.	SOIL DESCRIPTIONS
	1	CORE					0.1		1½" Bituminous Concrete
	2	BAG					0.8		8" Crushed Stone [CA-6]
	A			16.3	1.5*	113			FILL - Brown silty CLAY, little sand and gravel, trace
	3	MC							
	B			17.1	2.5*	112			
	A			18.5	2.25*	110			
	4	MC							
	B			22.5	1.5*	105			
									End of Boring at 8.0'

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

MC = Continuous Macro-core samples (1.5" diam.) using ATV GeoProbe rig

DISTANCE BELOW SURFACE IN FEET

0

5

10

15

DRILL RIG NO. **353**

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

TSC 95245.GPJ TSC_ALL.GDT 3/23/23

PROJECT **Zion Water Main, Gilead to Gabriel Between 27th and 29th St, Zion, IL**

CLIENT **Christopher B. Burke Engineering, Ltd., 9575 West Higgins Road, Rosemont, IL**

BORING **4** DATE STARTED **2-15-23** DATE COMPLETED **2-15-23** JOB **L-95,245**

ELEVATIONS

GROUND SURFACE

END OF BORING

WATER LEVEL OBSERVATIONS

WHILE DRILLING **Dry**

AT END OF BORING **Dry**

24 HOURS

LENGTH RECOVERY	SAMPLE NO.	SAMPLE TYPE	N	WC	Qu	γ_{DRY}	DEPTH	ELEV.	SOIL DESCRIPTIONS
	1	CORE					0.3		3¾" Bituminous Concrete
	2	BAG					1.3		12" Crushed Stone [CA-6]
	A			25.5	1.5*		2.0		Stiff dark brown silty CLAY, trace sand, moist to very moist (CL/CH)
	3	MC							Stiff brown trace gray silty CLAY, trace sand, moist
	B			28.6	1.5*				to very moist (CL/CH)
							4.0		
	A			18.4	3.0*				Very stiff brown and gray silty CLAY, little sand and gravel, moist (CL)
	4	MC					6.0		
	B			19.1					Brown and gray clayey SILT, little sand, trace gravel, moist (ML)
									End of Boring at 8.0'

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

MC = Continuous Macro-core samples (1.5" diam.) using ATV GeoProbe rig

DISTANCE BELOW SURFACE IN FEET

0

5

10

15

DRILL RIG NO. **353**

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

PROJECT **Zion Water Main, Gilead to Gabriel Between 27th and 29th St, Zion, IL**

CLIENT **Christopher B. Burke Engineering, Ltd., 9575 West Higgins Road, Rosemont, IL**

BORING **5** DATE STARTED **2-15-23** DATE COMPLETED **2-15-23** JOB **L-95,245**

ELEVATIONS

GROUND SURFACE

END OF BORING

WATER LEVEL OBSERVATIONS

WHILE DRILLING **4.0 '**

AT END OF BORING **2.0 '**

24 HOURS

LENGTH RECOVERY	SAMPLE NO.	SAMPLE TYPE	N	WC	Qu	γ_{DRY}	DEPTH	ELEV.	SOIL DESCRIPTIONS
	1	CORE					0.7		8½" Bituminous Concrete
	A			14.9	4.5+*		2.0		Hard brown trace gray silty CLAY, little sand and gravel, moist (CL)
	2	MC							
	B			13.8			4.0		Brown SAND, little gravel, little silt, moist (SP-SM)
	A			12.3			6.0		Brown SAND and GRAVEL, wet (SP/GP)
	3	MC							
	B			15.4	4.5+*				Hard brown and gray silty CLAY, little sand and gravel, moist (CL)
									End of Boring at 8.0'

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

MC = Continuous Macro-core samples (1.5" diam.) using ATV GeoProbe rig

DISTANCE BELOW SURFACE IN FEET

0

5

10

15

DRILL RIG NO. **353**

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

TSC 95245.GPJ TSC_ALL.GDT 3/23/23

PROJECT **Zion Water Main, Gilead to Gabriel Between 27th and 29th St, Zion, IL**

CLIENT **Christopher B. Burke Engineering, Ltd., 9575 West Higgins Road, Rosemont, IL**

BORING **6** DATE STARTED **2-15-23** DATE COMPLETED **2-15-23** JOB **L-95,245**

ELEVATIONS

GROUND SURFACE

END OF BORING

WATER LEVEL OBSERVATIONS

WHILE DRILLING **Dry**

AT END OF BORING **Dry**

24 HOURS

LENGTH RECOVERY	SAMPLE NO.	SAMPLE TYPE	N	WC	Qu	γ_{DRY}	DEPTH	ELEV.	SOIL DESCRIPTIONS
	1	CORE					0.2		2" Bituminous Concrete
	2	BAG					0.7		6" Crushed Stone Base
	A			11.1					FILL - Brown SAND, trace gravel, trace silt, moist (SP-SM)
	3	MC					2.5		
	B			24.9	1.0*	101			FILL - Brown, black and gray silty CLAY, little sand, trace gravel, very moist (CL)
	A			28.9	1.5*		4.0		Stiff dark brown silty CLAY, trace sand, trace organic, moist to very moist (CL/CH)
	4	MC					6.0		
	B			24.3	1.0*				Medium stiff to stiff brown and gray silty CLAY, little sand, trace gravel, very moist (CL)
									End of Boring at 8.0'

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

MC = Continuous Macro-core samples (1.5" diam.) using ATV GeoProbe rig

DISTANCE BELOW SURFACE IN FEET

0 5 10 15

DRILL RIG NO. **353**

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

TSC 95245.GPJ TSC_ALL.GDT 3/23/23

PROJECT **Zion Water Main, Gilead to Gabriel Between 27th and 29th St, Zion, IL**

CLIENT **Christopher B. Burke Engineering, Ltd., 9575 West Higgins Road, Rosemont, IL**

BORING **7** DATE STARTED **2-15-23** DATE COMPLETED **2-15-23** JOB **L-95,245**

ELEVATIONS

GROUND SURFACE

END OF BORING

WATER LEVEL OBSERVATIONS

WHILE DRILLING **Dry**

AT END OF BORING **Dry**

24 HOURS

LENGTH RECOVERY	SAMPLE NO.	SAMPLE TYPE	N	WC	Qu	γ_{DRY}	DEPTH	ELEV.	SOIL DESCRIPTIONS
	1	CORE					0.2		2¼" Bituminous Concrete
	2	BAG					0.9		8" Crushed Stone Base
	A			22.5	0.5*	105			FILL - Brown, black and gray silty CLAY, trace sand and gravel, trace organic, very moist (CL)
	3	MC					2.5		
	B			13.9	1.75*	110			FILL - Brown and gray silty CLAY, little sand and gravel, moist (CL)
							4.0		
	A			30.1	0.5*				Stiff brown and gray silty CLAY, trace sand, very moist (CL/CH)
	4	MC					6.0		
	B			14.6	1.5*				Stiff brown and gray silty CLAY, little sand and gravel, moist to very moist (CL)
									End of Boring at 8.0'

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

MC = Continuous Macro-core samples (1.5" diam.) using ATV GeoProbe rig

DISTANCE BELOW SURFACE IN FEET

0 5 10 15

DRILL RIG NO. **353**

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

TSC 95245.GPJ TSC_ALL.GDT 3/23/23

PROJECT **Zion Water Main, Gilead to Gabriel Between 27th and 29th St, Zion, IL**

CLIENT **Christopher B. Burke Engineering, Ltd., 9575 West Higgins Road, Rosemont, IL**

BORING **8** DATE STARTED **2-14-23** DATE COMPLETED **2-14-23** JOB **L-95,245**

ELEVATIONS

GROUND SURFACE

END OF BORING

WATER LEVEL OBSERVATIONS

WHILE DRILLING **Dry**

AT END OF BORING **Dry**

24 HOURS

LENGTH RECOVERY	SAMPLE NO.	SAMPLE TYPE	N	WC	Qu	γ_{DRY}	DEPTH	ELEV.	SOIL DESCRIPTIONS
	1	CORE					0.0		10½" Bituminous Concrete
	2	BAG					0.9		12" Crushed Stone Base
	3	MC		35.8	0.75*		1.9		Black clayey TOPSOIL, very moist (OL)
	A			22.0	1.0*		4.0		Medium stiff to stiff brown and gray silty CLAY, trace sand and gravel, very moist (CL)
	4	MC					6.0		
	B			24.2	2.5*				Very stiff brown and gray silty CLAY, little sand, trace gravel, moist (CL)
							8.0		End of Boring at 8.0'

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

MC = Continuous Macro-core samples (1.5" diam.) using ATV GeoProbe rig

DISTANCE BELOW SURFACE IN FEET

0

5

10

15

DRILL RIG NO. **353**

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

TSC 95245.GPJ TSC_ALL.GDT 3/23/23

PROJECT **Zion Water Main, Gilead to Gabriel Between 27th and 29th St, Zion, IL**

CLIENT **Christopher B. Burke Engineering, Ltd., 9575 West Higgins Road, Rosemont, IL**

BORING **9** DATE STARTED **2-14-23** DATE COMPLETED **2-14-23** JOB **L-95,245**

ELEVATIONS

GROUND SURFACE

END OF BORING

WATER LEVEL OBSERVATIONS

WHILE DRILLING **Dry**

AT END OF BORING **Dry**

24 HOURS

LENGTH RECOVERY	SAMPLE NO.	SAMPLE TYPE	N	WC	Qu	γ_{DRY}	DEPTH	ELEV.	SOIL DESCRIPTIONS
	1	CORE					0.3		3½" Bituminous Concrete
	2	BAG					1.8		18" Crushed Stone Base
	3	MC		21.7	0.75*	106			FILL - Brown and gray trace black silty CLAY, little sand, trace gravel, trace organic, very moist (CL)
	A			22.7	0.5*	86			
	4	MC							
	B			24.6	0.75*	88			
									End of Boring at 8.0'

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

MC = Continuous Macro-core samples (1.5" diam.) using ATV GeoProbe rig

DISTANCE BELOW SURFACE IN FEET

0

5

10

15

DRILL RIG NO. **353**

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

TSC 95245.GPJ TSC_ALL.GDT 3/23/23

PROJECT **Zion Water Main, Gilead to Gabriel Between 27th and 29th St, Zion, IL**

CLIENT **Christopher B. Burke Engineering, Ltd., 9575 West Higgins Road, Rosemont, IL**

BORING **10** DATE STARTED **2-15-23** DATE COMPLETED **2-15-23** JOB **L-95,245**

ELEVATIONS

GROUND SURFACE

END OF BORING

WATER LEVEL OBSERVATIONS

WHILE DRILLING **Dry**

AT END OF BORING **Dry**

24 HOURS

LENGTH RECOVERY	SAMPLE NO.	SAMPLE TYPE	N	WC	Qu	γ_{DRY}	DEPTH	ELEV.	SOIL DESCRIPTIONS
	1	CORE					0.3		±3" Bituminous Concrete (Deteriorated)
	2	BAG					0.8		7" Crushed Stone [CA-6]
	A			16.5	1.5*	104			FILL - Brown, black and gray silty CLAY, little sand and gravel, trace organic, moist to very moist (CL)
	3	MC					2.0		
	B			21.0	1.5*	100			FILL - Brown and dark brown silty CLAY, trace sand and gravel, trace organic, trace brick pieces, very moist (CL)
	A			25.4	0.5*	95			
	4	MC					6.0		
	B			18.2	1.75*				Stiff brown trace gray silty CLAY, little sand and gravel, moist (CL)
									End of Boring at 8.0'

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

MC = Continuous Macro-core samples (1.5" diam.) using ATV GeoProbe rig

DISTANCE BELOW SURFACE IN FEET

0

5

10

15

DRILL RIG NO. **353**

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

NOTE:

GROUND SURFACE ELEVATIONS AT THE BORINGS WERE ACQUIRED BY TSC USING A TRIMBLE R8S GNSS RECEIVER, BEING ROUNDED TO THE NEAREST 0.5 FOOT.

LEGEND

SOIL BORING LOCATION

BORING LOCATION PLAN
ZION WATER MAIN
GILEAD AVENUE TO GABRIEL AVENUE
BETWEEN 27TH AND 29TH STREET
ZION, ILLINOIS

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

DRAWN BY:	FFE
CHECKED BY:	TRP
JOB NO. :	L-95,245
DATE:	03-24-23

PAGE NO.
1 OF 1

IDOT HIGHWAY STANDARDS

ABV	ABOVE
A/C	ACCESS CONTROL
AC	ACRE
ADJ	ADJUST
AS	AERIAL SURVEYS
AGG	AGGREGATE
AH	AHEAD
APT	APARTMENT
ASPH	ASPHALT
AUX	AUXILIARY
AGS	AUXILIARY GAS VALVE (SERVICE)
AVE	AVENUE
AX	AXIS OF ROTATION
BK	BACK
B-B	BACK TO BACK
BKPL	BACKPLATE
B	BARN
BARR	BARRICADE
BGN	BEGIN
BM	BENCHMARK
BIND	BINDER
BIT	BITUMINOUS
BTM	BOTTOM
BLVD	BOULEVARD
BRK	BRICK
BBOX	BUFFALO BOX
BLDG	BUILDING
CIP	CAST IRON PIPE
CB	CATCH BASIN
C-C	CENTER TO CENTER
CL	CENTERLINE OR CLEARANCE
CL-E	CENTERLINE TO EDGE
CL-F	CENTERLINE TO FACE
CTS	CENTERS
CERT	CERTIFIED
CHSLD	CHISELED
CS	CITY STREET
CP	CLAY PIPE
CLSD	CLOSED
CLID	CLOSED LID
CT	COAT OR COURT
COMB	COMBINATION
C	COMMERCIAL BUILDING
CE	COMMERCIAL ENTRANCE
CONC	CONCRETE
CONST	CONSTRUCT
CONTD	CONTINUED
CONT	CONTINUOUS
COR	CORNER
CORR	CORRUGATED
CMP	CORRUGATED METAL PIPE
CNTY	COUNTY
CH	COUNTY HIGHWAY
CSE	COURSE
XSECT	CROSS SECTION
m^3	CUBIC METER
mm^3	CUBIC MILLIMETER
CU YD	CUBIC YARD
CULV	CULVERT
C&G	CURB & GUTTER
D	DEGREE OF CURVE
DC	DEPRESSED CURVE
DET	DETECTOR
DIA	DIAMETER
DIST	DISTRICT
DOM	DOMESTIC
DBL	DOUBLE
DSEL	DOWNSTREAM ELEVATION
DSFL	DOWNSTREAM FLOWLINE
DR	DRAINAGE OR DRIVE
DI	DRAINAGE INLET OR DROP INLET
DRV	DRIVEWAY
DCT	DUCT
EA	EACH
EB	EASTBOUND
EOP	EDGE OF PAVEMENT
E-CL	EDGE TO CENTERLINE
E-E	EDGE TO EDGE
EL	ELEVATION
ENTR	ENTRANCE
EXC	EXCAVATION
EX	EXISTING
EXPWAY	EXPRESSWAY
E	EXTERNAL DISTANCE OF HORIZONTAL CURVE
E	OFFSET DISTANCE TO VERTICAL CURVE
F-F	FACE TO FACE
FA	FEDERAL AID
FAI	FEDERAL AID INTERSTATE
FAP	FEDERAL AID PRIMARY
FAS	FEDERAL AID SECONDARY
FAUS	FEDERAL AID URBAN SECONDARY
FP	FENCE POST
FE	FIELD ENTRANCE
FH	FIRE HYDRANT
FL	FLOW LINE
FB	FOOT BRIDGE
FDN	FOUNDATION
FR	FRAME
F&G	FRAME & GRATE
FRWAY	FREEWAY
GAL	GALLON
GALV	GALVANIZED
G	GARAGE
GM	GAS METER
GV	GAS VALVE
GRAN	GRANULAR
GR	GRATE
GRVL	GRAVEL
GND	GROUND
GUT	GUTTER
GP	GUY POLE
GW	GUY WIRE
HH	HANDHOLE
HATCH	HATCHING
HD	HEAD
HDW	HEADWALL
HDUTY	HEAVY DUTY
ha	HECTARE
HMA	HOT MIX ASPHALT
HWY	HIGHWAY
HORIZ	HORIZONTAL
HSE	HOUSE
IL	ILLINOIS
IMP	IMPROVEMENT
IN DIA	INCH DIAMETER
INL	INLET
INST	INSTALLATION
IDS	INTERSECTION DESIGN STUDY
INV	INVERT
IP	IRON PIPE
IR	IRON ROD
JT	JOINT
kg	KILOGRAM
km	KILOMETER
LS	LANDSCAPING
LN	LANE
LT	LEFT
LP	LIGHT POLE
LGT	LIGHTING
LF	LINEAL FEET OR LINEAR FEET
L	LITER OR CURVE LENGTH
LC	LONG CHORD
LNG	LONGITUDINAL
L SUM	LUMP SUM
MACH	MACHINE
MB	MAIL BOX
MH	MANHOLE
MATL	MATERIAL
MED	MEDIAN
m	METER
METH	METHOD
M	MID-ORDINATE
mm	MILLIMETER
mm DIA	MILLIMETER DIAMETER
MIX	MIXTURE
MBH	MOBILE HOME
MOD	MODIFIED
MFT	MOTOR FUEL TAX
N & BC	NAIL & BOTTLE CAP
N & C	NAIL & CAP
N & W	NAIL & WASHER
NOAA	NATIONAL OCEANIC ATMOSPHERIC ADMINISTRATION
NC	NORMAL CROWN
NB	NORTHBOUND
NE	NORTHEAST
NW	NORTHWEST
OLID	OPEN LID
PAT	PATTERN
PVD	PAVED
PVMT	PAVEMENT
PM	PAVEMENT MARKING
PED	PEDESTAL
PNT	POINT
PC	POINT OF CURVATURE
PI	POINT OF INTERSECTION OF HORIZONTAL CURVE
PRC	POINT OF REVERSE CURVE
PT	POINT OF TANGENCY
POT	POINT ON TANGENT
POLYETH	POLYETHYLENE
PCC	PORTLAND CEMENT CONCRETE
PP	POWER POLE OR PRINCIPAL POINT
PRM	PRIME
PE	PRIVATE ENTRANCE
PROF	PROFILE
PGL	PROFILE GRADELINE
PROJ	PROJECT
P.C.	PROPERTY CORNER
PL	PROPERTY LINE
PR	PROPOSED
R	RADIUS
RR	RAILROAD
RRS	RAILROAD SPIKE
RPS	REFERENCE POINT STAKE
REF	REFLECTIVE
RCCP	REINFORCED CONCRETE CULVERT PIPE
REINF	REINFORCEMENT
REM	REMOVAL
RC	REMOVE CROWN
REP	REPLACEMENT
REST	RESTAURANT
RESURF	RESURFACING
RET	RETAINING
RT	RIGHT
ROW	RIGHT-OF-WAY
RD	ROAD
RDWY	ROADWAY
RTE	ROUTE
SAN	SANITARY
SANS	SANITARY SEWER
SEC	SECTION
SEED	SEEDING
SHAP	SHAPING
S	SHED
SH	SHEET
SHLD	SHOULDER
SW	SIDEWALK OR SOUTHWEST
SIG	SIGNAL
SOD	SODDING
SM	SOLID MEDIAN
SB	SOUTHBOUND
SE	SOUTHEAST
SPL	SPECIAL
SD	SPECIAL DITCH
SQ FT	SQUARE FEET
m^2	SQUARE METER
mm^2	SQUARE MILLIMETER
SQ YD	SQUARE YARD
STB	STABILIZED
STD	STANDARD
SBI	STATE BOND ISSUE
SR	STATE ROUTE
STA	STATION
SPBGR	STEEL PLATE BEAM GUARDRAIL
SS	STORM SEWER
STY	STORY
ST	STREET
STR	STRUCTURE
e	SUPERELEVATION RATE
S.E. RUN.	SUPERELEVATION RUNOFF LENGTH
SURF	SURFACE
SMK	SURVEY MARKER
T	TANGENT DISTANCE
T.R.	TANGENT RUNOUT DISTANCE
TEL	TELEPHONE
TB	TELEPHONE BOX
TP	TELEPHONE POLE
TEMP	TEMPORARY
TBM	TEMPORARY BENCH MARK
TD	TILE DRAIN
TBE	TO BE EXTENDED
TBR	TO BE REMOVED
TBS	TO BE SAVED
TWP	TOWNSHIP
TR	TOWNSHIP ROAD
TS	TRAFFIC SIGNAL
TSCB	TRAFFIC SIGNAL CONTROL BOX
TSC	TRAFFIC SYSTEMS CENTER
TRVS	TRANSVERSE
TRVL	TRAVEL
TRN	TURN
TY	TYPE
T-A	TYPE A
TYP	TYPICAL
UNDGND	UNDERGROUND
USGS	U.S. GEOLOGICAL SURVEY
USEL	UPSTREAM ELEVATION
USFL	UPSTREAM FLOWLINE
UTIL	UTILITY
VBOX	VALVE BOX
VV	VALVE VAULT
VLT	VAULT
VEH	VEHICLE
VP	VENT PIPE
VERT	VERTICAL
VC	VERTICAL CURVE
VPC	VERTICAL POINT OF CURVATURE
VPI	VERTICAL POINT OF INTERSECTION
VPT	VERTICAL POINT OF TANGENCY
WM	WATER METER
WV	WATER VALVE
WMAIN	WATER MAIN
WB	WESTBOUND
WILDFL	WILDFLOWERS
W	WITH
WO	WITHOUT

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APPROVED January 1, 2019
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

DATE	REVISIONS
1-1-19	Added new symbols.
1-1-11	Updated abbreviations
	and symbols.

STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS

STANDARD 000001-07

ADJUSTMENT ITEMS

	EX	PR
Structure To Be Adjusted		ADJ
Structure To Be Cleaned		C
Main Structure To Be Filled		FM
Structure To Be Filled		F
Structure To Be Filled Special		FSP
Structure To Be Removed		R
Structure To Be Reconstructed		REC
Structure To Be Reconstructed Special		RSP
Frame and Grate To Be Adjusted		A
Frame and Lid To Be Adjusted		A
Domestic Service Box To Be Adjusted		A
Valve Vault To Be Adjusted		A
Special Adjustment		SP
Item To Be Abandoned		AB
Item To Be Moved		M
Item To Be Relocated		REL
Pavement Removal and Replacement		

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ALIGNMENT ITEMS

	EX	PR
Baseline		
Centerline		
Centerline Break Circle		
Baseline Symbol		
Centerline Symbol		
PI Indicator		
Point Indicator		
Horizontal Curve Data (Half Size)	CURVE P.I. STA= Δ= D= R= T= L= E= e= T.R.= S.E. RUN= P.C. STA= P.T. STA=	CURVE P.I. STA= Δ= D= R= T= L= E= e= T.R.= S.E. RUN= P.C. STA= P.T. STA=

BOUNDARIES ITEMS

	EX	PR
Dashed Property Line		
Solid Property/Lot Line		
Section/Grant Line		
Quarter Section Line		
Quarter/Quarter Section Line		
County/Township Line		
State Line		
Iron Pipe Found		
Iron Pipe Set		
Survey Marker		
Property Line Symbol		
Same Ownership Symbol (Half Size)		
Northwest Quarter Corner (Half Size)		
Section Corner (Half Size)		
Southeast Quarter Corner (Half Size)		

DRAINAGE ITEMS

	EX	PR
Channel or Stream Line		
Culvert Line		
Grading & Shaping Ditches		
Drainage Boundary Line		
Paved Ditch		
Aggregate Ditch		
Pipe Underdrain		
Storm Sewer		
Flowline		
Ditch Check		
Headwall		
Inlet		
Manhole		
Summit		
Roadway Ditch Flow		
Swale		
Catch Basin		
Culvert End Section		
Water Surface Indicator		
Riprap		

HYDRAULICS ITEMS

	EX	PR
Overflow		
Sheet Flow		
Hydrant Outlet		

STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS

STANDARD 000001-07

EROSION & SEDIMENT CONTROL ITEMS

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

CONTOUR ITEMS

	EX	PR
Approx. Index Line		
Approx. Intermediate Line		
Index Contour		
Intermediate Contour		

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NON-HIGHWAY IMPROVEMENT ITEMS

	EX	PR
Noise Attn./Levee		
Field Line		
Fence		
Base of Levee		
Mailbox		
Multiple Mailboxes		
Pay Telephone		
Advertising Sign		
ITS* Camera		
Wind Turbine		
Cellular Tower		

*Intelligent Transportation Systems

LANDSCAPING ITEMS

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

EXISTING LANDSCAPING ITEMS (contd.)

	EX	PR
Seeding Class 5		
Seeding Class 7		
Seedlings Type 1		
Seedlings Type 2		
Sodding		
Mowstake w/Sign		
Tree Trunk Protection		
Evergreen Tree	E	
Shade Tree	E	

LIGHTING

	EX	PR
Duct		
Conduit		
Electrical Aerial Cable	A	A
Electrical Buried Cable	L	L
Controller		
Underpass Luminaire		
Power Pole		

STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS

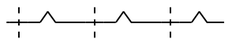
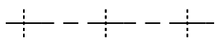
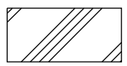
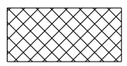
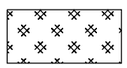
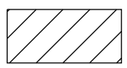
(Sheet 3 of 9)

STANDARD 000001-07

LIGHTING (contd.)

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

PAVEMENT (MISC.)

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

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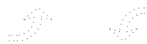
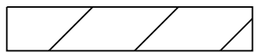
PAVEMENT MARKINGS

	EX	PR
Handicap Symbol		
RR Crossing		
Raised Marker Amber 1 Way		
Raised Marker Amber 2 Way		
Raised Marker Crystal 1 Way		
Two Way Turn Left		
Shoulder Diag. Pattern		
Skip-Dash White		
Skip-Dash Yellow		
Stop Line		
Solid Line		
Double Centerline		
Dotted Lines		

STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS

(Sheet 4 of 9)

STANDARD 000001-07

PAVEMENT MARKINGS (contd.)

	EX	PR
CL 2Ln 2Way RRPM 12.2 m (40') o.c.		
CL 2Ln 2Way RRPM 80' (24.4 m) o.c.		
CL Multilane Div. RRPM 40' (12.2 m) o.c.		
CL Multilane Div. RRPM 80' (24.4 m) o.c.		
CL Multilane Div. Dbl. RRPM 80' (24.4 m) o.c.		
CL Multilane Undiv.		
Two Way Turn Left Line		
Urban Combination Left		
Urban Combination Right		
Urban Left Turn Arrow		
Urban Right Turn Arrow		
Urban Left Turn Only		
Urban Right Turn Only		
Urban Thru Only		

ONLY ONLY ONLY

RAILROAD ITEMS	EX	PR
Abandoned Railroad		
Railroad		
Railroad Point		
Control Box		
Crossing Gate		
Flashing Signal		
Railroad Cant. Mast Arm		
Crossbuck		

REMOVAL ITEMS	EX	PR
Removal Tic		
Bituminous Removal		
Hatch Pattern		
Tree Removal Single		

RIGHT OF WAY ITEMS	EX	PR
Future ROW Corner Monument		
ROW Marker		
ROW Line		
Easement		
Temporary Easement		

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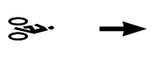
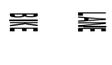
STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS

STANDARD 000001-07

PAVEMENT MARKINGS (contd.)

	EX	PR
Urban U-Turn		
Urban Combined U-Turn		
Rural Combination Left		
Rural Combination Right		
Rural Left Turn Arrow		
Rural Right Turn Arrow		
Rural Left Turn Only	 	 
Rural Right Turn Only	 	 
Rural Thru Only	 	 
Bike Lane Symbol		
Bike Lane Text		
Bike Path Shared		
Bike Shared Roadway		

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STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS

STANDARD 000001-07

RIGHT OF WAY ITEMS (contd.)

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

ROADWAY PLAN ITEMS

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

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PASSED January 1, 2019
ENGINEER OF POLICY AND PROCEDURES

APPROVED January 1, 2019
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ISSUED 1-1-97

ROADWAY PROFILES

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

SIGNING ITEMS

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

SIGNING ITEMS (contd.)

	EX	PR
Reverse Left W1-4L (Half Size)		
Reverse Right W1-4R (Half Size)		
Two Way Traffic Sign W6-3 (Half Size)		
Detour Ahead W20-2(O) (Half Size)		DETOUR AHEAD
Left Lane Closed Ahead W20-5L(O) (Half Size)		LEFT LANE CLOSED AHEAD
Right Lane Closed Ahead W20-5R(O) (Half Size)		RIGHT LANE CLOSED AHEAD
Road Closed Ahead W20-3(O) (Half Size)		ROAD CLOSED AHEAD
Road Construction Ahead W20-1-(O) (Half Size)		ROAD CONSTRUCTION AHEAD
Single Lane Ahead (Half Size)		SINGLE LANE AHEAD
Transition Left W4-2L (Half Size)		
Transition Right W4-2R (Half Size)		

STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS

(Sheet 7 of 9)

STANDARD 000001-07

SIGNING ITEMS (contd.)

	EX	PR
One Way Arrow Lrg. W1-6-(O) (Half Size)		
Two Way Arrow Large W1-7-(O) (Half Size)		
Detour M4-10L-(O) (Half Size)		DETOUR
Detour M4-10R-(O) (Half Size)		DETOUR
One Way Left R6-1L (Half Size)		ONE WAY
One Way Right R6-1R (Half Size)		ONE WAY
Left Turn Lane R3-I100L (Half Size)		LEFT TURN LANE
Keep Left R4-7AL (Half Size)		KEEP LEFT
Keep Left R4-7BL (Half Size)		KEEP LEFT
Keep Right R4-7AR (Half Size)		KEEP RIGHT
Keep Right R4-7BR (Half Size)		KEEP RIGHT
Stop Here On Red R10-6-AL (Half Size)		STOP HERE ON RED
Stop Here On Red R10-6-AR (Half Size)		STOP HERE ON RED
No Left Turn R3-2 (Half Size)		
No Right Turn R3-1 (Half Size)		
Road Closed R11-2 (Half Size)		ROAD CLOSED
Road Closed Thru Traffic R11-2 (Half Size)		ROAD CLOSED TO THRU TRAFFIC

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STRUCTURES ITEMS

	EX	PR
Box Culvert Barrel		
Box Culvert Headwall		
Bridge Pier		
Bridge		
Retaining Wall		
Temporary Sheet Piling		

TRAFFIC SHEET ITEMS

	EX	PR
Cable Number		
Left Turn Green	G	G
Left Turn Yellow	Y	Y
Signal Backplate		
Signal Section 8" (200 mm)		
Signal Section 12" (300 mm)		
Walk/Don't Walk Letters	DW / W	DW / W
Walk/Don't Walk Symbols		

TRAFFIC SIGNAL ITEMS

	EX	PR
Galv. Steel Conduit		
Underground Cable		
Detector Loop Line		
Detector Loop Large		
Detector Loop Small		
Detector Loop Quadrapole		

STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS

(Sheet 8 of 9)

STANDARD 000001-07

TRAFFIC SIGNAL ITEMS (contd.)

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

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ENGINEER OF POLICY AND PROCEDURES
APPROVED January 1, 2019
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

UNDERGROUND UTILITY ITEMS

	EX	PR	ABANDONED
Cable TV	CTV	CTV	CTV
Electric Cable	E	E	E
Fiber Optic	FO	FO	FO
Gas Pipe	G	G	G
Oil Pipe	O	O	O
Sanitary Sewer			
Telephone Cable	T	T	T
Water Pipe	W	W	W

UTILITIES ITEMS

	EX	PR
Controller		
Double Handhole		
Fire Hydrant		
GuyWire or Deadman Anchor		
Handhole		
Heavy Duty Handhole		
Junction Box		
Light Pole		
Manhole		
Monitoring Well (Gasoline)		
Pipeline Warning Sign		
Power Pole		
Power Pole with Light		
Sanitary Sewer Cleanout		
Splice Box Above Ground		
Telephone Splice Box Above Ground		
Telephone Pole		

UTILITY ITEMS (contd.)

	EX	PR
Traffic Signal		
Traffic Signal Control Box		
Water Meter		
Water Meter Valve Box		
Profile Line		
Aerial Power Line	A A	A A

VEGETATION ITEMS

	EX	PR
Deciduous Tree		
Bush or Shrub		
Evergreen Tree		
Stump		
Orchard/Nursery Line		
Vegetation Line		
Woods & Bush Line		

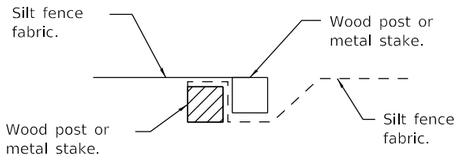
WATER FEATURE ITEMS

	EX	PR
Stream or Drainage Ditch		
Waters Edge		
Water Surface Indicator		
Water Point		
Disappearing Ditch		
Marsh		
Marsh/Swamp Boundary		

STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS

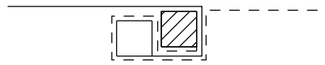
(Sheet 9 of 9)

STANDARD 000001-07



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

STEP 1

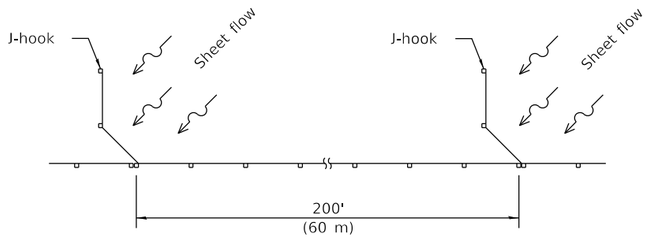


Rotate posts (stakes) together 180° clockwise and drive both posts (stakes) 18 (450) into ground.

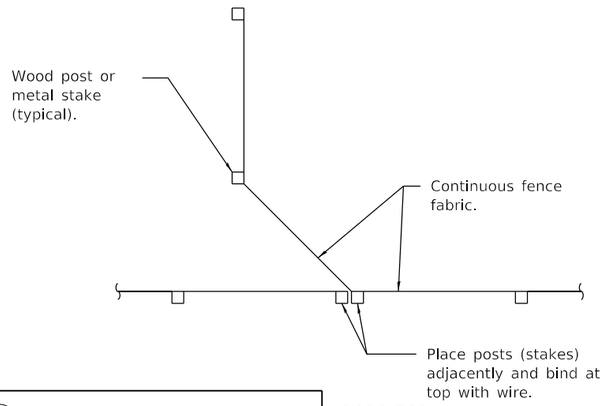
STEP 2

ATTACHING TWO SILT FILTER FENCES

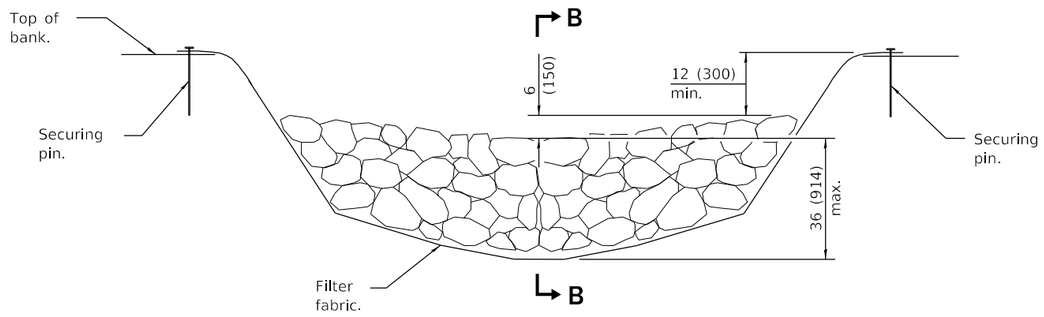
(Not applicable for J-hooks)



SILT FILTER J-HOOK PLACEMENT

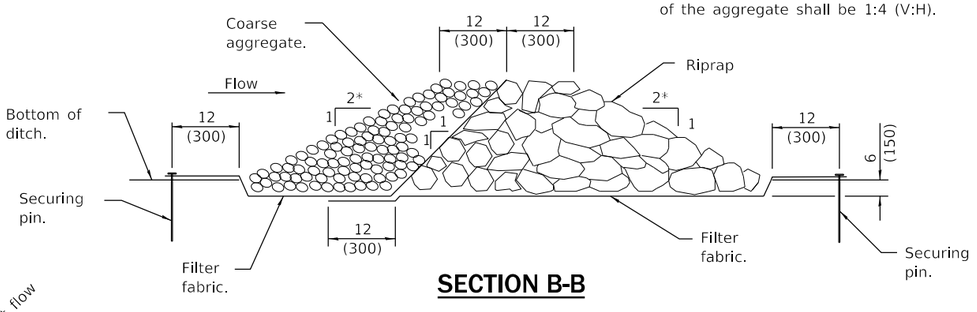


J-HOOK



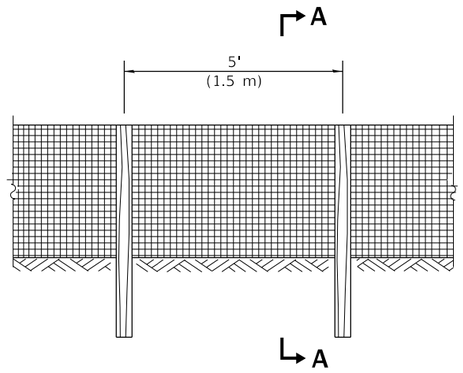
ELEVATION

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



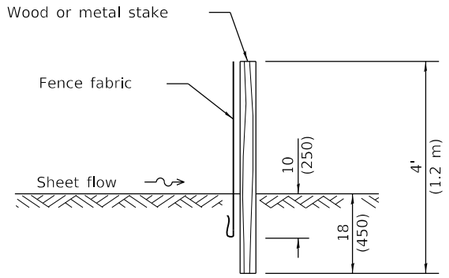
SECTION B-B

AGGREGATE DITCH CHECK

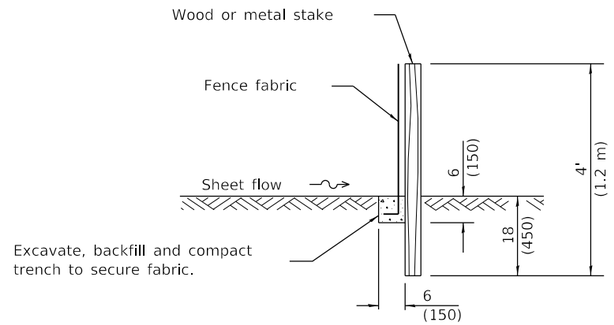


ELEVATION

SILT FILTER FENCE AS A PERIMETER EROSION BARRIER



SLICE METHOD



TRENCH METHOD

SECTION A-A

GENERAL NOTES

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

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

Illinois Department of Transportation

PASSED January 1, 2013
Michael Brand
ENGINEER OF POLICY AND PROCEDURES
APPROVED January 1, 2013
ENGINEER OF DESIGN AND ENVIRONMENT

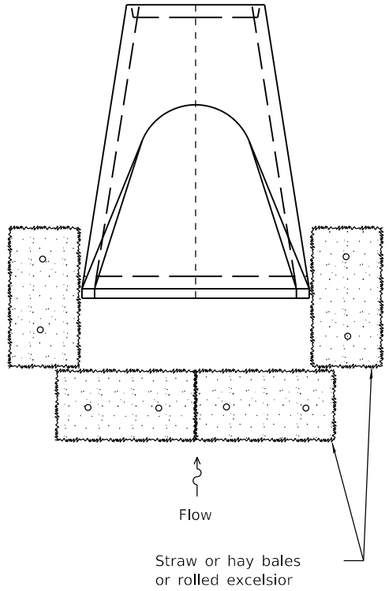
ISSUED 1-1-97

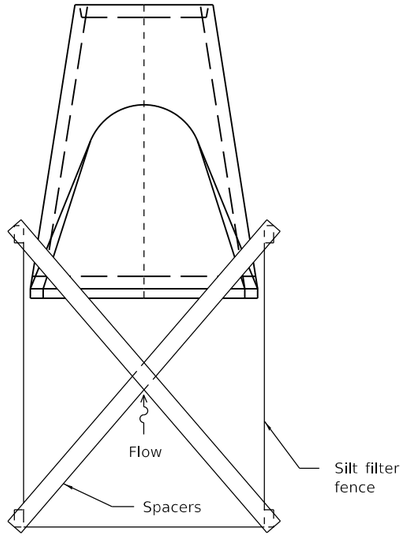
DATE	REVISIONS
1-1-13	Corrected notation for
	flowline (℄) on SEDIMENT
	BASIN ELEVATION.
1-1-12	Omitted hay/straw perimeter
	barrier. Added SLICE METHOD
	to SECTION A-A.

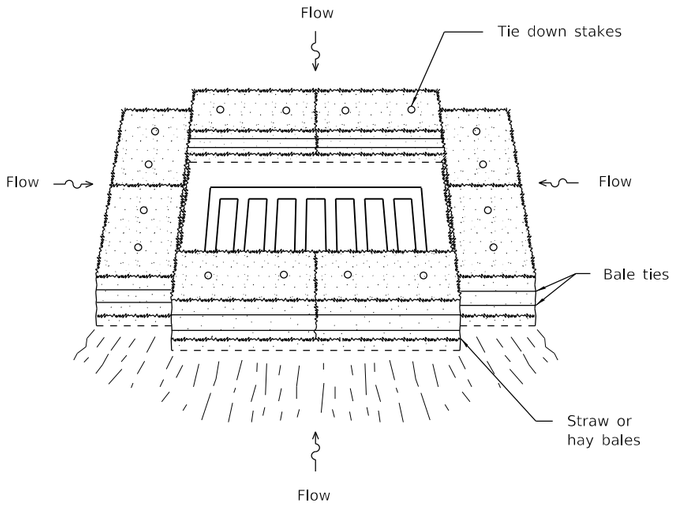
TEMPORARY EROSION CONTROL SYSTEMS

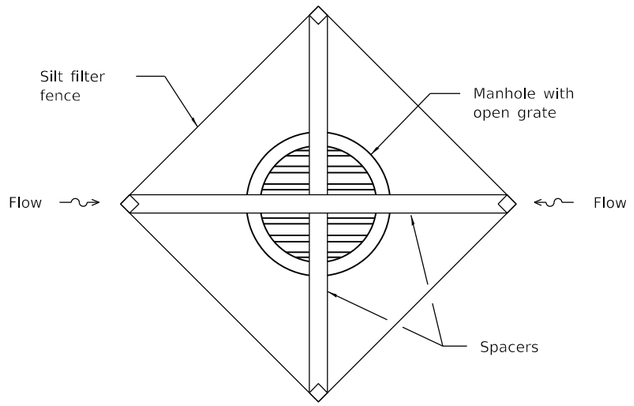
(Sheet 1 of 2)

STANDARD 280001-07

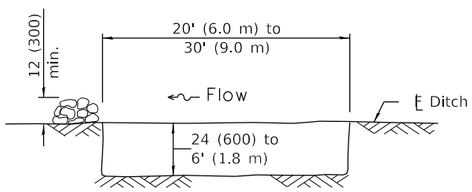






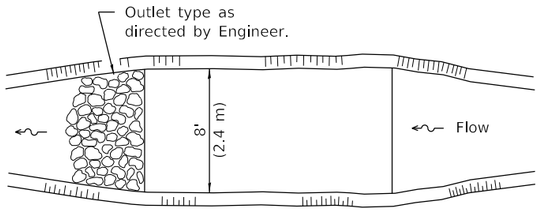


INLET AND PIPE PROTECTION



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

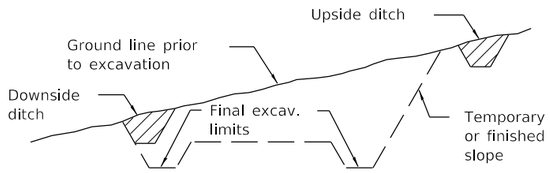
ELEVATION



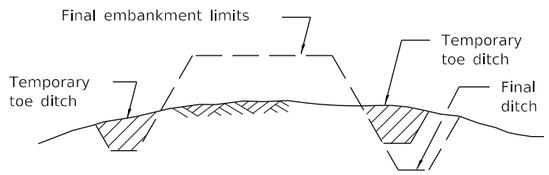
The long dimension should be parallel with the
direction of the flow. Accumulated silt shall be
removed anytime the basins become 75% filled.

PLAN

SEDIMENT BASIN



TYPICAL CUT CROSS-SECTION



TYPICAL FILL CROSS-SECTION

**TEMPORARY DITCHES FOR
CUT & FILL SECTIONS**

Illinois Department of Transportation

PASSED January 1, 2013
Michael Brand
ENGINEER OF POLICY AND PROCEDURES
APPROVED January 1, 2013
ENGINEER OF DESIGN AND ENVIRONMENT

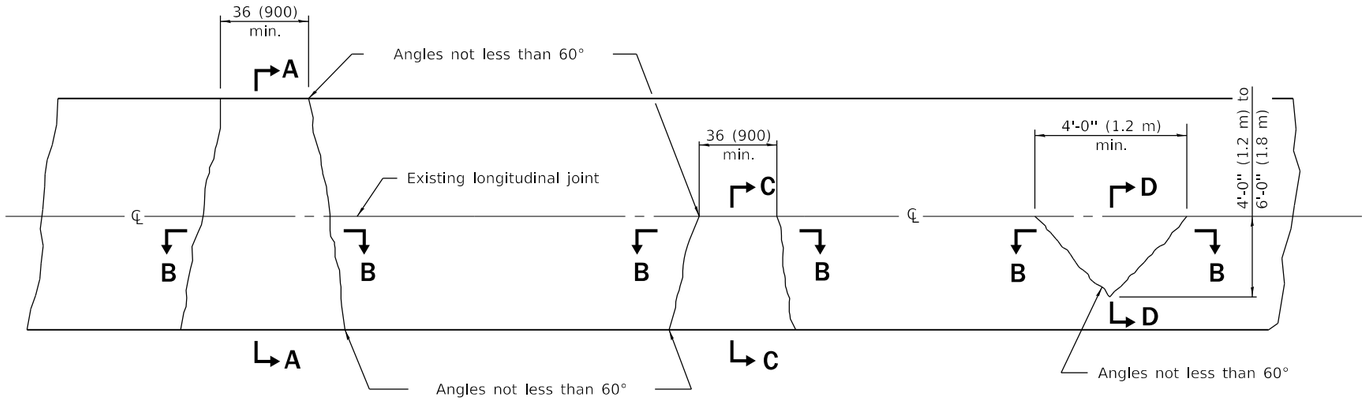
ISSUED 1-1-97

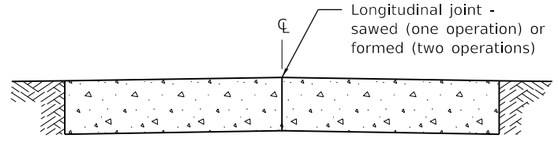
TEMPORARY EROSION CONTROL SYSTEMS

(Sheet 2 of 2)

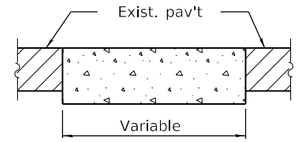
STANDARD 280001-07

CLASS C

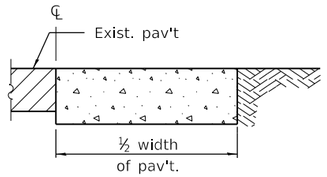




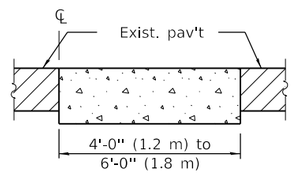
SECTION A-A



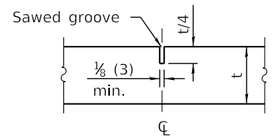
SECTION B-B



SECTION C-C



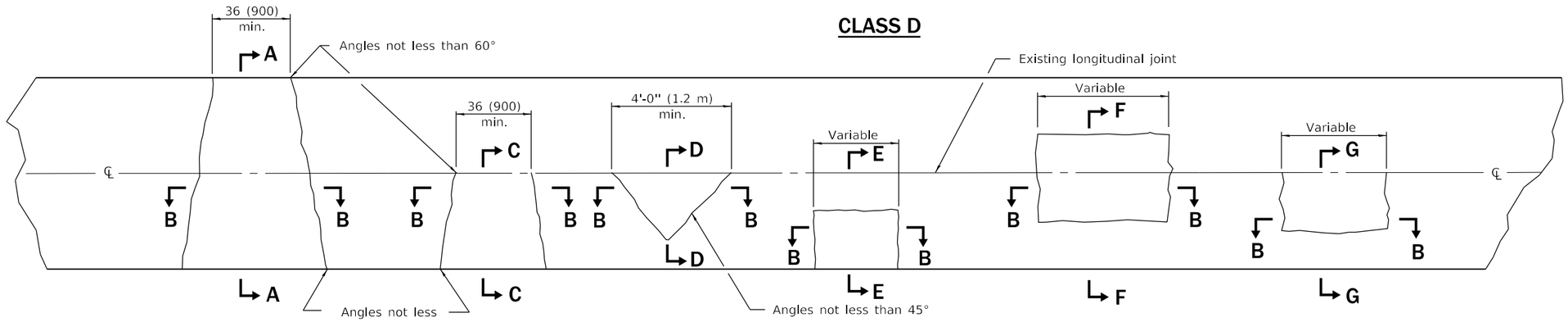
SECTION D-D

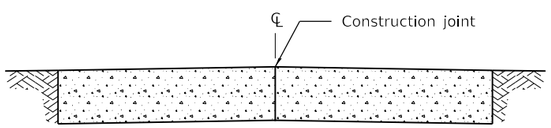


DETAIL OF SAWED CONTRACTION JOINT

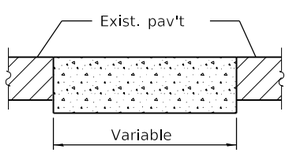
Note:
Longitudinal joints shall be as detailed on Standard 420001, except tie bars are not required for patches 20'-0" (6.0 m) or less in length.

CLASS D

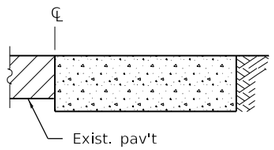




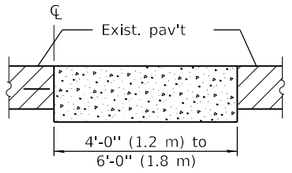
SECTION A-A
(Built in two operations)



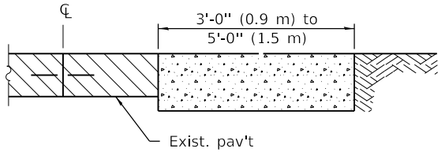
SECTION B-B



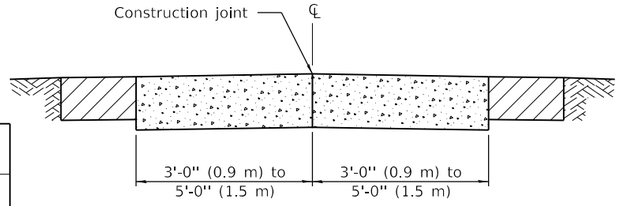
SECTION C-C



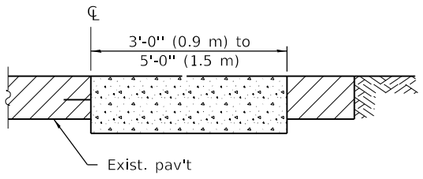
SECTION D-D



SECTION E-E



SECTION F-F
(Built in two operations)



SECTION G-G

GENERAL NOTES

Existing tie bars shall be either cut or removed. Marginal bars shall be cut.

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

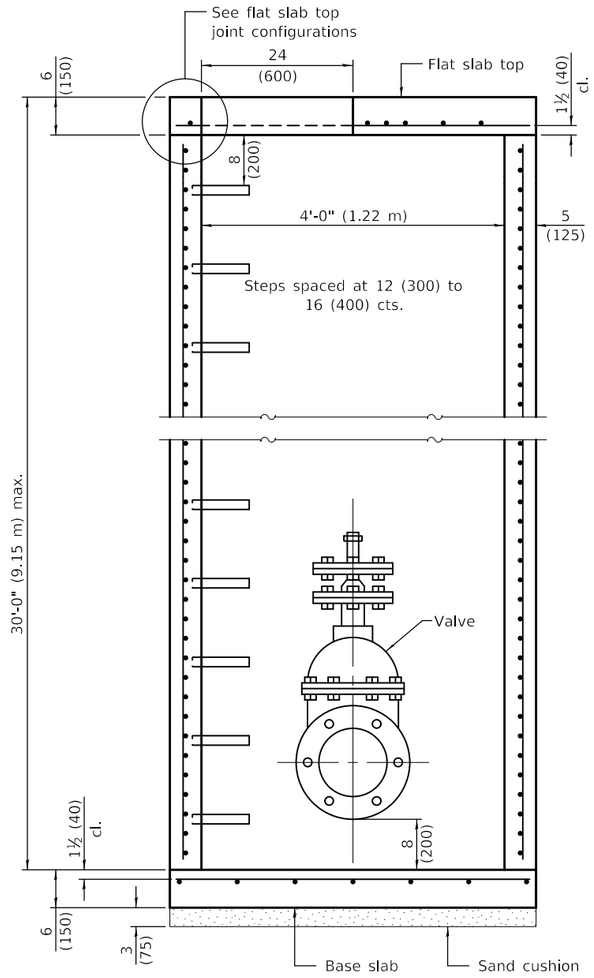
Illinois Department of Transportation

PASSED January 1, 2008
ENGINEER OF POLICY AND PROCEDURES
APPROVED January 1, 2008
ENGINEER OF DESIGN AND ENVIRONMENT
ISSUED 1-1-97

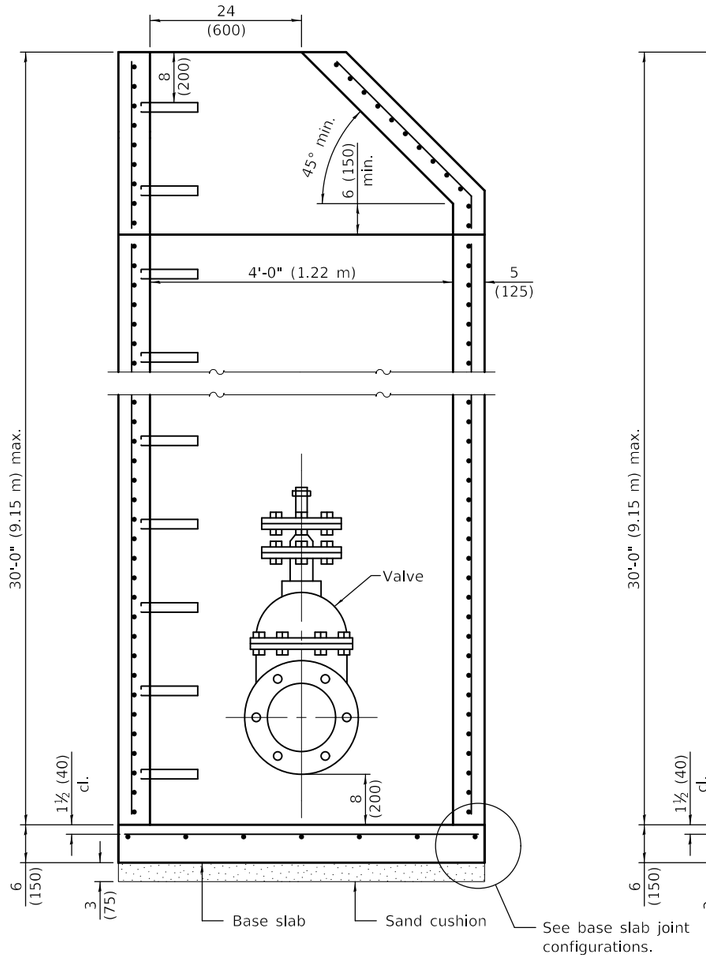
DATE	REVISIONS
1-1-08	Switched units to
	English (metric).
1-1-07	Revised Note for
	Class C patches.

CLASS C and D PATCHES

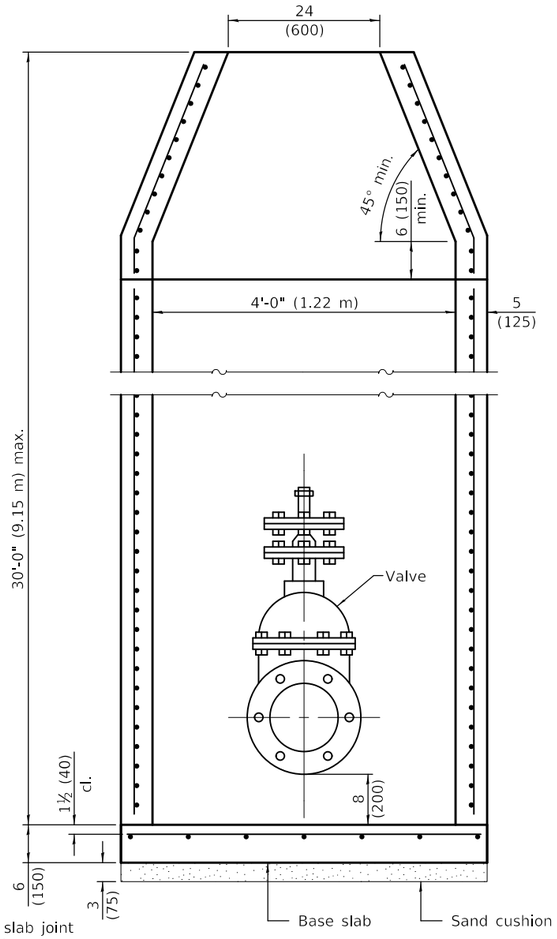
STANDARD 442201-03



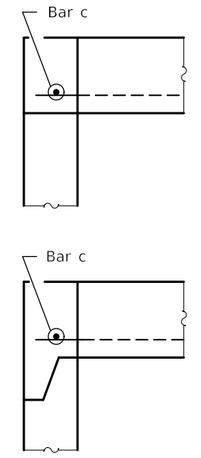
SECTION THRU VALVE VAULT
(Without conical top)



SECTION THRU VALVE VAULT
(With conical top)



SECTION THRU VALVE VAULT
(With concentric conical top)



FLAT SLAB TOP JOINT CONFIGURATIONS
(Shown at access hole)

GENERAL NOTES

Use this standard for water mains ≤ 8 (200).

The manufacturer shall ensure that all precast manhole sections are additionally reinforced where required to resist damage from handling, shipping and installation stresses.

Lifting holes shall be located in the sections as per the manufacturer's recommendations, except as noted.

See Standard 602701 for details of manhole steps.

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

Illinois Department of Transportation

PASSED March 1, 2019
ENGINEER OF POLICY AND PROCEDURES
APPROVED March 1, 2019
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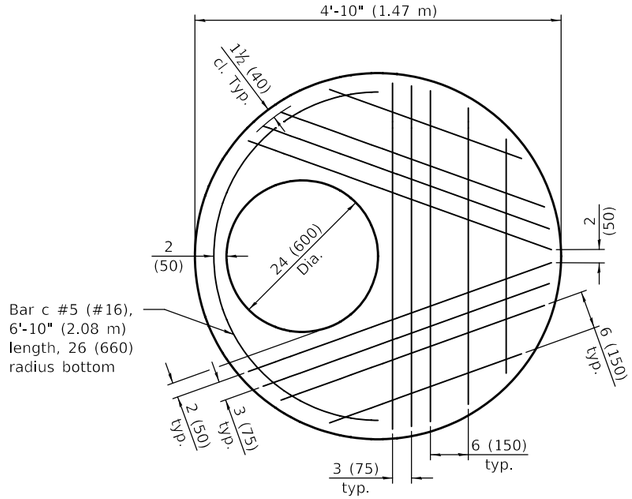
ISSUED 1-1-97

DATE	REVISIONS
3-1-19	Moved wall reinforcement from
	inside face to middle.
1-1-19	Expanded / refined reinforcement
	options. Increased vault depths.

PRECAST VALVE VAULT TYPE A 4' (1.22 m) DIAMETER

(Sheet 1 of 2)

STANDARD 602501-05



PLAN - FLAT SLAB TOP

(Showing layout of reinforcement bars and c bars)

FLAT SLAB TOP REINFORCEMENT

Location	WWR (each direction)		Rebar		
	A_s (min.)	Spacing (max.)	A_s (min.)	Spacing (max.)	Bar Size
Bottom Mat	* 0.62 sq. in./ft. (1312 sq. mm/m)	6 (150)	See plan view for rebar orientation and spacing and this table for bar size		#5 (#16)

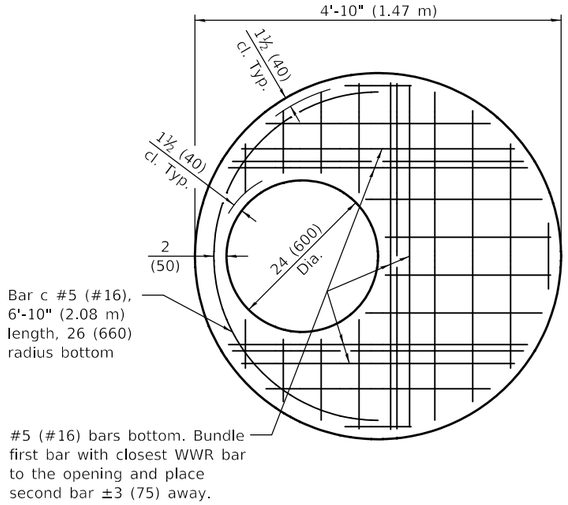
* Only one layer of WWR permitted to avoid congestion.

WALL REINFORCEMENT

Orientation	WWR or Rebar	
	A_s (min.)	Spacing (max.)
Circumferential	0.12 sq. in./ft. (254 sq. mm/m)	6 (150)
Vertical	0.045 sq. in./ft. (95 sq. mm/m)	8 (200)

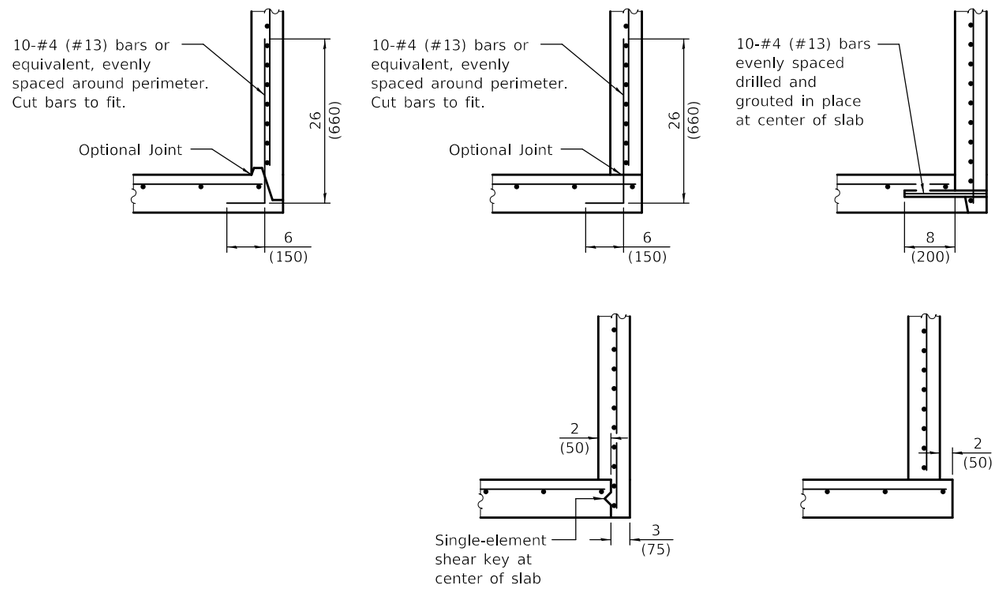
BASE SLAB REINFORCEMENT

Location	Total Height	WWR or Rebar (each direction)	
		A_s (min.)	Spacing (max.)
Top Mat	≤ 20 ft. (6.10 m)	0.24 sq. in./ft. (508 sq. mm/m)	10 (250)
	> 20 ft. (6.10 m)	0.24 sq. in./ft. (508 sq. mm/m)	10 (250)



PLAN - FLAT SLAB TOP

(Showing layout of welded wire reinforcement and c bars)



BASE SLAB JOINT CONFIGURATIONS

SHEAR KEY GEOMETRY

(Reinforcement not shown for clarity)

Illinois Department of Transportation

PASSED March 1, 2019
ENGINEER OF POLICY AND PROCEDURES

APPROVED March 1, 2019
ENGINEER OF DESIGN AND ENVIRONMENT

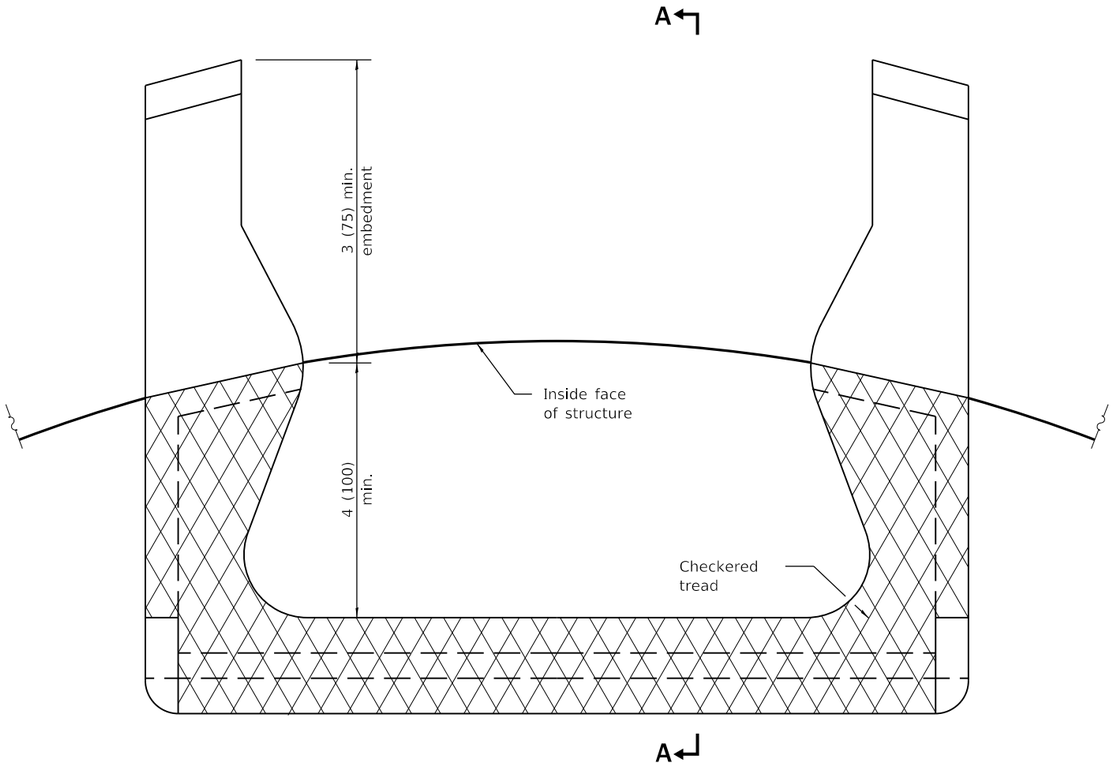
ISSUED 1-1-97

PRECAST VALVE VAULT TYPE A 4' (1.22 m) DIAMETER

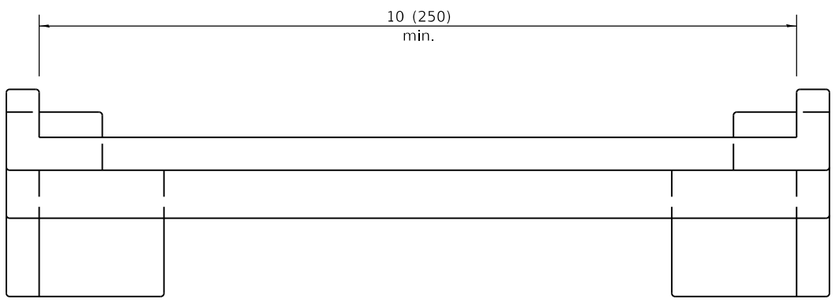
(Sheet 2 of 2)

STANDARD 602501-05

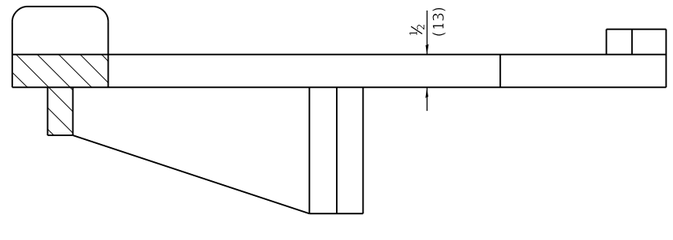
CAST IRON STEPS



PLAN VIEW



ELEVATION VIEW



SECTION A-A

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

Illinois Department of Transportation

PASSED January 1, 2009
ENGINEER OF POLICY AND PROCEDURES
APPROVED January 1, 2009
ENGINEER OF DESIGN AND ENVIRONMENT

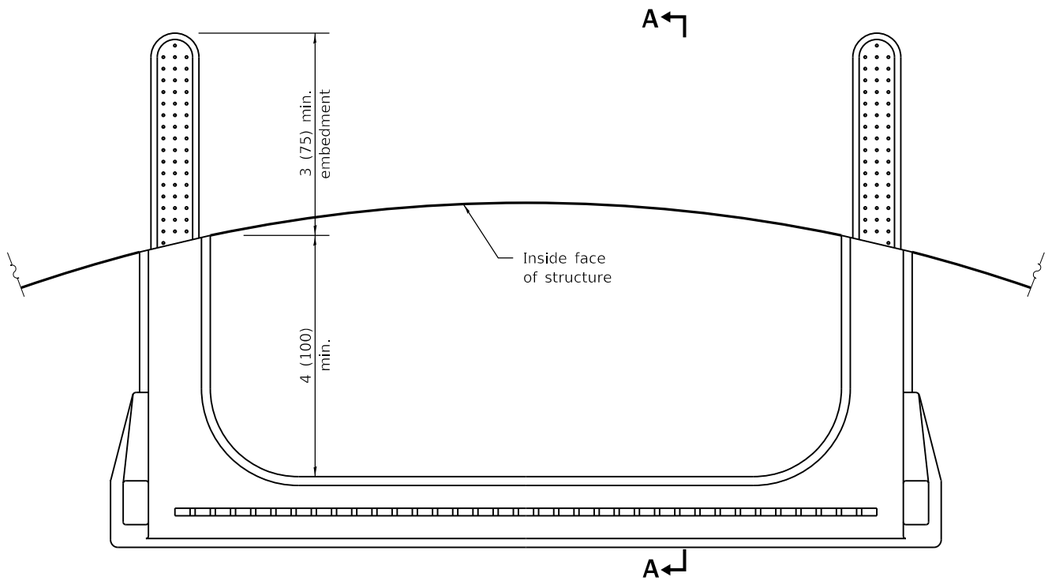
ISSUED 1-1-97

DATE	REVISIONS
1-1-09	Switched units to
	English (metric).
4-1-06	Revised title, drawings,
	and added plastic
	steps on sheet 2.

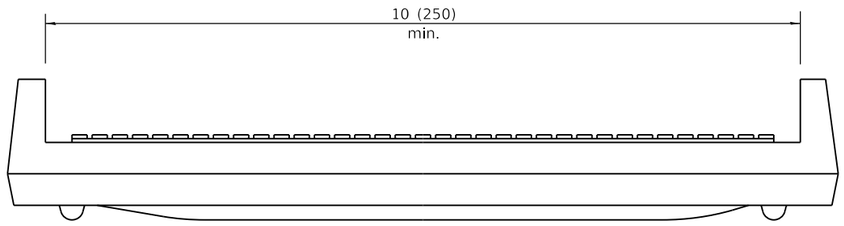
MANHOLE STEPS

(Sheet 1 of 2)

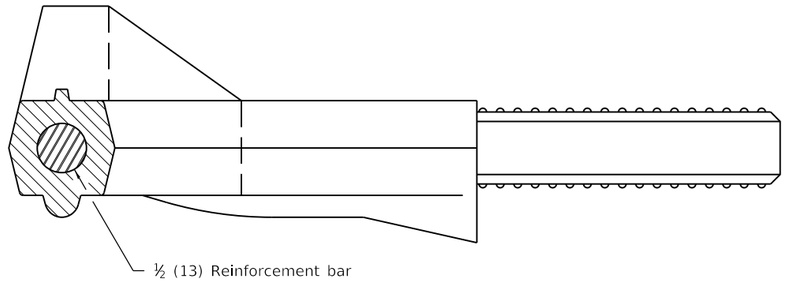
STANDARD 602701-02



PLAN VIEW



ELEVATION VIEW



SECTION A-A

Illinois Department of Transportation

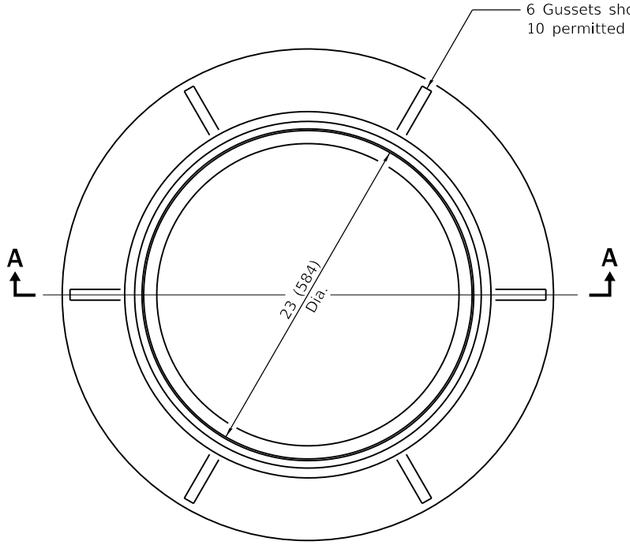
PASSED January 1, 2009
ENGINEER OF POLICY AND PROCEDURES
APPROVED January 1, 2009
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

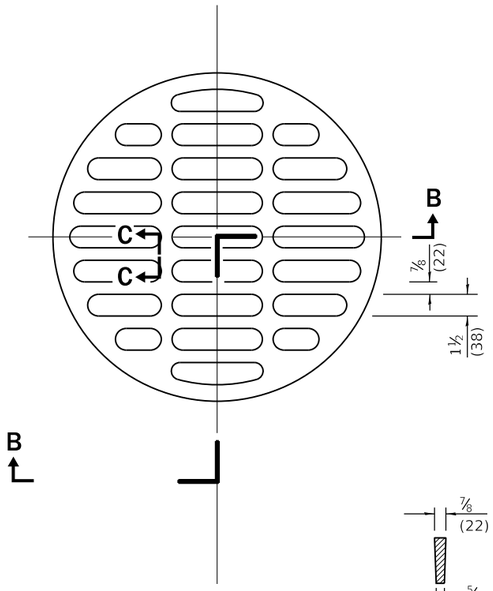
MANHOLE STEPS

(Sheet 2 of 2)

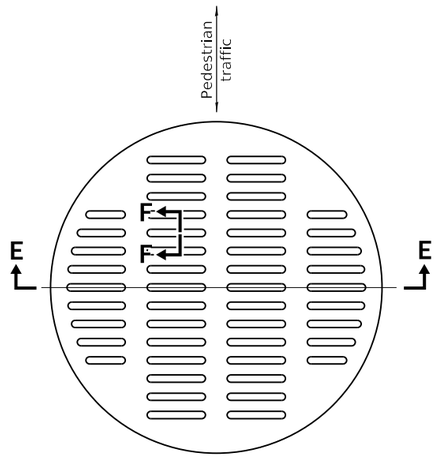
STANDARD 602701-02

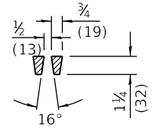


CAST FRAME

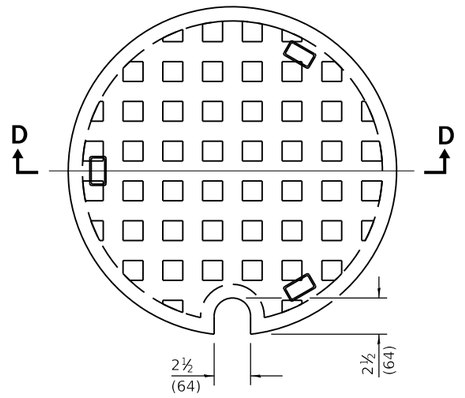


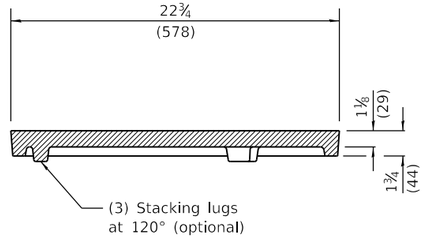
SECTION C-C





SECTION F-F

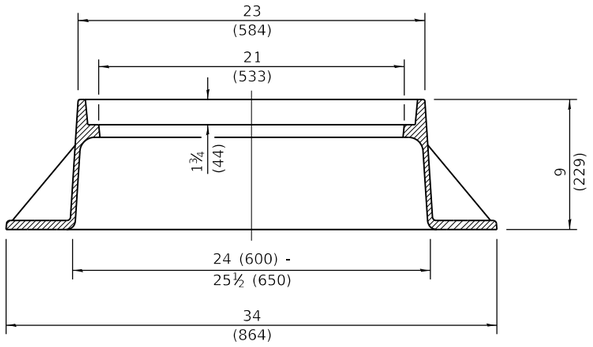




SECTION D-D

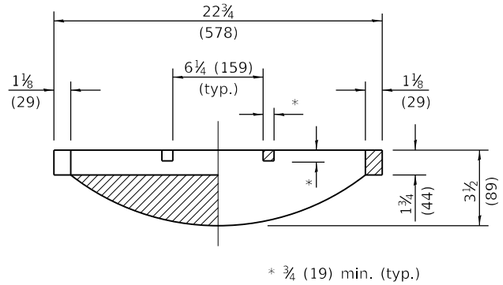
CAST CLOSED LID

Gray Iron Lid



SECTION A-A

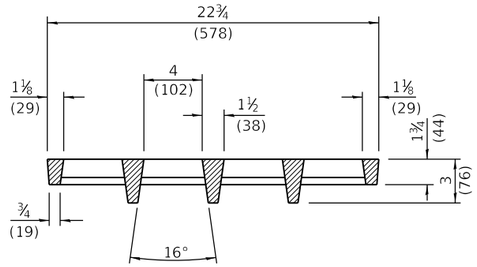
Gray Iron



* ¾ (19) min. (typ.)

SECTION B-B

CAST OPEN LID



SECTION E-E

ADA COMPLIANT CAST OPEN LID

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

Illinois Department of Transportation

PASSED January 1, 2020
ENGINEER OF POLICY AND PROCEDURES

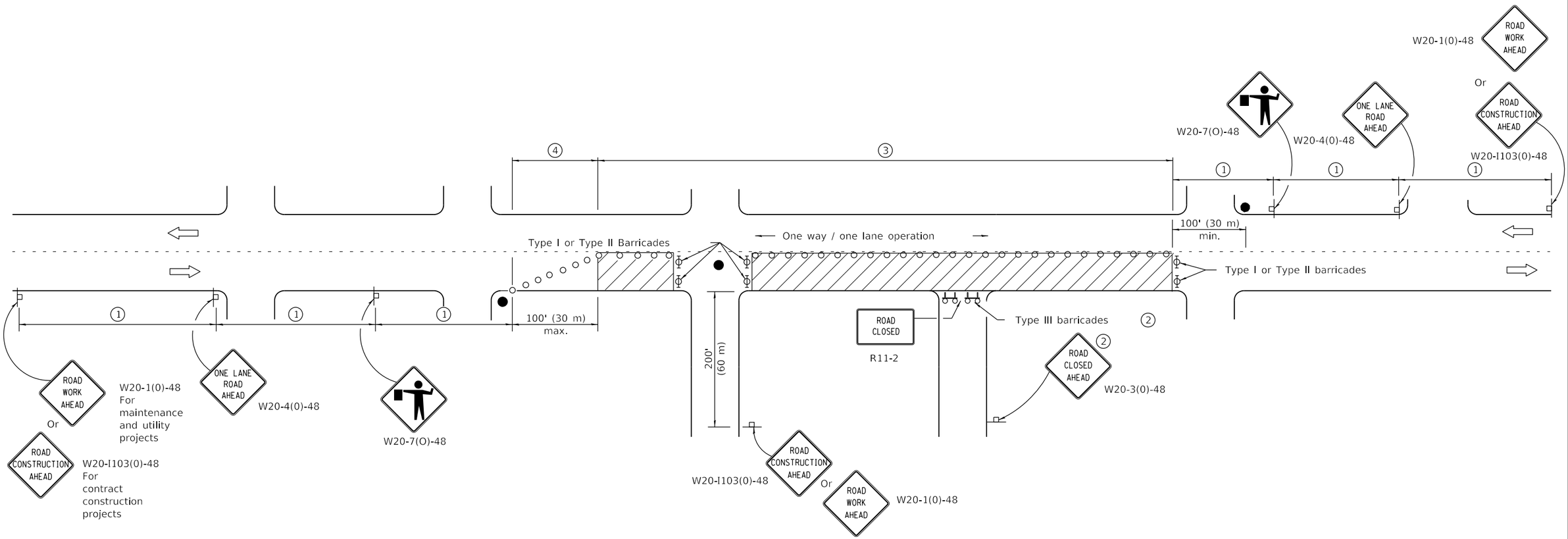
APPROVED January 1, 2020
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

DATE	REVISIONS
1-1-20	Revised dimension in Section B-B
	of cast open lid.
1-1-15	Revised dimensioning of
	frame. Added ADA compliant
	open lid.
1-1-09	Switched units to English (metric).

FRAME AND LIDS TYPE 1

STANDARD 604001-05



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

SYMBOLS

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

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

GENERAL NOTES

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

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

Illinois Department of Transportation

PASSED January 1, 2011
ENGINEER OF SAFETY ENGINEERING

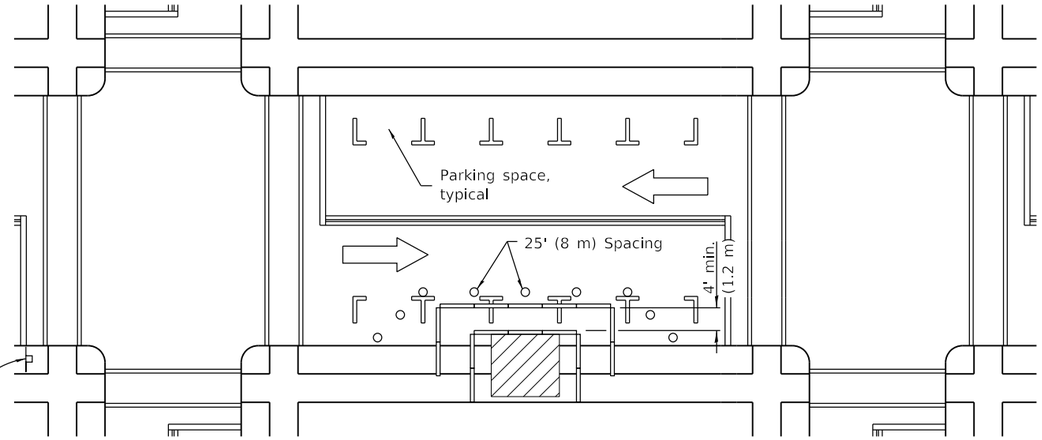
APPROVED January 1, 2011
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

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

URBAN LANE CLOSURE, 2L, 2W, UNDIVIDED

STANDARD 701501-06



① ROAD CONSTRUCTION AHEAD

W20-I103(0)-48 for contract construction projects

Or

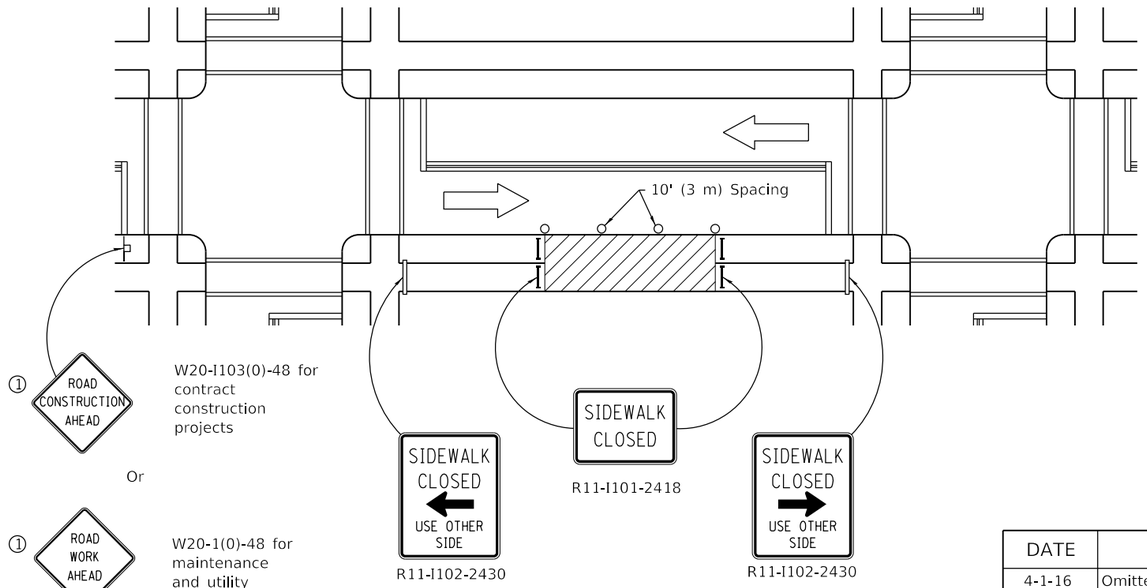
① ROAD WORK AHEAD

W20-1(0)-48 for maintenance and utility projects

SIDEWALK DIVERSION

SYMBOLS

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



① ROAD CONSTRUCTION AHEAD

W20-I103(0)-48 for contract construction projects

Or

① ROAD WORK AHEAD

W20-1(0)-48 for maintenance and utility projects

SIDEWALK CLOSURE

① Omit whenever duplicated by road work traffic control.

GENERAL NOTES

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

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

Temporary facilities shall be detectable and accessible.

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

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

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

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

Illinois Department of Transportation

PASSED April 1, 2016
ENGINEER OF SAFETY ENGINEERING

APPROVED April 1, 2016
ENGINEER OF DESIGN AND ENVIRONMENT

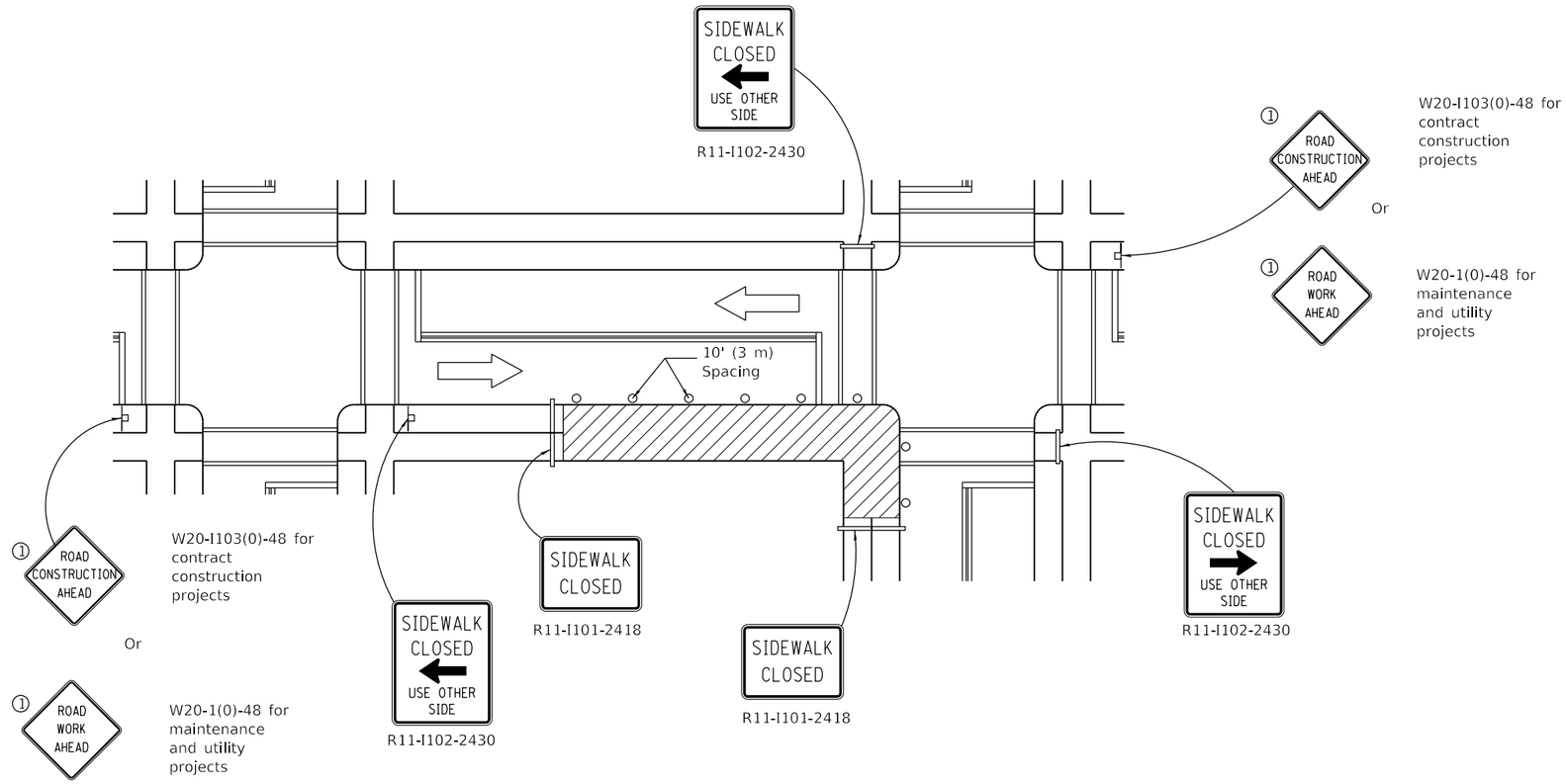
ISSUED 1-1-97

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

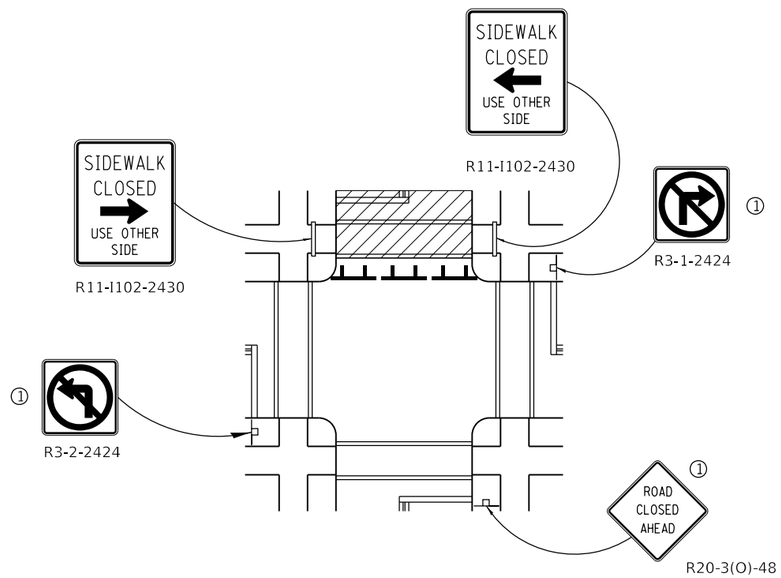
SIDEWALK, CORNER OR CROSSWALK CLOSURE

(Sheet 1 of 2)

STANDARD 701801-06



CORNER CLOSURE



CROSSWALK CLOSURE

Illinois Department of Transportation

PASSED April 1, 2016
ENGINEER OF SAFETY ENGINEERING

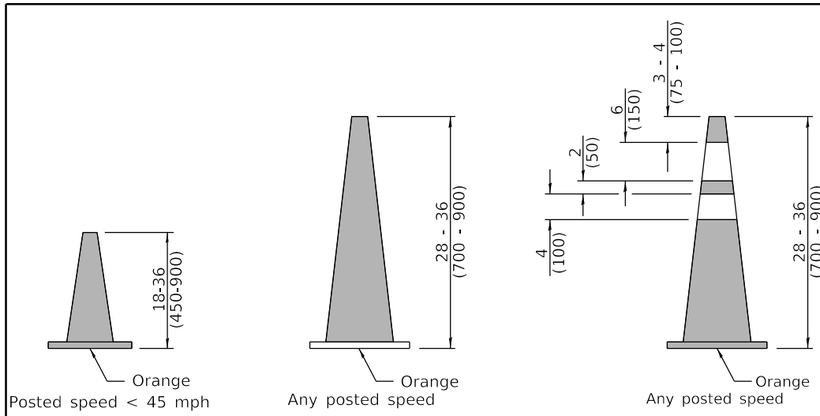
APPROVED April 1, 2016
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

SIDEWALK, CORNER OR CROSSWALK CLOSURE

(Sheet 2 of 2)

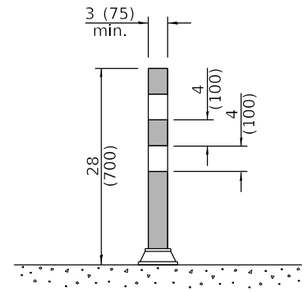
STANDARD 701801-06



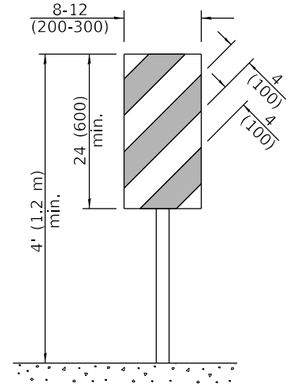
DAYTIME USE

DAY OR NIGHTTIME USE

CONES

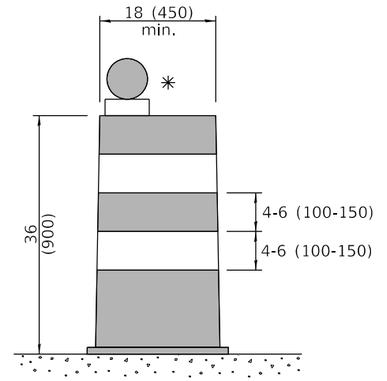


TUBULAR MARKER

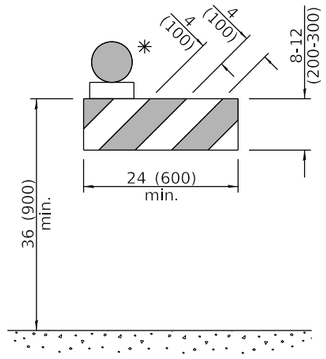


VERTICAL PANEL

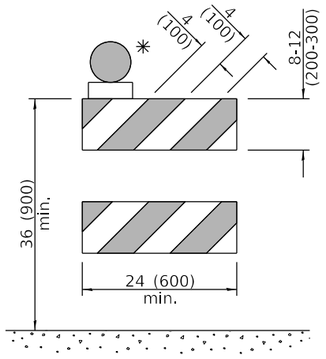
POST MOUNTED



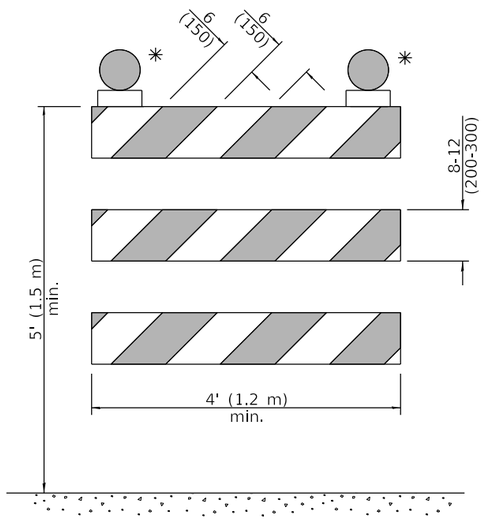
DRUM



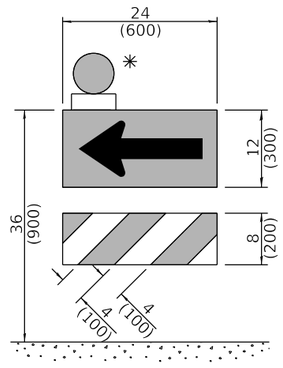
TYPE I BARRICADE



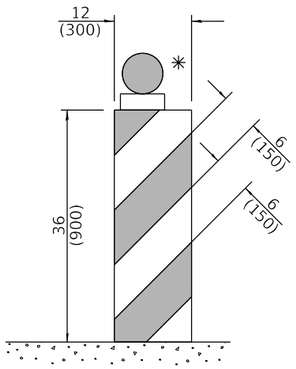
TYPE II BARRICADE



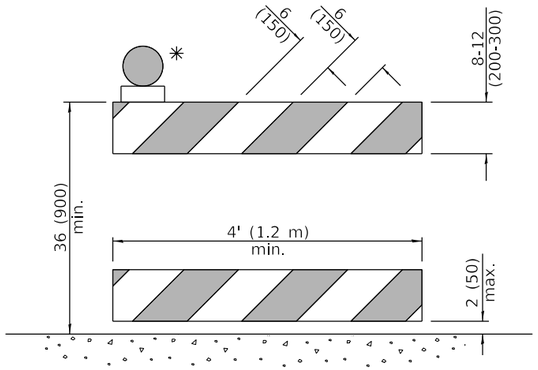
TYPE III BARRICADE



DIRECTION INDICATOR BARRICADE



VERTICAL BARRICADE



DETECTABLE PEDESTRIAN CHANNELIZING BARRICADE

✳ Warning lights (if required)

GENERAL NOTES

All heights shown shall be measured above the pavement surface.

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

Illinois Department of Transportation

APPROVED January 1, 2019
ENGINEER OF SAFETY PROG. AND ENGINEERING

APPROVED January 1, 2019
ENGINEER OF DESIGN AND ENVIRONMENT

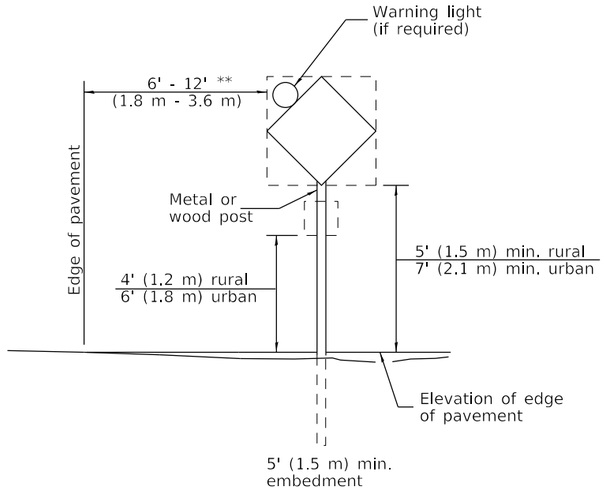
ISSUED 1-1-13

DATE	REVISIONS
1-1-19	Revised cone usage and
	added cones >36" (900 m) height.
1-1-18	Revised END WORK ZONE
	SPEED LIMIT sign from
	orange to white background.

TRAFFIC CONTROL DEVICES

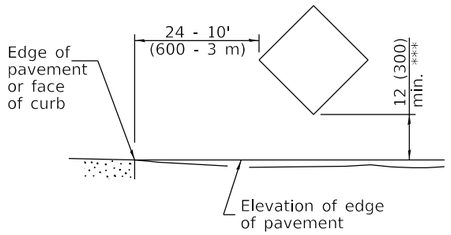
(Sheet 1 of 3)

STANDARD 701901-08



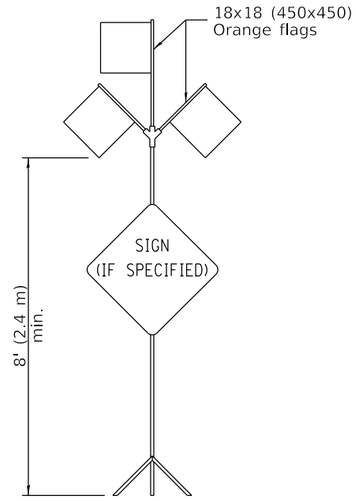
POST MOUNTED SIGNS

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



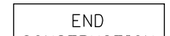
SIGNS ON TEMPORARY SUPPORTS

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



HIGH LEVEL WARNING DEVICE

G20-I104(0)-6036



G20-I105(0)-6024

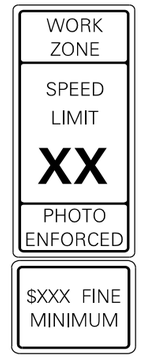
This signing is required for all projects 2 miles (3200 m) or more in length.

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

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

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

WORK LIMIT SIGNING



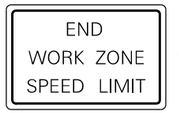
W21-III5(0)-3618

R2-1-3648

R10-I108p-3618 ****

R2-I106p-3618

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

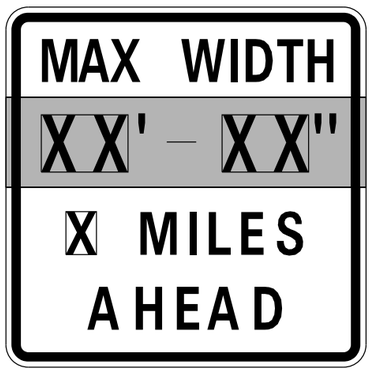


G20-I103-6036

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

HIGHWAY CONSTRUCTION SPEED ZONE SIGNS

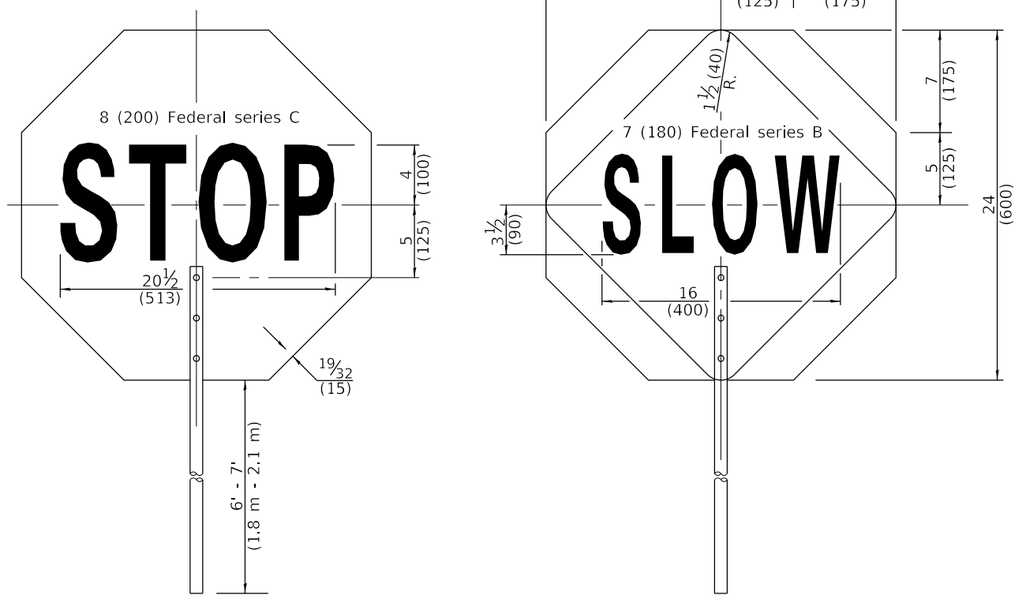
**** R10-I108p shall only be used along roadways under the juristiction of the State.



W12-I103-4848

WIDTH RESTRICTION SIGN

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



FLAGGER TRAFFIC CONTROL SIGN

Illinois Department of Transportation

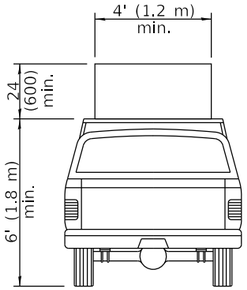
APPROVED January 1, 2019
ENGINEER OF SAFETY PROG. AND ENGINEERING

APPROVED January 1, 2019
ENGINEER OF DESIGN AND ENVIRONMENT

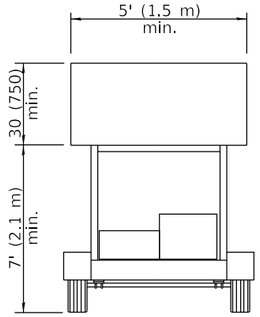
ISSUED 1-1-13

TRAFFIC CONTROL DEVICES

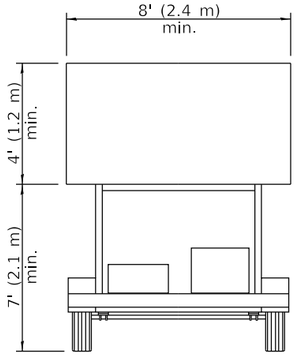
STANDARD 701901-08



**TYPE A
ROOF
MOUNTED**

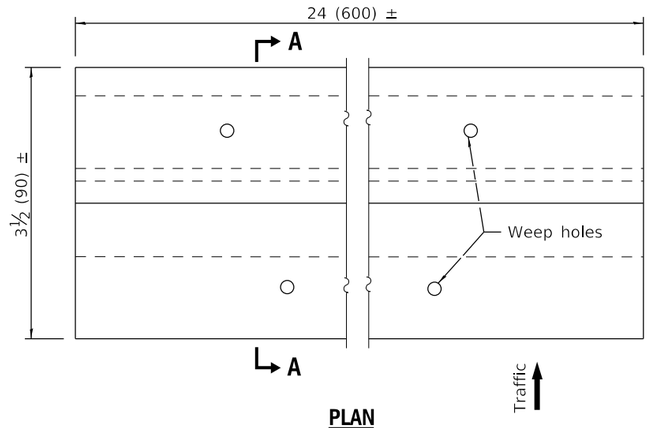


**TYPE B
ROOF OR TRAILER
MOUNTED**

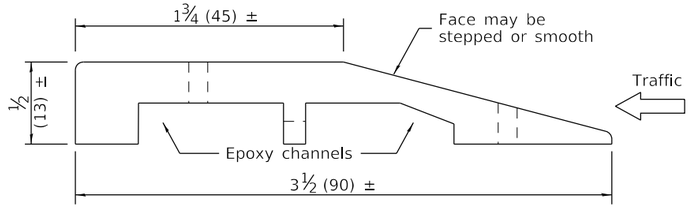


**TYPE C
TRAILER
MOUNTED**

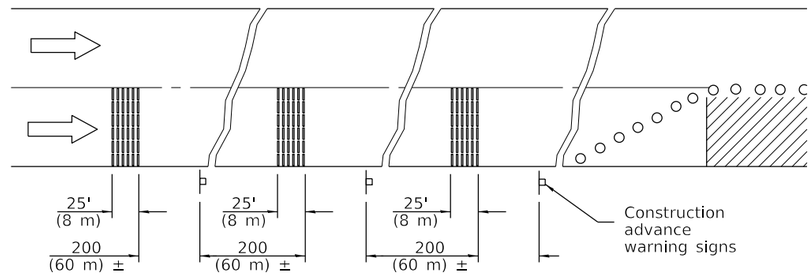
ARROW BOARDS

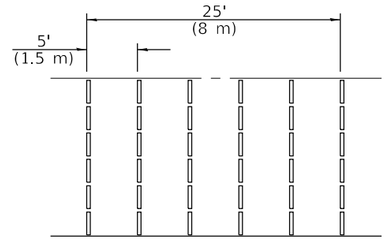


PLAN



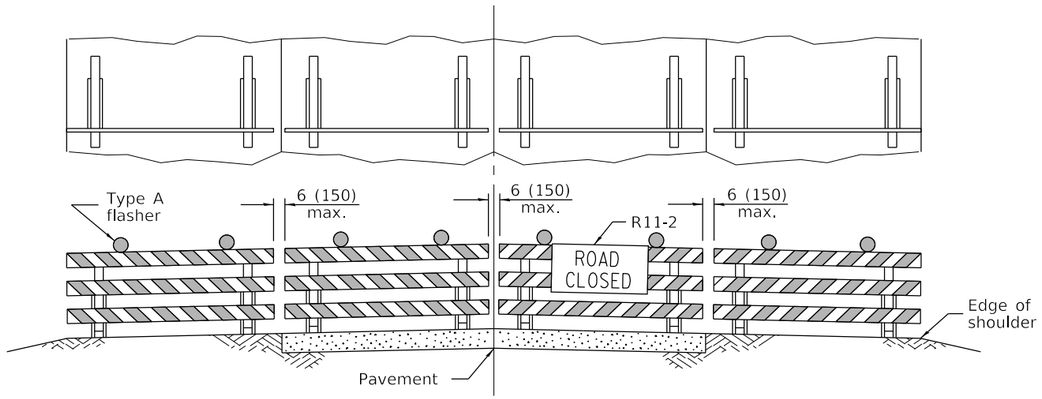
SECTION A-A





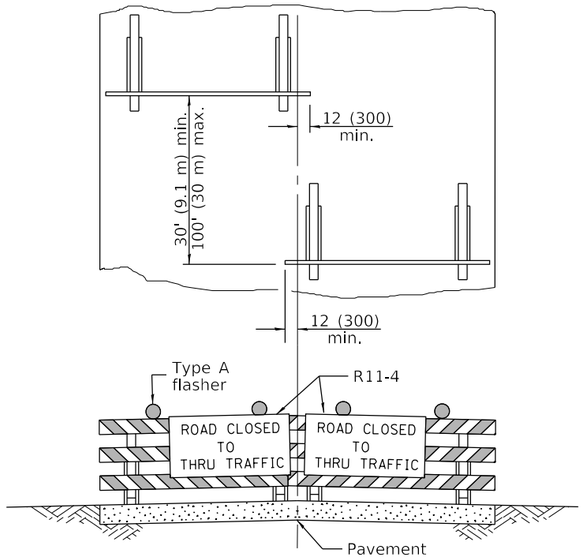
TYPICAL INSTALLATION

TEMPORARY RUMBLE STRIPS



ROAD CLOSED TO ALL TRAFFIC

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



ROAD CLOSED TO THRU TRAFFIC

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

TYPICAL APPLICATIONS OF TYPE III BARRICADES CLOSING A ROAD

Illinois Department of Transportation

APPROVED January 1, 2019
ENGINEER OF SAFETY PROG. AND ENGINEERING

APPROVED January 1, 2019
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-13

TRAFFIC CONTROL DEVICES

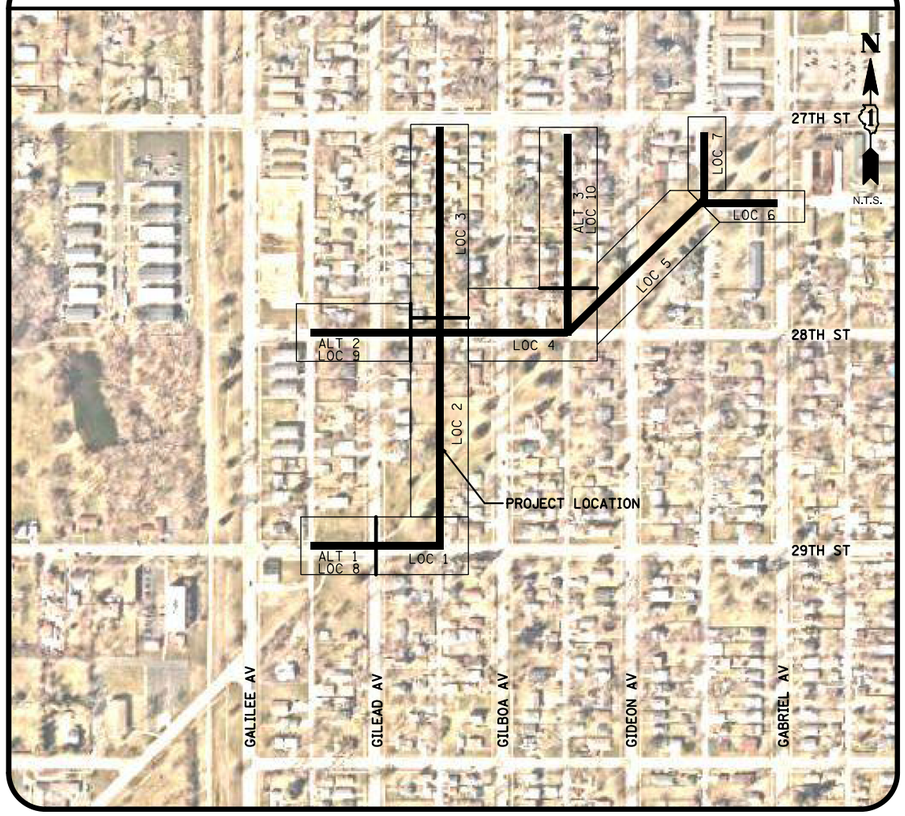
(Sheet 3 of 3)

STANDARD 701901-08

CITY OF ZION
2023 WATER MAIN REPLACEMENT

INDEX

LOCATION / VICINITY MAP



IDOT STANDARDS

000001-08	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
280001-07	TEMPORARY EROSION CONTROL SYSTEMS
442201-03	CLASS C AND D PATCHES
602501-06	PRECAST VALVE VAULT, TYPE A, 4' DIAMETER
602701-02	MANHOLE STEPS
604001-05	FRAME AND LIDS TYPE 1
701501-06	URBAN LANE CLOSURE, 2L, 2W, UNDIVIDED
701801-06	SIDEWALK, CORNER OR CROSSWALK CLOSURE
701901-08	TRAFFIC CONTROL DEVICES

BENCHMARK

SEE ALIGNMENT, TIES, AND BENCHMARKS SHEET

LOCATION

CALL JULIE 811
WITH THE FOLLOWING:
COUNTY LAKE
CITY-TOWNSHIP ZION
48 HOURS BEFORE YOU DIG.
EXCLUDING SAT., SUN., & HOLIDAYS

THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR JOB SITE SAFETY AS WELL AS SUPERVISION/DIRECTION AND MEANS/METHODS OF CONSTRUCTION

LEE M. FELL
062-053708
REGISTERED PROFESSIONAL ENGINEER
OF
ILLINOIS

ENGINEER — DATE 10/24/2023

LEE M. FELL
ILLINOIS REGISTRATION No. 062-053708
EXPIRATION DATE: 11/30/23

CONSTRUCTABILITY REVIEW BY

BILL SPRAGUE — REVIEWER — DATE 7/17/2023

CLIENT :

CITY OF ZION

CHRISTOPHER B. BURKE ENGINEERING, LTD.
9575 W. Higgins Road, Suite 600
Rosemont, Illinois 60018
(847) 823-0500
PROFESSIONAL DESIGN FIRM NO. 184-001175-0014
EXPIRATION DATE: 04/30/23

10/24/2023 dkirkpatrick

FILE NAME: \\fbg.net\CBBEL\CBBELDFT\ZION\230026\CIVIL\CVR_230026.sht

GENERAL NOTES

1. SPECIFICATIONS, STANDARDS AND SPECIAL PROVISIONS

(A) ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", ADOPTED JANUARY 1, 2022; THE "SUPPLEMENTAL SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS", ADOPTED JANUARY 1, 2023; THE LATEST EDITION OF THE "ILLINOIS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS", (IMUTCD); "THE STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION IN ILLINOIS" EIGHTH EDITION ADOPTED 2020, AVAILABLE FROM THE ILLINOIS SOCIETY OF PROFESSIONAL ENGINEERS, THE ILLINOIS MUNICIPAL LEAGUE, OR THE UNDERGROUND CONTRACTORS ASSOCIATION, THE "DETAILS" IN THE PLANS AND THE "SPECIAL PROVISIONS" INCLUDED IN THE CONTRACT DOCUMENTS.

(B) ANY REFERENCE TO STANDARDS THROUGHOUT THE PLANS OR SPECIAL PROVISIONS SHALL BE INTERPRETED AS THE LATEST IDOT STANDARD.

(C) ALL TRAFFIC CONTROL AND OTHER ADVISORY SIGNS NEEDED FOR CONSTRUCTION ARE TO BE FURNISHED BY THE CONTRACTOR IN ACCORDANCE WITH SECTION 700 OF THE STANDARD SPECIFICATIONS.

2. UTILITIES

(A) THE CONTRACTOR SHALL COOPERATE WITH THE CITY IN ANY UNDERGROUND UTILITY CONSTRUCTION WHICH THE CITY MAY WANT TO PLACE DURING THE CONTRACTOR'S OPERATIONS.

(B) THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE OWNERS OF ALL EXISTING FACILITIES SO THAT THE UTILITIES AND THEIR APPURTENANCES MAY BE LOCATED AND ADJUSTED OR MOVED, IF NECESSARY, PRIOR TO THE START OF CONSTRUCTION OPERATIONS. THE CONTRACTOR SHALL COOPERATE WITH ALL UTILITY OWNERS AS PROVIDED FOR IN THE STANDARD SPECIFICATIONS.

(C) BEFORE STARTING ANY EXCAVATING, THE CONTRACTOR SHALL CALL "J.U.L.I.E." AT 800-892-0123 FOR FIELD LOCATIONS OF BURIED ELECTRIC, TELEPHONE, CABLE AND GAS FACILITIES AND THE CITY OF ZION PUBLIC WORKS DEPT. AT 847-746-4050 FOR FIELD LOCATIONS OF BURIED WATER AND STORM FACILITIES (48-HOUR ADVANCE NOTIFICATION IS REQUIRED).

(D) THE APPROXIMATE LOCATIONS OF EXISTING UTILITIES ARE SHOWN ON THE DRAWINGS ACCORDING TO INFORMATION OBTAINED FROM UTILITY COMPANIES AND SURVEYS. HOWEVER, THE CITY OF ZION DOES NOT GUARANTEE THE COMPLETENESS OR ACCURACY OF THE INFORMATION REGARDING UTILITIES, EITHER PUBLIC OR PRIVATE SUCH AS SEWERS, GAS AND WATER MAINS, TELEPHONE AND ELECTRICAL DUCT LINES, MANHOLES, CATCH BASINS, AND SIMILAR STRUCTURES. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF ALL UTILITIES THAT MAY INTERFERE WITH CONSTRUCTION OPERATIONS AND REPORT TO THE ENGINEER OMISSIONS AND DIFFERENCES FROM THE LOCATIONS SHOWN ON THE DRAWINGS. THE CONTRACTOR SHALLTO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH ARE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES. NOTIFY THE ENGINEER OF ANY CONFLICTS BETWEEN THE PROPOSED WATER MAIN LOCATIONS AND EXISTING UTILITY FACILITIES AT LEAST 3 WORKING DAYS PRIOR TO INSTALLATION OF THE WATER MAINS. SIZES OF EXISTING WATER MAINS WERE DETERMINED FROM CITY OF ZION WATER MAIN ATLASES AND PLANS, AND MAY NOT REPRESENT ACTUAL WATER MAIN SIZES. CONTRACTOR SHALL HAVE AN ADEQUATE NUMBER OF FITTINGS, SLEEVES, TO COMPLETE THE WORK WITHOUT DELAYS DUE TO DIFFERING WATER MAIN PIPE SIZES.

(E) THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL UNDERGROUND OR SURFACE UTILITIES EVEN THOUGH THEY MAY NOT BE SHOWN ON THE PLANS. ANY UTILITY THAT IS DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE ENGINEER, THE CITY AND THE UTILITY OWNER. THIS WORK SHALL BE SOLELY AT THE CONTRACTORS EXPENSE.

(F) COORDINATION OF ALL UTILITY WORK INVOLVED IN THE CONSTRUCTION AREA WILL BE DISCUSSED AT THE PRECONSTRUCTION CONFERENCE.

3. STAKING

(A) THE CONTRACTOR SHALL PROTECT AND CAREFULLY PRESERVE ALL SECTION OR SUBSECTION MONUMENTS OR PROPERTY OR REFERENCE MARKERS UNTIL THE CITY, HIS AGENT OR AN AUTHORIZED SURVEYOR HAS WITNESSED OR OTHERWISE REFERENCED THEIR LOCATIONS.

4. STORM SEWER

(A) WHENEVER DURING CONSTRUCTION OPERATIONS ANY LOOSE MATERIAL IS DEPOSITED IN THE FLOW LINE OF DRAINAGE STRUCTURES SUCH THAT THE NATURAL FLOW OF WATER IS OBSTRUCTED, IT SHALL BE REMOVED AT THE CLOSE OF EACH WORKING DAY. AT THE CONCLUSION OF CONSTRUCTION OPERATIONS, ALL UTILITY STRUCTURES SHALL BE FREE FROM DIRT AND DEBRIS. THE WORK SPECIFIED ABOVE WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE COST FOR TRAFFIC CONTROL AND PROTECTION.

(B) WHEN EXISTING DRAINAGE FACILITIES ARE DISTURBED, THE CONTRACTOR SHALL PROVIDE AND MAINTAIN TEMPORARY OUTLETS AND CONNECTIONS FOR ALL PRIVATE OR PUBLIC DRAINS, SEWERS OR CATCH BASINS. HE SHALL PROVIDE FACILITIES TO TAKE IN ALL STORM WATER WHICH WILL BE RECEIVED BY THESE DRAINS AND SEWERS, AND DISCHARGE THE SAME. HE SHALL PROVIDE AND MAINTAIN AN EFFICIENT PUMPING PLANT, IF NECESSARY, AND A TEMPORARY OUTLET, AND BE PREPARED AT ALL TIMES TO DISPOSE OF THE WATER RECEIVED FROM THESE TEMPORARY CONNECTIONS UNTIL SUCH TIME AS THE PERMANENT CONNECTIONS WITH SEWERS ARE BUILT AND IN SERVICE. THIS WORK WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE COST FOR TRAFFIC CONTROL AND PROTECTION.

(C) THE GRADING AND CONSTRUCTION OF THE PROPOSED IMPROVEMENTS SHALL NOT CAUSE PONDING OF STORM SEWER.

(D) THE COST OF CONNECTING PROPOSED STORM SEWERS TO EXISTING STORM SEWER INCLUDING NON-SHEAR, FLEXIBLE, STAINLESS STEEL BANDED COUPLINGS AND CONNECTING PROPOSED STORM SEWER TO EXISTING STRUCTURES SHALL BE CONSIDERED INCLUDED IN THE CONTRACT UNIT PRICE FOR STORM SEWERS OF THE TYPE AND SIZE REQUIRED.

(E) WHEN THE REQUIRED VERTICAL AND HORIZONTAL CLEARANCES, AS SPECIFIED BY THE IEPA, BETWEEN PROPOSED STORM SEWER AND EXISTING OR PROPOSED WATER MAINS CANNOT BE MET, THE STORM SEWER PIPE SHALL BE REPLACED WITH DUCTILE IRON PIPE AS SPECIFIED IN THE SPECIAL PROVISIONS FOR WATER MAIN. THIS PIPE WILL BE PAID FOR AS "STORM SEWER, (WATER MAIN REQUIREMENTS)" OF THE SIZE REQUIRED.

5. WATER MAIN

(A) NOTIFY THE NORTH SHORE SANITARY DISTRICT AT 847-623-6060 AND THE CITY OF ZION AT 847-746-4050 AT LEAST 48 HOURS PRIOR TO THE START OF CONSTRUCTION

(B) ALL CONNECTIONS TO EXISTING WATER DISTRIBUTION ELEMENTS SHALL BE MADE UNDER FULL WATER SYSTEM PRESSURE UNLESS OTHERWISE SPECIFIED.

(C) HYDRANTS: SHALL BE MUELLER CENTURION MODEL OR APPROVED EQUAL, DRY BARREL, BREAK-FLANGE HYDRANTS CONFORMING TO AWWA C502. THEY SHALL BE PAINTED RED ABOVE GROUND AND SHALL INCLUDE AN APPROVED CORPORATION SIX-INCH RESILIENT WEDGE AUXILIARY GATE VALVE OR APPROVED EQUAL WITH SIX-INCH TO 24-INCH LONG SPACER. HYDRANTS SHALL HAVE STAINLESS STEEL BOLTS BELOW THE GROUND LEVEL.

(D) THE CONTRACTOR SHALL PROVIDE ALL NECESSARY EXTENSIONS ON FIRE HYDRANTS AND SHALL BE INSTALLED TO LEAVE THE NOZZLES 18 TO 24 INCHES ABOVE FINAL GRADE.

(E) FOR WATER MAIN SHUT OFFS, THE CONTRACTOR SHALL GIVE THE CITY WATER DIVISION A MINIMUM OF 48 HOURS NOTICE. THE CITY SHALL PROVIDE NOTIFICATION FORMS AND DETERMINE THE LIMIT OF THE AFFECTED AREAS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DISTRIBUTION OF THE NOTIFICATION FORMS TO ALL AFFECTED RESIDENTS.

(F) MEG-A-LUG JOINT RESTRAINTS SHALL BE USED IN LIEU OF THREADED TIE RODS AT ALL MECHANICAL CONNECTIONS, TEES, BENDS, CROSSES, AND FIRE HYDRANTS.

(G) STAINLESS STEEL NUTS AND BOLTS SHALL BE USED ON ALL FITTINGS BELOW GRADE.

(H) VALVES: RESILIENT WEDGE ONLY (EPOXY COATED IN AND OUT) STAINLESS STEEL TRIM.

(I) FITTINGS: ALL MECHANICAL FITTINGS MUST BE AMERICAN MADE.

(J) VALVE BOXES: VALVE BOXES FOR FIRE HYDRANT AUXILIARY VALVES AND FOR DIP WATER SERVICE CONNECTION VALVES WITH DIAMETERS LARGER THAN TWO INCHES BUT NO GREATER THAN TEN INCHES SHALL HAVE THE EQUIVALENT OF MUELLER CAST IRON VALVE BOXES NO. 664-S (IN PAVEMENT) OR H-1303-1 (NOT IN PAVEMENT) WITH RUBBER STABILIZER AND THE WORD "WATER" EMBOSSED IN THE LID.

(K) CURB BOXES: 1" CURB BOXES FOR 1" CURB STOPS; 1 1/2" CURB BOXES FOR 1 1/2" CURB STOPS; 2" CURB BOXES FOR 2" CURB STOPS.

(L) TRENCHES IN OR WITHIN 2 FEET OF A ROADWAY, PARKING AREA, CURB, SIDEWALK, OR ANY OTHER PAVED AREA SHALL BE BACKFILLED WITH TRENCH BACKFILL.

(M) CONNECTIONS TO EXISTING CITY OF ZION UTILITIES SHALL BE IN THE PRESENCE OF A REPRESENTATIVE OF THE CITY OF ZION.

(N) WATER SERVICE SHALL BE FILLED, FLUSHED, PRESSURE TESTED, AND CHLORINATED IN THE PRESENCE OF A REPRESENTATIVE OF THE CITY OF ZION.

(O) THE COST OF FLUSHING, DISINFECTION, SAMPLING AND TESTING SHALL BE BORNE BY THE OWNER OR DEVELOPER.

(P) THE CONTRACTOR SHALL NOT OPEN OR SHUT ANY WATER VALVES OR FIRE HYDRANTS WITHOUT PRIOR AUTHORIZATION FROM THE CITY OF ZION. UNAUTHORIZED USE SHALL SUBJECT THE OFFENDER TO ARREST AND PROSECUTION.

(Q) WATER MAIN SHALL BE INSTALLED AT A MINIMUM DEPTH OF 5.5' BELOW FINISHED GRADE AND NO DEEPER THAN 8' FROM FINISHED GRADE WITHOUT THE PRIOR APPROVAL OF THE CITY.

(R) CHANGES IN DIRECTION OF WATER MAIN SHALL BE INSTALLED WITH APPROVED RETAINER.

(S) WATER MAIN SHALL NOT BE SLEEVED OR ENCASED WITHOUT THE PRIOR APPROVAL FROM THE CITY OF ZION

(T) PRESSURE TESTING OF WATER MAIN SHALL INCLUDE HYDRANTS BY PRESSURE TESTING AGAINST INTERNAL VALVE OF HYDRANT.

(U) ALL EXISTING BUFFALO BOXES LOCATED IN DRIVEWAYS OR IN CLOSE PROXIMITY TO PARKWAY TREES SHALL BE RELOCATED AS DIRECTED BY THE ENGINEER. REPLACEMENT OF UP TO 4-FEET OF WATER SERVICE PIPE ON THE HOUSE SIDE OF BUFFALO BOXES IS CONSIDERED INCIDENTAL.

(V) ANY NECESSARY PUMPING OF WATER FROM THE TRENCHES SHALL BE INCLUDED IN THE COST OF THE PROPOSED WATER MAIN.

(W) ALL ABANDONED WATER MAIN SHALL BE CAPPED NOT BRICKED.

(X) COVER ALL NEW FIRE HYDRANTS WITH BLACK PLASTIC BAGS AFTER INSTALLATION AND UNTIL THE NEW WATER MAIN IS IN SERVICE.

(Y) WATER SERVICES ARE TO BE INSTALLED AFTER THE NEW MAINS HAVE BEEN TESTED, DISINFECTED, FLUSHED AND ACCEPTED FOR USE BY CITY OF ZION.

(Z) EXISTING VALVES ARE TO BE RESTRAINED OR BRACED PRIOR TO CLOSING VALVES FOR CONNECTION OF PROPOSED WATER MAINS TO EXISTING WATER MAINS OR FOR THE ABANDONMENT OF EXISTING WATER MAINS.

6. MISCELLANEOUS

(A) INSTALL EROSION CONTROL DEVICES, TREE PROTECTION FENCES, AND TEMPORARY WORK BOUNDARY FENCES PRIOR TO CONSTRUCTION, PER THE ENGINEER.

(B) RIM ELEVATIONS GIVEN ON THE PLANS ARE ONLY TO ASSIST THE CONTRACTOR IN DETERMINING THE APPROXIMATE OVERALL HEIGHT OF THE STRUCTURE. FRAMES OF ALL NEW, ADJUSTED OR RECONSTRUCTED STRUCTURES WILL MEET THE ELEVATION OF THE AREA IN WHICH THEY ARE LOCATED AS PART OF THE STRUCTURE, ADJUSTMENT OR RECONSTRUCTION COST. EVERY NEW STRUCTURE WILL INCORPORATE AT LEAST 4-INCHES OF ADJUSTING RINGS SO THAT THE STREET CONTRACTOR CAN ADJUST THE FRAME ELEVATION AS NEEDED TO THE FINISHED PAVEMENT OR FINAL ELEVATION OF THE AREA IN WHICH THEY ARE LOCATED.

(C) WATER JETTING IS ALLOWED FOR COMPACTION OF TRENCHES. JETTING MUST BE COMPLETED 14 DAYS PRIOR TO THE BEGINNING OF STREET WORK IN THOSE AREAS. FLOODING WILL NOT BE ALLOWED.

(D) ACCESS: THE CONTRACTOR SHALL PROVIDE ACCESS TO ABUTTING PROPERTY AT ALL TIMES DURING THE CONSTRUCTION OF THIS PROJECT, EXCEPT FOR PERIODS OF SHORT DURATION. DRIVEWAY APRONS SHALL BE RE-OPENED DURING NON-WORKING HOURS.

(E) DIMENSIONS: IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL DIMENSIONS AND CONDITIONS EXISTING IN THE FIELD PRIOR TO ORDERING MATERIALS AND BEGINNING CONSTRUCTION.

(F) ALL SAWCUTTING SHALL BE INCLUDED IN THE COST OF THE ASSOCIATED REMOVAL ITEMS AND SHALL BE PERFORMED PRIOR TO BEGINNING REMOVAL. ANY ITEMS OF WORK REMOVED PRIOR TO SAWCUTTING WILL NOT BE MEASURED FOR PAYMENT. CONTRACTOR SHALL RE-SAWCUT ANY DAMAGED AREAS CAUSED DURING CONSTRUCTION.

(G) RELOCATING EXISTING SIGNS: EXISTING SIGNS WHICH ARE IN CONFLICT WITH PROPOSED IMPROVEMENTS SHALL BE REMOVED AND REINSTALLED UPON COMPLETION OF CONFLICTING IMPROVEMENTS IN ACCORDANCE WITH THE ILLINOIS DEPARTMENT OF TRANSPORTATION "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES" AND THE "STANDARD SPECIFICATIONS FOR TRAFFIC CONTROL ITEMS" INCLUDED IN THE COST OF TRAFFIC CONTROL AND PROTECTION.

(H) PAY ITEMS IN THE SUMMARY OF QUANTITIES HAVE BEEN ESTIMATED. IF, IN THE ENGINEER'S OPINION, THE WORK IS NOT REQUIRED, THE ITEM WILL BE DEDUCTED FROM THE CONTRACT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

(I) POLLUTION CONTROL: THE CONTRACTOR WILL BE REQUIRED TO COMPLY WITH STATE REGULATIONS REGARDING AIR, WATER AND NOISE POLLUTION.

(J) CONSTRUCTION OPERATIONS SHALL BE CONFINED TO THE PERIOD BEGINNING AT 7:00 A.M. AND ENDING AT 6:00 P.M. WEEKDAYS,8:00A.M. TO 4:00P.M. SATURDAY, AND NO WORK SHALL BE PERFORMED ON SUNDAYS OR HOLIDAYS, PER CITY ORDINANCE.

(K) THE CONTRACTOR IS RESPONSIBLE FOR EXAMINING ALL SITE CONDITIONS PRIOR TO COMMENCEMENT OF CONSTRUCTION AND IS TO COMPARE THE SITE CONDITIONS AS INDICATED IN THE DRAWINGS.

(L) THE CONTRACTOR SHALL COORDINATE CONSTRUCTION OPERATIONS TO INSURE TRAFFIC MAINTENANCE, SURFACE DRAINAGE, ETC. THROUGHOUT THE DURATION OF THE CONSTRUCTION PERIOD IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY OF ZION, AND ANY OTHER GOVERNING AGENCIES.

(M) THE CONTRACTOR SHALL TAKE ALL NECESSARY SAFETY PRECAUTIONS TO PROTECT AND PROVIDE ACCESS TO ABUTTING PROPERTY, UTILITIES, PEDESTRIANS AND VEHICULAR TRAFFIC. MINIMIZE GROUND SURFACE DISTURBANCE FROM CONSTRUCTION ACTIVITIES ACROSS PRIVATE PROPERTY.

(N) DO NOT STORE MATERIALS, STRUCTURES, OR EQUIPMENT WHERE THEY WILL OBSTRUCT STREET OR DRIVEWAY SIGHTLINES.

(O) NO BURNING OR INCINERATION OF RUBBISH WILL BE PERMITTED ON SITE.

(P) DO NOT SCALE DRAWINGS IF COORDINATES AND DIMENSIONS ARE GIVEN.

(Q) THE CONTRACTOR IS ADVISED THAT MUD AND DEBRIS MUST NOT BE DEPOSITED ON THE ADJACENT ROADWAYS. ANY DIRT AND DEBRIS ACCUMULATED ON THE PAVEMENT SHALL BE CLEANED BY THE CONTRACTOR WITHIN FOUR (4) HOURS OF THE INCIDENT OR THEY WILL BE BACK CHARGED AT THE RATE OF $500.00 PER INCIDENT PLUS THE COST OF THE CITY'S FORCES TO COMPLETE THE WORK. THE CONTRACTOR SHALL CONTRACT TO HAVE THE STREETS SWEPT EACH WEEK DURING CONSTRUCTION AND THIS WORK IS CONSIDERED INCIDENTAL TO THE WORK. MAILBOXES WHICH ARE IN CONFLICT WITH PROPOSED IMPROVEMENTS SHALL BE REMOVED, TEMPORARILY RELOCATED, AND REPLACED UPON COMPLETION OF THE PROPOSED IMPROVEMENTS AS DIRECTED BY THE ENGINEER. THIS WORK SHALL BE INCLUDED IN THE COST OF THE WATER MAIN.

(R) THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO STREETS OR ROADWAYS AND ASSOCIATED STRUCTURES AND SHALL MAKE REPAIRS AS NECESSARY TO CORRECT DAMAGE AT HIS OWN EXPENSE. PROTECT PAVED AREAS FROM DAMAGE WHERE CRAWLER-TRACK MACHINERY IS USED. DUE TO THE PROJECT'S VARIOUS LOCATIONS TRACK MACHINERY IS TO BE MOVED ON STREETS NOT UNDER CONSTRUCTION BY LOWBOY.

(S) THE CONTRACTOR SHALL PROVIDE A 2-4 HOUR EMERGENCY RESPONSE PLAN (FROM TIME OF NOTIFICATION). IF NO RESPONSE, THE CITY CAN HIRE A CONTRACTOR THEN BACK CHARGE THE AWARDED CONTRACTOR.

(T) THE CONTRACTOR MUST ALSO PROVIDE A 24 HOUR RESPONSE PLAN (FROM TIME OF NOTIFICATION). IF NO RESPONSE, THE CITY CAN HIRE AN ALTERNATE CONTRACTOR THEN BACK CHARGE THE AWARDED CONTRACTOR.

(U) ALL REMOVAL OR EXCAVATION ITEMS BEING DISPOSED OF AT AN UNCONTAMINATED SOIL FILL OPERATION OR CLEAN CONSTRUCTION AND DEMOLITION DEBRIS (CCDD) FILL SITE SHALL MEET THE REQUIREMENTS OF PUBLIC ACT 96-1416. ALL COSTS ASSOCIATED WITH MEETING THESE REQUIREMENTS SHALL BE INCLUDED IN THE UNIT PRICE COST FOR THE ASSOCIATED REMOVAL OR EXCAVATION ITEMS IN THE CONTRACT. THESE COSTS SHALL INCLUDE BUT ARE NOT LIMITED TO ALL REQUIRED TESTING, LAB ANALYSIS, CERTIFICATION BY A LICENSED PROFESSIONAL ENGINEER, AND STATE AND LOCAL TIPPING FEES.

CHRISTOPHER B. BURKE ENGINEERING, LTD.
9575 W. Higgins Road, Suite 600
Rosemont, Illinois 60018
(847) 823-0500

CLIENT: CITY OF ZION

NO.	DATE	NATURE OF REVISION	CHKD.

DSGN.	DJK
DWN.	MEG
CHKD.	LMF
SCALE:	40'
PLOT DATE:	10/24/2023
CAD USER:	dkleinwachter
MODEL:	Default

FILE NAME \\tbg.net\CBBEL\CBBELDFT\ZION\230026\CIVIL\NOT_230026_0L.sht

TITLE:
2023 WATER MAIN REPLACEMENT GENERAL NOTES

PROJ. NO.	23-0026
DATE:	10/24/2023
SHEET	2 OF 26
DRAWING NO.	2

SUMMARY OF QUANTITIES

SP	PAY ITEM NUMBER	PAY ITEM NAME	UNIT	BASE BID	ALTERNATE 1	ALTERNATE 2	ALTERNATE 3	TOTAL QUANTITY
	20100110	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	UNIT	70	0	0	0	70
	28000510	INLET FILTERS	EACH	13	2	4	0	19
*	42400800	DETECTABLE WARNINGS	SQ FT	20	10	0	0	30
	44000600	SIDEWALK REMOVAL	SQ FT	460	80	0	0	540
*	56103000	DUCTILE IRON WATER MAIN 6"	FOOT	184	23	5	20	232
*	56103100	DUCTILE IRON WATER MAIN 8"	FOOT	2544	205	275	570	3594
*	56103200	DUCTILE IRON WATER MAIN 10"	FOOT	430	0	0	0	430
*	56400820	FIRE HYDRANT WITH AUXILIARY VALVE AND VALVE BOX	EACH	4	1	0	1	6
	67100100	MOBILIZATION	L SUM	0.7	0.1	0.1	0.1	1
	78000400	THERMOPLASTIC PAVEMENT MARKING - LINE 6"	FOOT	120	0	120	0	240
	78000650	THERMOPLASTIC PAVEMENT MARKING - LINE 24"	FOOT	14	0	14	0	28
*	X0326862	STRUCTURES TO BE ADJUSTED	EACH	4	0	1	0	5
*	X4021000	TEMPORARY ACCESS (PRIVATE ENTRANCE)	EACH	9	0	0	8	17
*	X4023000	TEMPORARY ACCESS (ROAD)	EACH	7	1	1	1	10
*	X4400080	DRIVEWAY REMOVAL AND REPLACEMENT	SQ YD	35	0	0	0	35
*	X5610706	WATER MAIN REMOVAL, 6"	FOOT	90	0	0	10	100
*	X5610710	WATER MAIN REMOVAL, 10"	FOOT	20	0	0	0	20
*	X5640155	FIRE HYDRANTS TO BE REMOVED & SALVAGED	EACH	2	1	0	1	4
*	X8030106	LOCATING UNDERGROUND UTILITY	FOOT	120	20	20	20	180
*	XX004689	SANITARY SERVICE TO BE ADJUSTED	EACH	20	0	0	0	20
*	XX006698	TREE PROTECTION AND PRESERVATION	EACH	20	5	5	5	35
*	XX006891	CIPP LINER FOR SANITARY SEWER MAIN 8"	FOOT	509	0	0	550	1059
*	Z1	ABANDON WATER MAIN AND APPURTENANCES	LSUM	0.7	0.1	0.1	0.1	1
*	Z2	AS-BUILT DRAWINGS	LSUM	0.7	0.1	0.1	0.1	1
*	Z3	BIKE PATH REMOVAL AND REPLACEMENT	SQ FT	435	0	0	0	435
*	Z4	CLASS D PATCHES, 8" (SPECIAL)	SQ YD	1325	11	170	320	1826
*	Z5	COMBINATION CURB AND GUTTER REMOVAL AND REPLACEMENT	FOOT	370	15	10	0	395
*	Z6	CONSTRUCTION LAYOUT	LSUM	0.7	0.1	0.1	0.1	1
*	Z7	DUCTILE IRON WATER MAIN FITTINGS	POUND	6182	461	215	164	7022
*	Z8	GATE VALVES 10"	EACH	3	0	0	0	3
*	Z9	GATE VALVES 8"	EACH	14	1	1	1	17
*	Z10	ITEMS ORDERED BY THE ENGINEER	UNIT	28250	2250	2250	2250	35000
*	Z11	PORTLAND CEMENT CONCRETE SIDEWALK 5 INCH, SPECIAL	SQ FT	460	80	0	0	540
*	Z12	PRECONSTRUCTION VIDEO TAPING	LSUM	0.7	0.1	0.1	0.1	1
*	Z13	PRIVATE WATER SERVICE ASBESTOS ABATEMENT	EACH	5	0	0	0	5
*	Z14	SANITARY SEWER POINT REPAIR (WATER MAIN REQUIREMENTS) 12 INCH	FOOT	36	0	0	0	36
*	Z15	STORM SEWER POINT REPAIR (WATER MAIN REQUIREMENTS) 10 INCH	FOOT	30	0	0	0	30
*	Z16	STORM SEWER POINT REPAIR (WATER MAIN REQUIREMENTS) 8 INCH	FOOT	74	0	0	0	74
*	Z17	TRAFFIC CONTROL AND PROTECTION (SPECIAL)	LSUM	0.7	0.1	0.1	0.1	1
*	Z18	TRENCH BACKFILL, SPECIAL	CU YD	2610	258	339	694	3901
*	Z19	VALVE BOX, 10"	EACH	3	0	0	0	3
*	Z20	VALVE BOX, 8"	EACH	14	1	1	1	17
*	Z21	WATER MAIN CASING PIPE, STEEL, 16"	FOOT	26	0	0	0	26
*	Z22	WATER MAIN CONNECTION TO EXISTING WATER MAIN (NON-PRESSURE) - DISCONNECT AND CAP EXISTING	EACH	11	1	1	2	15
*	Z23	WATER MAIN IN CASING, 8"	FOOT	30	0	0	0	30
*	Z24	WATER MAIN LINE STOP 10"	EACH	2	0	0	0	2
*	Z25	WATER MAIN LINE STOP 6"	EACH	5	1	1	1	8
*	Z26	WATER SERVICE INTERIOR RESTORATION	EACH	5	0	0	0	5
*	Z27	WATER SERVICE LINE (PRIVATE) - LEAD SERVICE REPLACEMENT	EACH	5	0	0	0	5
*	Z28	WATER SERVICE REPLACEMENT WITH NEW BUFFALO BOX, 1" (LONG SIDE)	EACH	15	0	0	5	20
*	Z29	WATER SERVICE REPLACEMENT WITH NEW BUFFALO BOX, 1" (SHORT SIDE)	EACH	15	0	0	5	20
*	Z30	WATER SERVICE REPLACEMENT WITH NEW BUFFALO BOX, 1.5" (LONG SIDE)	EACH	5	0	0	0	5
*	Z31	WATER SERVICE REPLACEMENT WITH NEW BUFFALO BOX, 1.5" (SHORT SIDE)	EACH	5	0	0	0	5

* INDICATES SPECIAL PROVISION

UTILITY COORDINATION

UTILITY COORDINATION	DATE SENT TO UTILITY COMPANIES	RESPONSE DATE	COMMENTS
AT&T (DISTRIBUTION) FULL NAME: JAMEL MCGINNIS 1000 COMMERCE DR. FLOOR 1 OAK BROOK, ILLINOIS 60523 EMAIL: G11629@ATT.COM EMAIL 2: JM548W@ATT.COM	6/30/23	7/5/23	WATCH AND PROTECT ALL FACILITIES
COMCAST FULL NAME: MARTHA GIERAS 688 INDUSTRIAL DRIVE ELMHURST, ILLINOIS 60126 BUS: (224) 229-5862 EMAIL: MARTHA_GIERAS@CABLE.COMCAST.COM	6/30/23		
COMED ELECTRONIC-PLAN-SUBMITTAL FULL NAME: LISA ARGAST BUS: (630) 576-7094 BUS 2: (630) 437-3381 OTHER: (630) 576-7094 EMAIL: PLANSUBMITTALSANDMAPREQUESTS @EXELONCORP.COM EMAIL 2: LISA.ARGAST@COMED.COM	6/30/23	7/11/23	NO CONFLICTS ANTICIPATED
NORTH SHORE GAS FULL NAME: JAY HAMMER 3001 GRAND AVENUE WAUKEGAN, ILLINOIS 60085 BUS: (847) 263-4678 EMAIL: UTILITYMAPREQUEST@NORTHSHOREGASDELIVERY.COM EMAIL 2: JAY.HAMMER@NORTHSHOREGASDELIVERY.COM EMAIL 3: NSG-ENGINEERING-DESIGN@NORTHSHOREGASDELIVERY.COM	6/30/23	8/8/23	CONFLICT ALONG ALLEY STA. 27+10 TO STA. 28+50. NORTH SHORE GAS TO RELOCATE

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CLIENT: CITY OF ZION

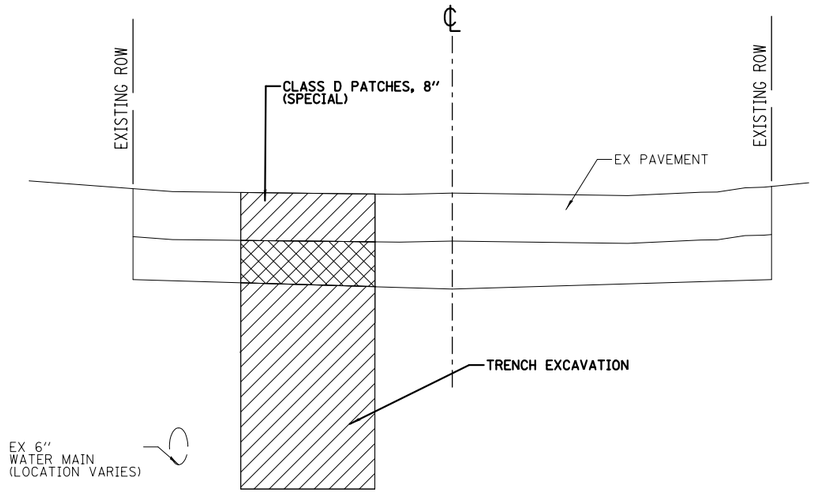
NO.	DATE	NATURE OF REVISION	CHKD.

FILE NAME: \\tbg.net\CBBEL\CBBELDFT\ZION\230026\Civil\QUA_230026_0Lsht

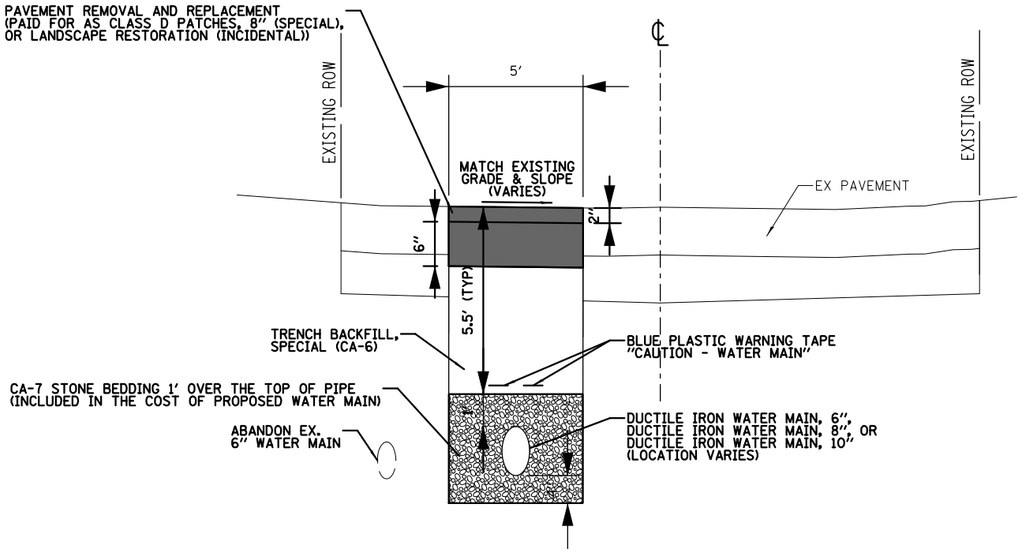
DSGN. DJK
DWN. MEG
CHKD. LMF
SCALE: 40'
PLOT DATE: 10/24/2023
CAD USER: dkleinwachter
MODEL: Default

TITLE:
2023 WATER MAIN REPLACEMENT
SUMMARY OF QUANTITIES
UTILITY COORDINATION

PROJ. NO. 23-0026
DATE: 10/24/2023
SHEET 3 OF 26
DRAWING NO. 3



EXISTING TYPICAL SECTION – ROADWAY & ALLEY PATCHING
N.T.S.



PROPOSED TYPICAL SECTION – ROADWAY & ALLEY PATCHING
N.T.S.

CORE DETAILS

	LIMITS	CORE NUMBER	TOTAL BITUMINOUS THICKNESS	BASE COURSE THICKNESS
BASE BID	29TH STREET EAST OF GELEAD	B-1	9.75"	6"
BASE BID	NE-SW ALLEY BETWEEN 29TH ST & 28TH ST	B-2	3"	7"
BASE BID	N/S ALLEY BETWEEN GILEAD & GILBOA, SOUTH OF 27TH ST	B-3	1.5"	8"
BASE BID	28TH STREET EAST OF GILBOA	B-4	3.75"	12"
BASE BID	GIDEON AVENUE BETWEEN 28TH ST & 27TH ST	B-5	8.5"	NONE ENCOUNTERED
BASE BID	N/S ALLEY BETWEEN GIDEON & GABRIEL, SOUTH OF 27TH ST	B-6	2"	6"
BASE BID	E/W ALLEY WEST OF GABRIEL	B-7	2.25"	8"
ALTERNATE #1	29TH STREET WEST OF GILEAD	B-8	10.5"	12"
ALTERNATE #2	28TH STREET WEST OF GILEAD	B-9	3"	18"
ALTERNATE #3	N/S ALLEY BETWEEN GIDEON & GILBOA, SOUTH OF 27TH ST	B-10	3"	7"

HOT-MIX ASPHALT MIXTURE REQUIREMENTS

MIXTURE TYPE		VOIDS
PATCHING	CLASS D PATCHES (HMA BINDER IL-19mm)	4% @ 70 GYR

NOTE:
1. THE UNIT WEIGHT USED TO CALCULATE ALL HOT-MIX ASPHALT SURFACE MATERIAL IS 112 LBS/SY/IN.

2. FOR "PERCENT OF RAP" SEE DISTRICT ONE SPECIAL PROVISIONS.

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CLIENT: CITY OF ZION

NO.	DATE	NATURE OF REVISION	CHKD.

FILE NAME: N:\ZION\230026\Civil\TYP_230026_01.sht

DSGN.	DJK
DWN.	MEG
CHKD.	LMF
SCALE:	40'
PLOT DATE:	10/24/2023
CAD USER:	dkleinwachter
MODEL:	Default

TITLE:
2023 WATER MAIN REPLACEMENT TYPICAL SECTIONS

PROJ. NO.	23-0026
DATE:	10/24/2023
SHEET	4 OF 26
DRAWING NO.	4

N 2 104 288.62
E 1 116 156.31

CP-10
SET PK-NAIL

CP-11
SET PK-NAIL

N 2 104 921.84
E 1 116 173.48

CP-865
SET PK-NAIL

CP-1008
SET PK-NAIL

28TH ST STA. 34+47.50
ALLEY STA. 27+03.75

29TH ST STA. 14+64.48
ALLEY STA. 20+70.00

N 2 104 288.62
E 1 116 620.80

N 2 104 922.37
E 1 116 620.98

MATCH LINE STA. 36+00

SCALE IN FEET
40 0 40

ELEVATION BENCHMARKS
DATUM: NAVD '88 (GPS OBSERVED)

NO.	DESCRIPTION	ELEV.
OSBM	SQUARE CUT SET ON THE SOUTHWEST CORNER	661.33
23-26	OF CONC PAD OF PARK BENCH LOCATED AT	
	THE NORTHEAST CORNER OF GILEAD AVENUE	
	AND 29TH STREET	
OSBM	X CUT SET ON THE NORTH SIDE SANITARY	658.30
23-27	MANHOLE RIM AROUND 65 FEET NORTH OF	
	THE CENTERLINE OF 28TH STREET BETWEEN	
	GIDEON AVENUE AND GILBOA AVENUE	
OSBM	SQUARE CUT SET ON THE SOUTH EDGE OF	649.83
23-28	CONCRETE SLAB FOR PARK BENCH LOCATED	
	AT THE SOUTHWEST CORNER OF GABRIEL	
	AVENUE AND 27TH STREET	

HORIZONTAL CONTROL POINTS

CP. NO.	NORTHING	EASTING	DESCRIPTION	STATION	OFFSET
10	2 104 383.14	1 116 458.34	CP-NAIL	13+02.03	94.52'
11	2 104 654.84	1 116 732.16	CP-NAIL	24+36.25	111.26'
12	2 104 943.04	1 117 009.45	CP-NAIL	38+36.00	20.20'
13	2 105 260.24	1 117 372.06	CP-NAIL	55+00.79	23.73'
865	2 104 936.74	1 116 608.81	CP-NAIL	34+35.34	14.38'
1008	2 105 276.77	1 116 611.59	CP-NAIL	30+58.15	9.50'

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NO.	DATE	NATURE OF REVISION	CHKD.

FILE NAME: N:\ZION\230026\CIVIL\ALL230026_0.sht

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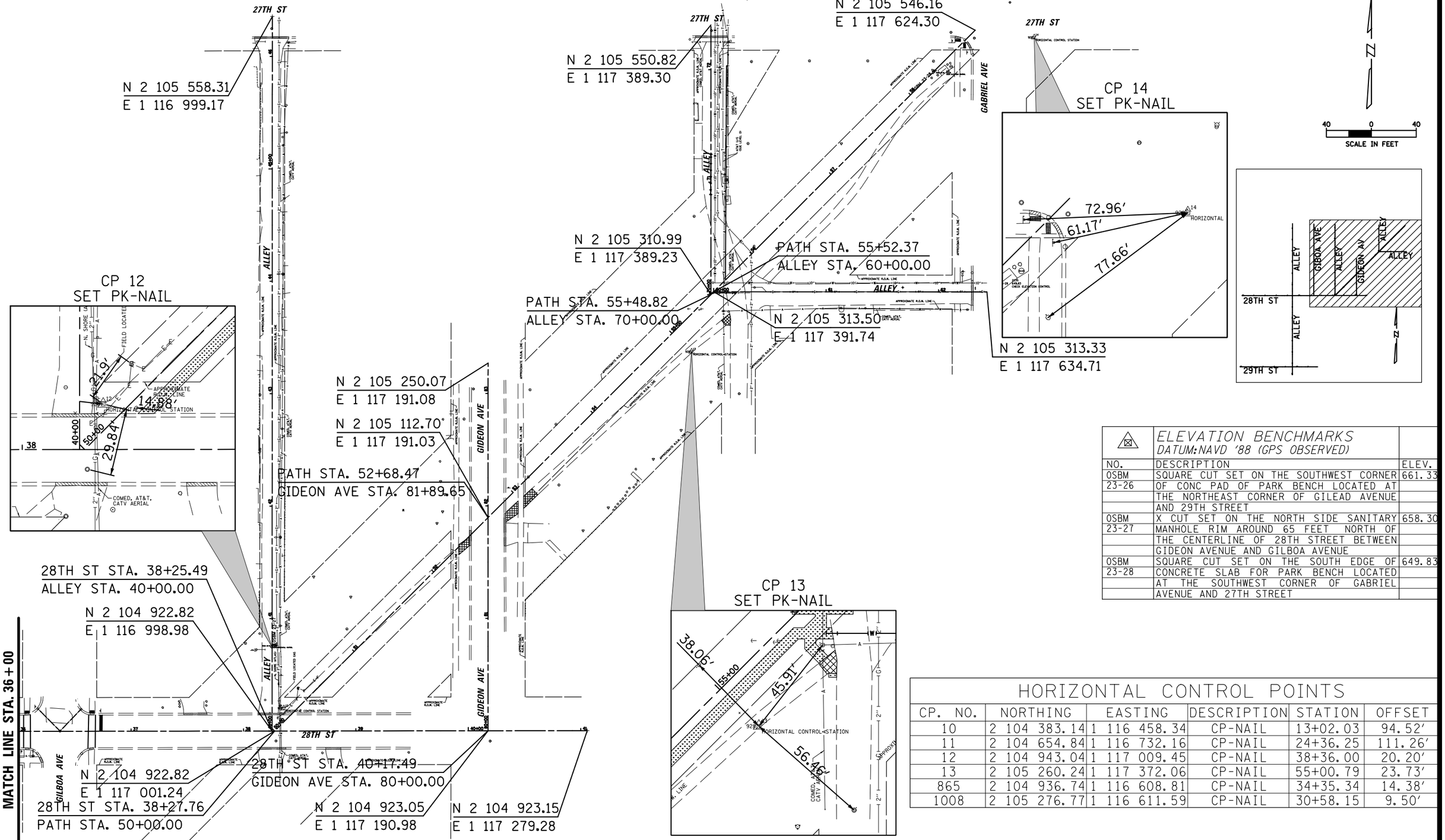
DWN.	MEG
CHKD.	LMF
SCALE:	80'
PLOT DATE:	10/24/2023
CAD USER:	dkleinwachter
MODEL:	Default

TITLE:
2023 WATER MAIN REPLACEMENT
ALIGNMENT, TIES AND BENCHMARKS

PROJ. NO.	23-0026
DATE:	10/24/2023
SHEET	5 OF 26
DRAWING NO.	5



ELEVATION BENCHMARKS
DATUM: NAVD '88 (GPS OBSERVED)

NO.	DESCRIPTION	ELEV.
OSBM	SQUARE CUT SET ON THE SOUTHWEST CORNER OF CONC PAD OF PARK BENCH LOCATED AT THE NORTHEAST CORNER OF GILEAD AVENUE AND 29TH STREET	661.33
23-26		
OSBM	X CUT SET ON THE NORTH SIDE SANITARY MANHOLE RIM AROUND 65 FEET NORTH OF THE CENTERLINE OF 28TH STREET BETWEEN GIDEON AVENUE AND GILBOA AVENUE	658.30
23-27		
OSBM	SQUARE CUT SET ON THE SOUTH EDGE OF CONCRETE SLAB FOR PARK BENCH LOCATED AT THE SOUTHWEST CORNER OF GABRIEL AVENUE AND 27TH STREET	649.83
23-28		

HORIZONTAL CONTROL POINTS

CP. NO.	NORTHING	EASTING	DESCRIPTION	STATION	OFFSET
10	2 104 383.14	1 116 458.34	CP-NAIL	13+02.03	94.52'
11	2 104 654.84	1 116 732.16	CP-NAIL	24+36.25	111.26'
12	2 104 943.04	1 117 009.45	CP-NAIL	38+36.00	20.20'
13	2 105 260.24	1 117 372.06	CP-NAIL	55+00.79	23.73'
865	2 104 936.74	1 116 608.81	CP-NAIL	34+35.34	14.38'
1008	2 105 276.77	1 116 611.59	CP-NAIL	30+58.15	9.50'

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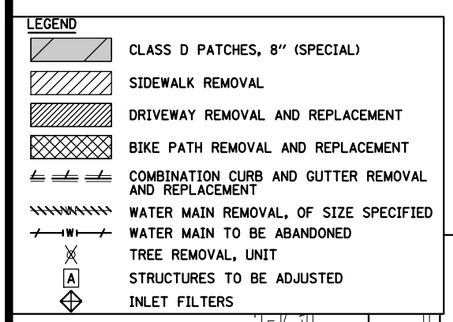
NO.	DATE	NATURE OF REVISION	CHKD.

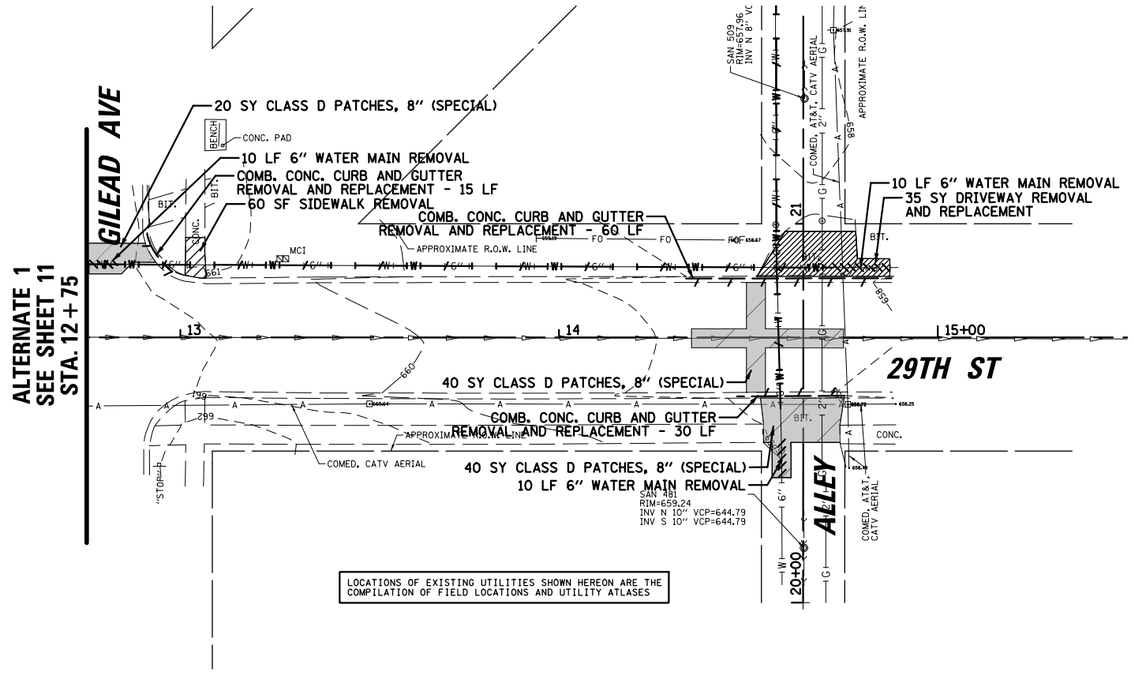
DSGN.	DJK
DWN.	MEG
CHKD.	LMF
SCALE:	80'
PLOT DATE:	10/24/2023
CAD USER:	dkleinwachter
MODEL:	Default

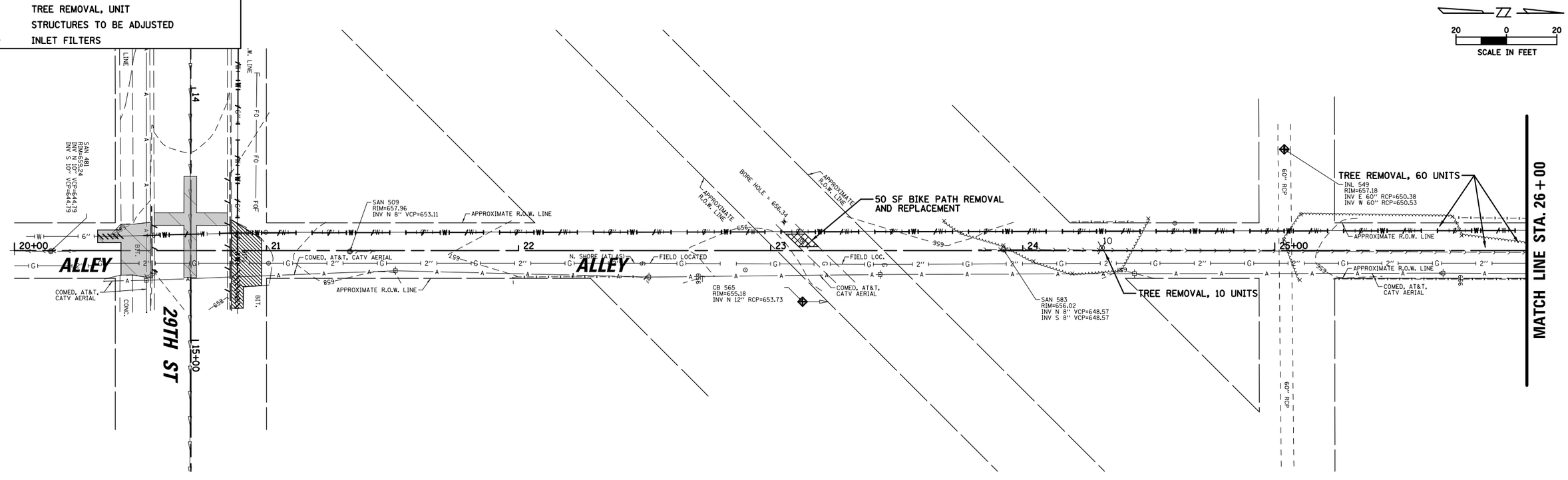
FILE NAME N:\ZION\230026\Civil\ALL230026_02.sht

TITLE:
2023 WATER MAIN REPLACEMENT
ALIGNMENT, TIES AND BENCHMARKS

PROJ. NO.	23-0026
DATE:	10/24/2023
SHEET	6 OF 26
DRAWING NO.	6







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CLIENT:
CITY OF ZION

NO.	DATE	NATURE OF REVISION	CHKD.

FILE NAME: N:\ZION\230026\Civil\Reml_230026.sht

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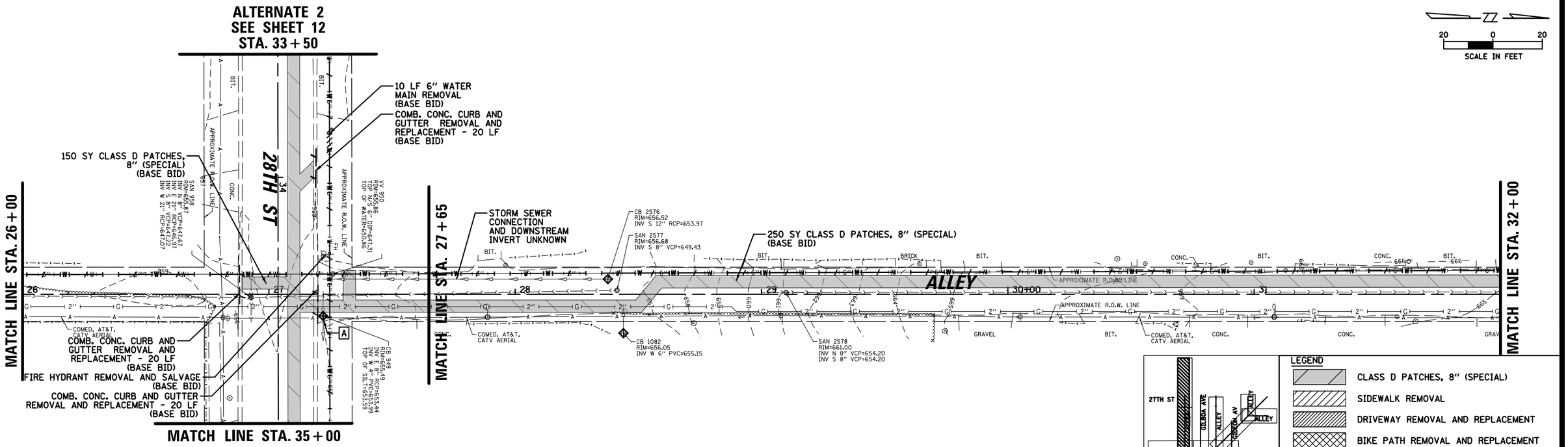
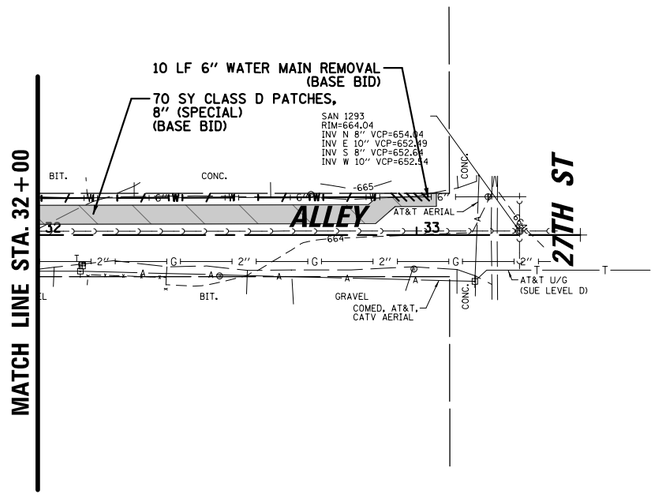
DWN.	MEG
CHKD.	LMF
SCALE:	40'
PLOT DATE:	10/24/2023
CAD USER:	dkleinwachter
MODEL:	Default

TITLE:
2023 WATER MAIN REPLACEMENT BASE BID: EXISTING CONDITIONS AND REMOVAL PLAN

PROJ. NO.	23-0026
DATE:	10/24/2023
SHEET	7 OF 26
DRAWING NO.	7





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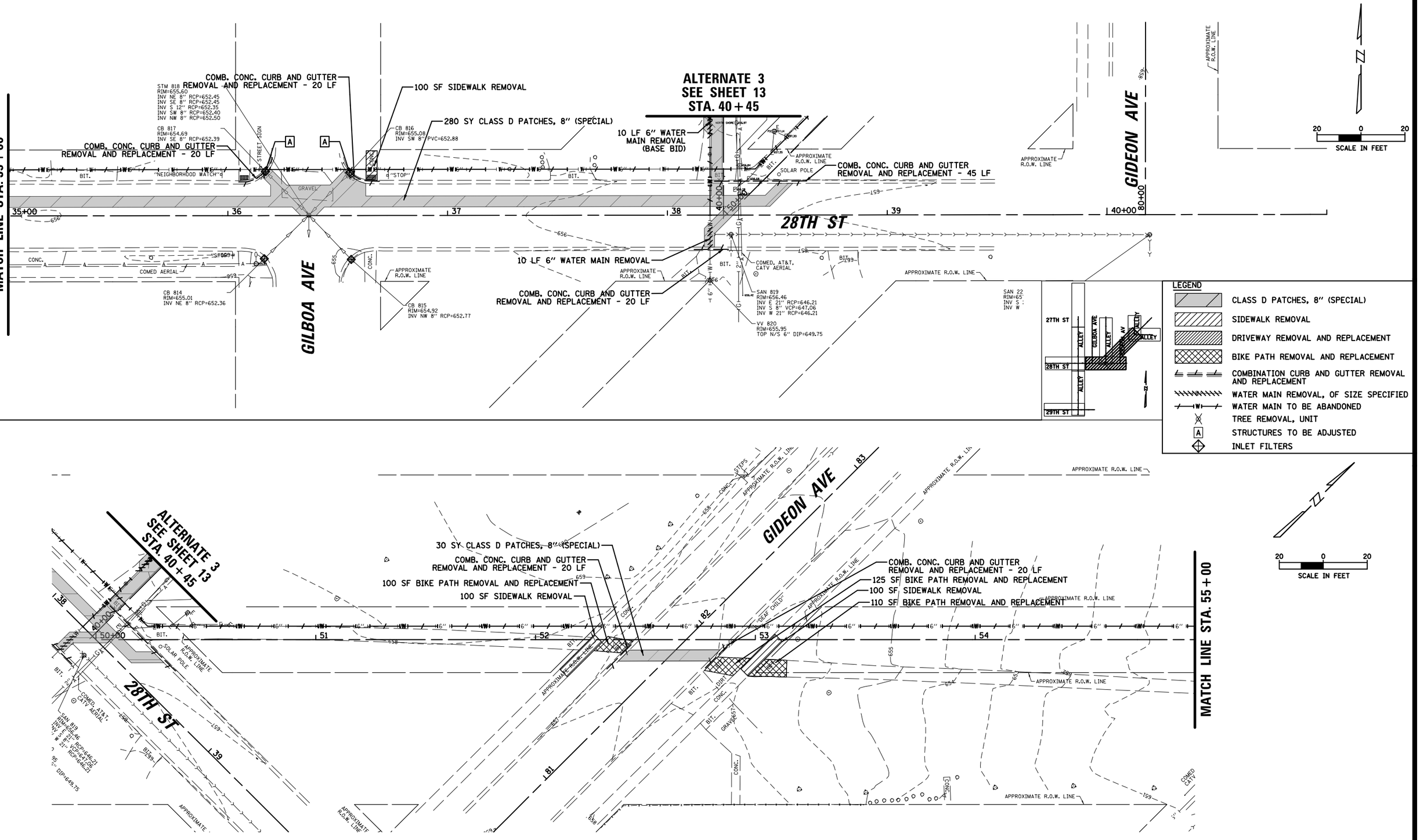
CLIENT: CITY OF ZION

NO.	DATE	NATURE OF REVISION	CHKD.

DSGN.	DJK
DWN.	MEG
CHKD.	LMF
SCALE:	40'
PLOT DATE:	10/24/2023
CAD USER:	dkleinwachter
MODEL:	Default
FILE NAME	N:\ZION\230026\CIVIL\REM2_230026.sht

TITLE:
2023 WATER MAIN REPLACEMENT
BASE BID: EXISTING CONDITIONS AND REMOVAL PLAN

PROJ. NO.	23-0026
DATE:	10/24/2023
SHEET	8 OF 26
DRAWING NO.	8



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CLIENT:
CITY OF ZION

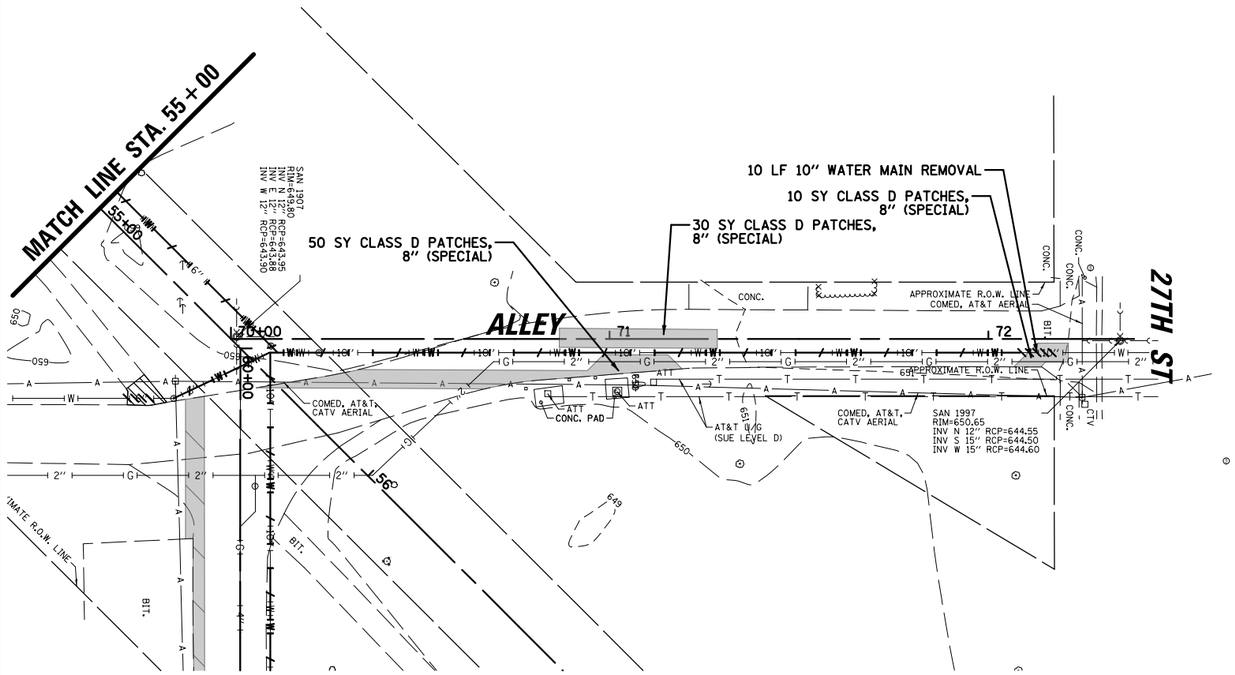
NO.	DATE	NATURE OF REVISION	CHKD.

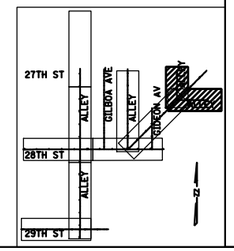
DSGN.	DJK
DWN.	MEG
CHKD.	LMF
SCALE:	40'
PLOT DATE:	10/24/2023
CAD USER:	dkleinwachter
MODEL:	Default

FILE NAME N:\ZION\230026\Civil\REM3_230026.sht

TITLE:
2023 WATER MAIN REPLACEMENT BASE BID: EXISTING CONDITIONS AND REMOVAL PLAN

PROJ. NO.	23-0026
DATE:	10/24/2023
SHEET	9 OF 26
DRAWING NO.	9

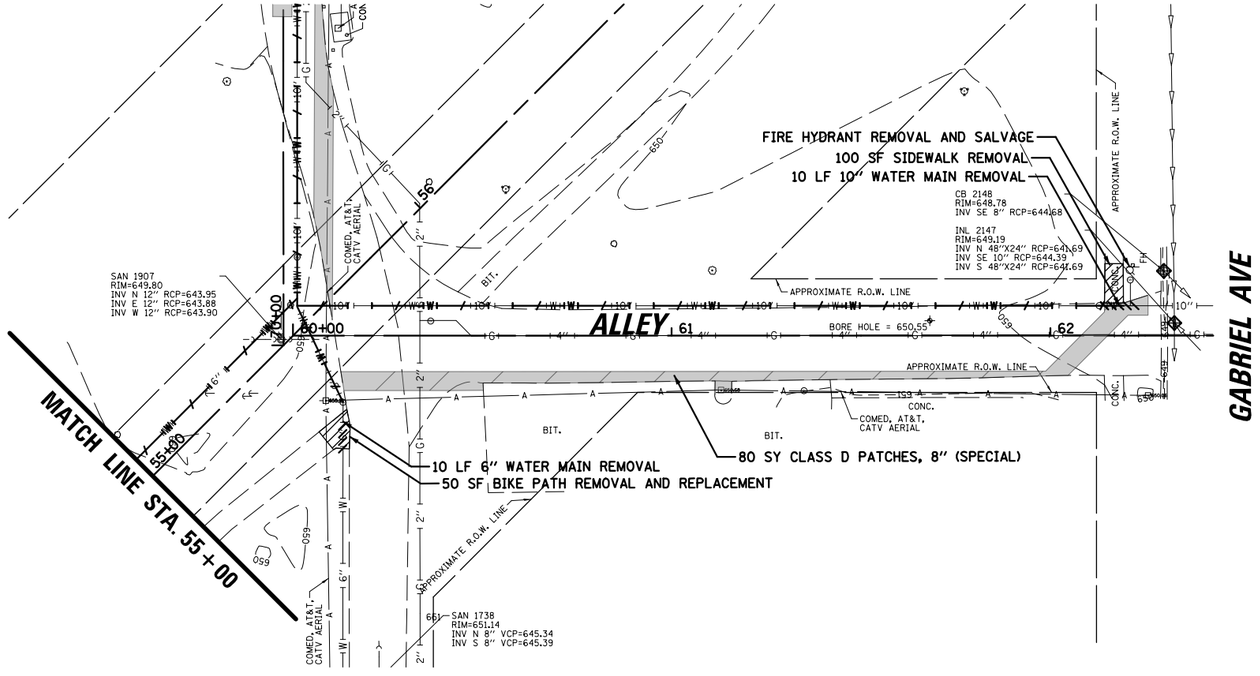




20 0 20
SCALE IN FEET

LEGEND

- CLASS D PATCHES, 8" (SPECIAL)
- SIDEWALK REMOVAL
- DRIVEWAY REMOVAL AND REPLACEMENT
- BIKE PATH REMOVAL AND REPLACEMENT
- COMBINATION CURB AND GUTTER REMOVAL AND REPLACEMENT
- WATER MAIN REMOVAL, OF SIZE SPECIFIED
- WATER MAIN TO BE ABANDONED
- TREE REMOVAL, UNIT
- A STRUCTURES TO BE ADJUSTED
- INLET FILTERS



20 0 20
SCALE IN FEET

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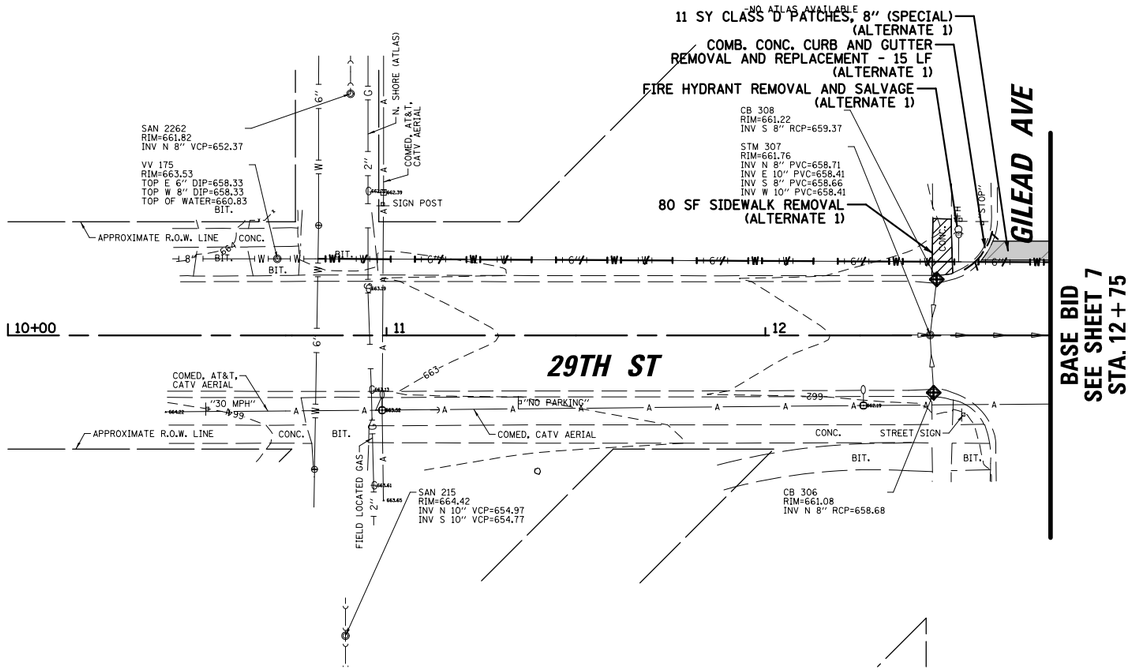
NO.	DATE	NATURE OF REVISION	CHKD.

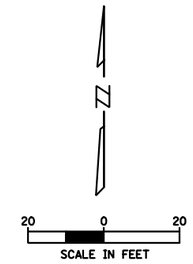
DSGN.	DJK
DWN.	MEG
CHKD.	LMF
SCALE:	40'
PLOT DATE:	10/24/2023
CAD USER:	dkleinwachter
MODEL:	Default
FILE NAME	N:\ZION\230026\Civil\REM4_230026.sht

TITLE:

2023 WATER MAIN REPLACEMENT BASE BID: EXISTING CONDITIONS AND REMOVAL PLAN

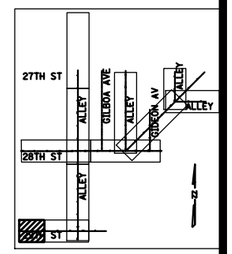
PROJ. NO.	23-0026
DATE:	10/24/2023
SHEET	10 OF 26
DRAWING NO.	10





LEGEND

- CLASS D PATCHES, 8" (SPECIAL)
- SIDEWALK REMOVAL
- DRIVEWAY REMOVAL AND REPLACEMENT
- BIKE PATH REMOVAL AND REPLACEMENT
- COMBINATION CURB AND GUTTER REMOVAL AND REPLACEMENT
- WATER MAIN REMOVAL, OF SIZE SPECIFIED
- WATER MAIN TO BE ABANDONED
- TREE REMOVAL, UNIT
- [A] STRUCTURES TO BE ADJUSTED
- INLET FILTERS



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CLIENT: CITY OF ZION

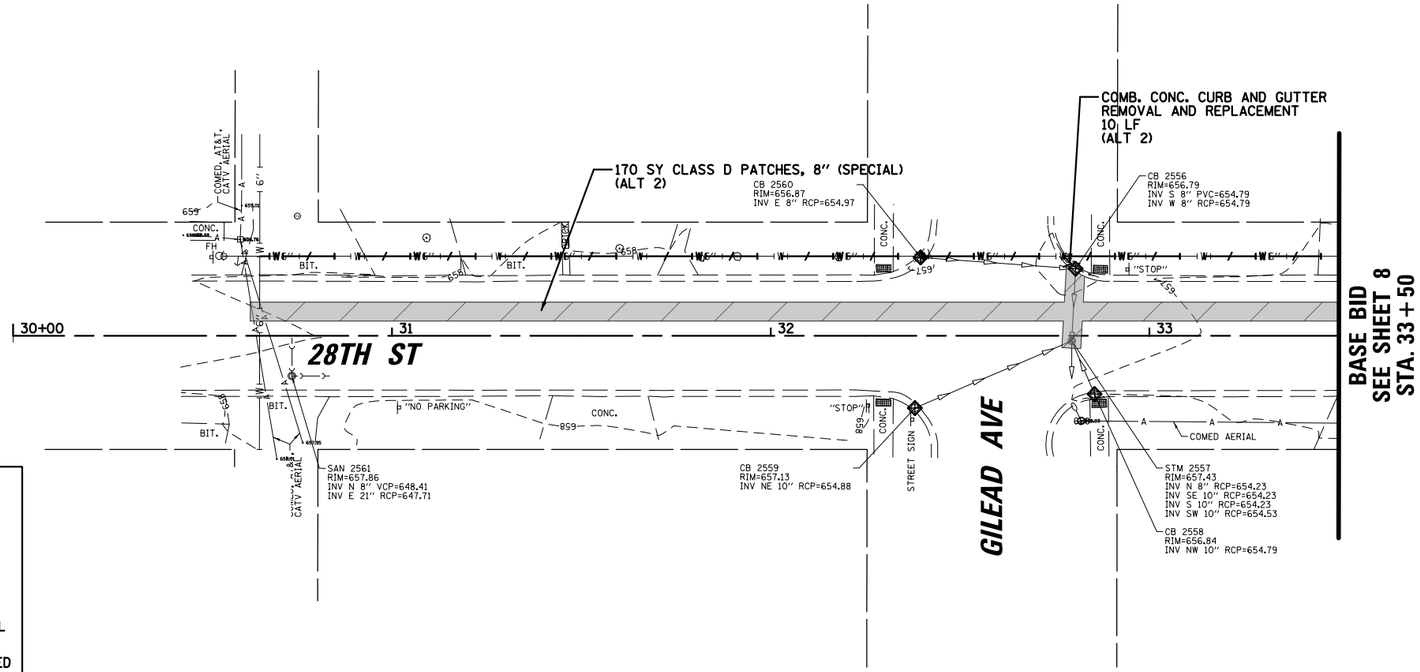
NO.	DATE	NATURE OF REVISION	CHKD.
FILE NAME	N:\ZION\230026\Civil\REMS_230026_dtl.sht		

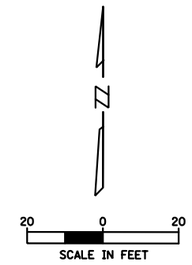
DSGN.	DJK
DWN.	MEG
CHKD.	LMF
SCALE:	40'
PLOT DATE:	10/24/2023
CAD USER:	dkleinwachter
MODEL:	Default

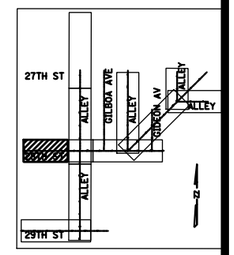
TITLE:

2023 WATER MAIN REPLACEMENT ALTERNATE 1: EXISTING CONDITIONS AND REMOVAL PLAN

PROJ. NO.	23-0026
DATE:	10/24/2023
SHEET	11 OF 26
DRAWING NO.	11







LEGEND

- CLASS D PATCHES, 8" (SPECIAL)
- SIDEWALK REMOVAL
- DRIVEWAY REMOVAL AND REPLACEMENT
- BIKE PATH REMOVAL AND REPLACEMENT
- COMBINATION CURB AND GUTTER REMOVAL AND REPLACEMENT
- WATER MAIN REMOVAL, OF SIZE SPECIFIED
- WATER MAIN TO BE ABANDONED
- TREE REMOVAL, UNIT
- [A] STRUCTURES TO BE ADJUSTED
- INLET FILTERS

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Rosemont, Illinois 60018
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CLIENT: CITY OF ZION

NO.	DATE	NATURE OF REVISION	CHKD.

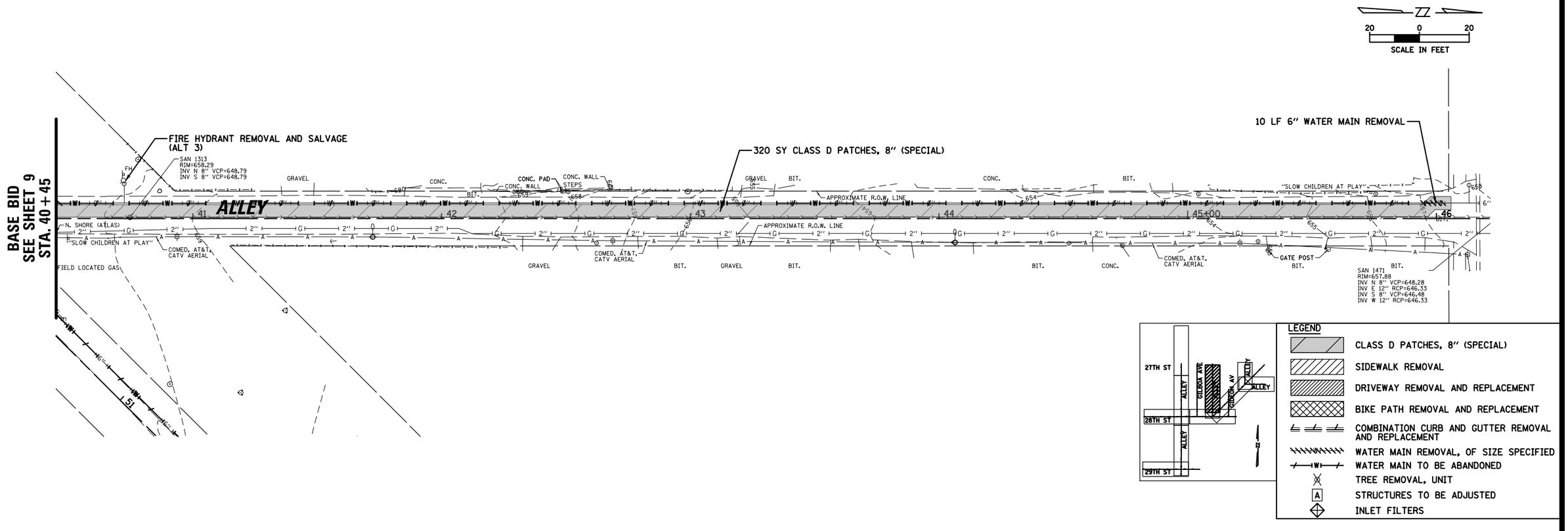
FILE NAME: N:\ZION\230026\CIVIL\REM6_230026_dt2.sht

DSGN.	DJK
DWN.	MEG
CHKD.	LMF
SCALE:	40'
PLOT DATE:	10/24/2023
CAD USER:	dkleinwachter
MODEL:	Default

TITLE:

2023 WATER MAIN REPLACEMENT ALTERNATE 2: EXISTING CONDITIONS AND REMOVAL PLAN

PROJ. NO.	23-0026
DATE:	10/24/2023
SHEET	12 OF 26
DRAWING NO.	12



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CLIENT: CITY OF ZION

NO.	DATE	NATURE OF REVISION	CHKD.

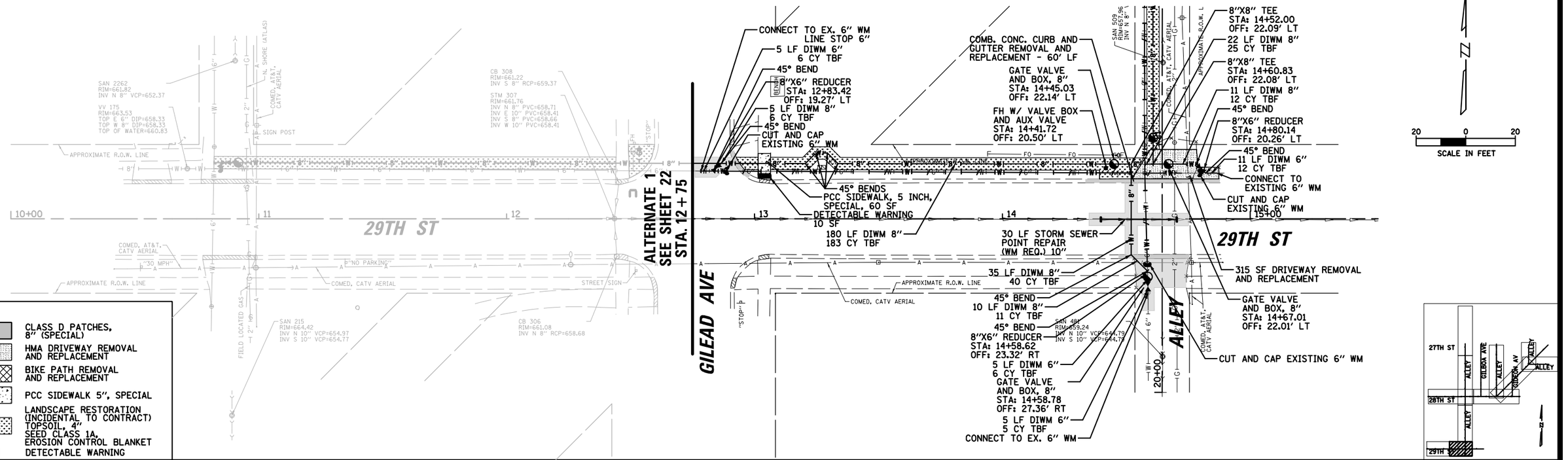
FILE NAME: N:\ZION\230026\CIVIL\REM7_230026_dt3.sht

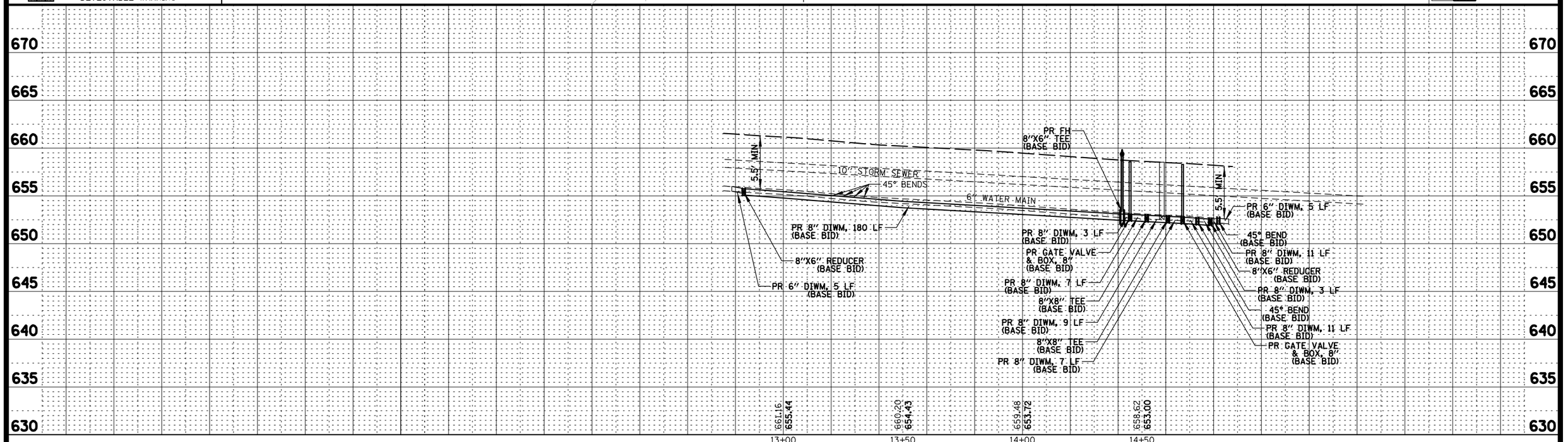
DSGN.	DJK
DWN.	MEG
CHKD.	LMF
SCALE:	40'
PLOT DATE:	10/24/2023
CAD USER:	dkleinwachter
MODEL:	Default

TITLE:

2023 WATER MAIN REPLACEMENT ALTERNATE 3: EXISTING CONDITIONS AND REMOVAL PLAN

PROJ. NO.	23-0026
DATE:	10/24/2023
SHEET	13 OF 26
DRAWING NO.	13





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CLIENT: CITY OF ZION

NO.	DATE	NATURE OF REVISION	CHKD.

FILE NAME: N:\ZION\230026\Civil\RPPL_230026_loc1.sht

DSGN.	DJK
DWN.	MEG
CHKD.	LMF
SCALE:	40'
PLOT DATE:	10/24/2023
CAD USER:	dkleinwachter
MODEL:	Default

TITLE:

2023 WATER MAIN REPLACEMENT
BASE BID: LOCATION 1
WATER MAIN PLAN AND PROFILE

PROJ. NO.	23-0026
DATE:	10/24/2023
SHEET	14 OF 26
DRAWING NO.	14

20 0 20
SCALE IN FEET

23 LF DIWM 8"
24 CY TBF

GATE VALVE AND BOX, 8"
STA: 21+02.70
OFF: 3.69' LT

50 SF BIKE PATH REMOVAL AND REPLACEMENT

385 LF DIWM 8"
15 CY TBF

26 LF STEEL CASING PIPE, 16"
30 LF WATER MAIN IN CASING, 8"

161 LF DIWM 8"
(BASE BID)

MATCH LINE STA. 26+00

260 LF CIPP SANITARY SEWER LINING 8"
(SAN 509 TO SAN 583)

29TH ST

ALLEY

SAN 491
RIM=659.24
INV N 10" VCP=644.79
INV S 10" VCP=644.79

SAN 509
RIM=657.96
INV N 8" VCP=653.11

INL 549
RIM=657.18
INV E 60" RCP=650.38
INV W 60" RCP=650.53

CB 565
RIM=655.18
INV N 12" RCP=653.73

SAN 583
RIM=656.02
INV N 8" VCP=648.57
INV S 8" VCP=648.57

COMED, AT&T, CATV AERIAL

FIELD LOCATED

N. SHORE (AT&T)

APPROXIMATE R.O.W. LINE

CONC.

BIT.

60" RCP

20+00 21 22 23 24 25 25+00

LEGEND

- CLASS D PATCHES, 8" (SPECIAL)
- HMA DRIVEWAY REMOVAL AND REPLACEMENT
- BIKE PATH REMOVAL AND REPLACEMENT
- PCC SIDEWALK 5", SPECIAL
- LANDSCAPE RESTORATION (INCIDENTAL TO CONTRACT) TOPSOIL, 4" SEED CLASS 1A, EROSION CONTROL BLANKET
- DETECTABLE WARNING

27TH ST
28TH ST
29TH ST
ALLEY
GILBOA AVE
GILBOA AV

PR 8" DIWM, 35 LF
EX 6" WM
5.5' MIN.
8"X8" TEE
45° BEND
PR 8" DIWM, 10 LF
45° BEND
PR GATE VALVE & BOX, 8"
PR 8" DIWM, 5 LF
8"X6" REDUCER
PR 6" DIWM, 5 LF
PR GATE VALVE & BOX, 8"

SAN 509
RIM=657.96
INV N 8" VCP=653.11

1.5' MIN.

EX 8" SANITARY SEWER WITH CIPP SEWER LINING

SAN 583
RIM=656.02
INV N 8" VCP=648.57
INV S 8" VCP=648.57

EX 6" WM

INV 650.04

PR 8" DIWM, 385 LF

PR 8" DIWM, 161 LF

26 LF STEEL CASING PIPE, 16"
30 LF WATER MAIN IN CASING, 8"

	20+00	20+50	21+00	21+50	22+00	22+50	23+00	23+50	24+00	24+50	25+00	25+50	26+00
	658.31	658.29	657.43	656.76	656.20	655.81	656.12	656.35	656.70	656.34	655.83	655.91	
		652.77	651.93	651.26	650.82	650.27	650.63	650.85	651.11	650.88	650.13		

665 660 655 650 645 640 635 630 625

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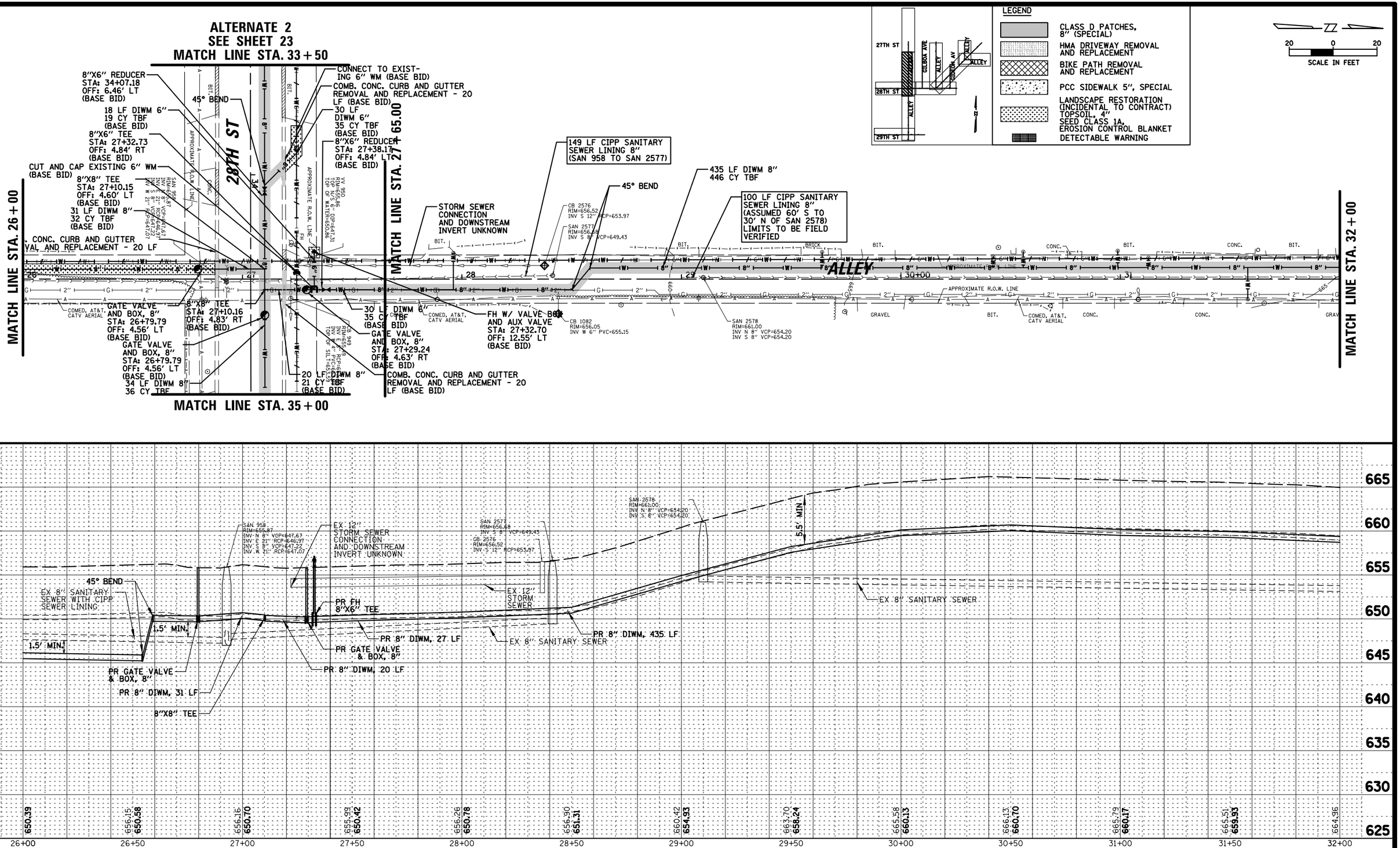
NO.	DATE	NATURE OF REVISION	CHKD.

FILE NAME: N:\ZION\230026\Civil\RPP2_230026_loc2.sht

DSGN.	DJK
DWN.	MEG
CHKD.	LMF
SCALE:	40'
PLOT DATE:	10/24/2023
CAD USER:	dkleinwachter
MODEL:	Default

TITLE:
2023 WATER MAIN REPLACEMENT BASE BID: LOCATION 2 WATER MAIN PLAN AND PROFILE

PROJ. NO.	23-0026
DATE:	10/24/2023
SHEET	15 OF 26
DRAWING NO.	15



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CLIENT: CITY OF ZION

NO.	DATE	NATURE OF REVISION	CHKD.

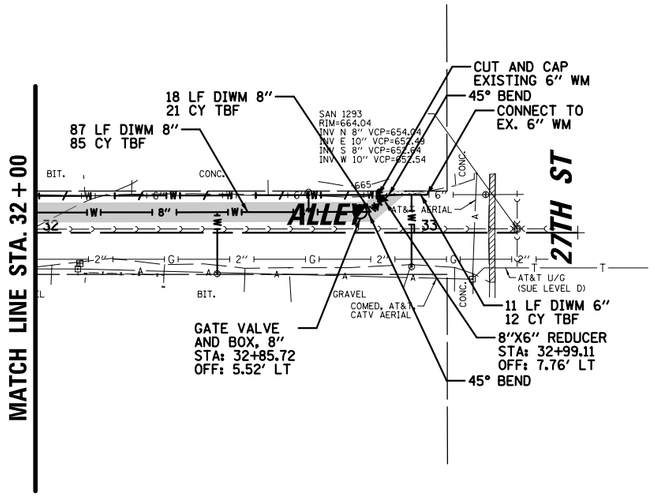
FILE NAME: N:\ZION\230026\Civil\RPP3-230026_loc2&3.sht

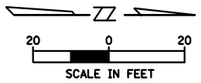
DSGN.	DJK
DWN.	MEG
CHKD.	LMF
SCALE:	40'
PLOT DATE:	10/24/2023
CAD USER:	dkleinwachter
MODEL:	Default

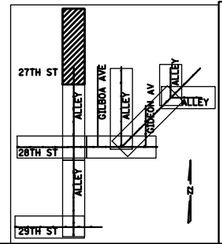
TITLE:

2023 WATER MAIN REPLACEMENT
BASE BID: LOCATION 2 AND 3
WATER MAIN PLAN AND PROFILE

PROJ. NO.	23-0026
DATE:	10/24/2023
SHEET	16 OF 26
DRAWING NO.	16

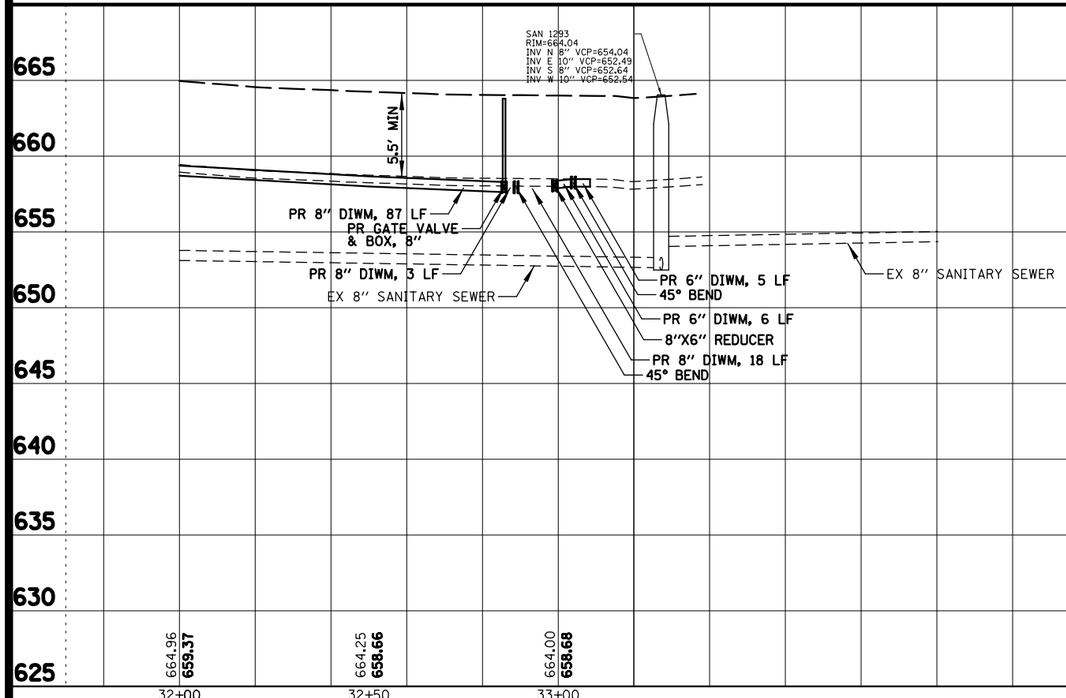






LEGEND

- CLASS D PATCHES, 8" (SPECIAL)
- HMA DRIVEWAY REMOVAL AND REPLACEMENT
- BIKE PATH REMOVAL AND REPLACEMENT
- PCC SIDEWALK 5", SPECIAL
- LANDSCAPE RESTORATION (INCIDENTAL TO CONTRACT) TOPSOIL, 4" SEED CLASS 1A, EROSION CONTROL BLANKET
- DETECTABLE WARNING



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CLIENT: CITY OF ZION

NO.	DATE	NATURE OF REVISION	CHKD.

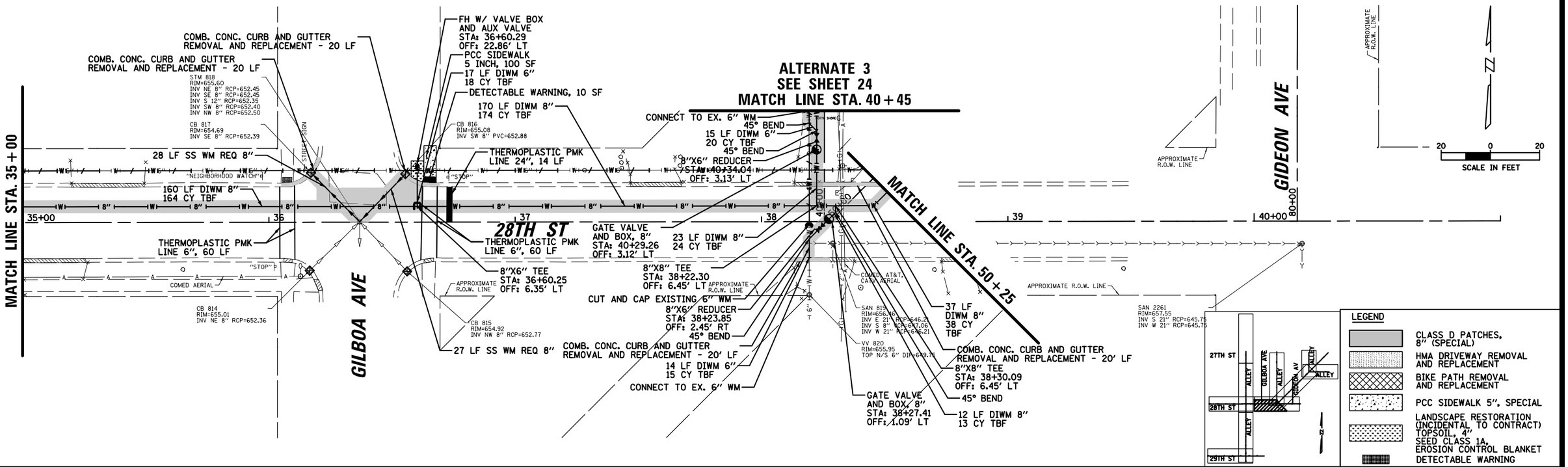
FILE NAME: N:\ZION\230026\Civil\RPP4_230026_loc3.sht

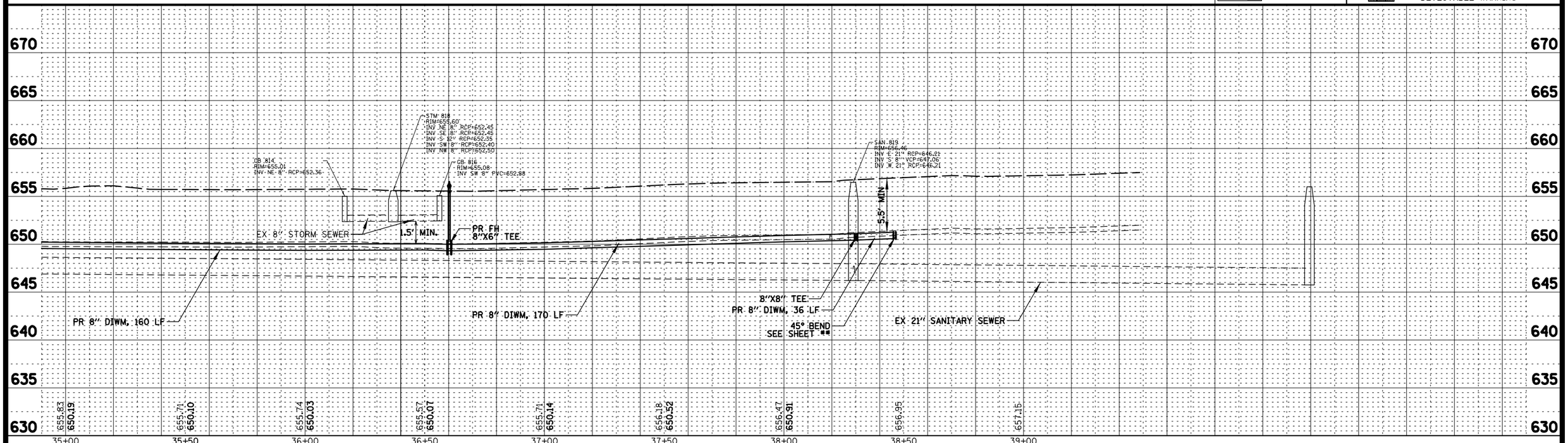
DSGN.	DJK
DWN.	MEG
CHKD.	LMF
SCALE:	40'
PLOT DATE:	10/24/2023
CAD USER:	dklelnwachter
MODEL:	Default

TITLE:

2023 WATER MAIN REPLACEMENT BASE BID: LOCATION 3 WATER MAIN PLAN AND PROFILE

PROJ. NO.	23-0026
DATE:	10/24/2023
SHEET	17 OF 26
DRAWING NO.	17





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CLIENT: CITY OF ZION

NO.	DATE	NATURE OF REVISION	CHKD.

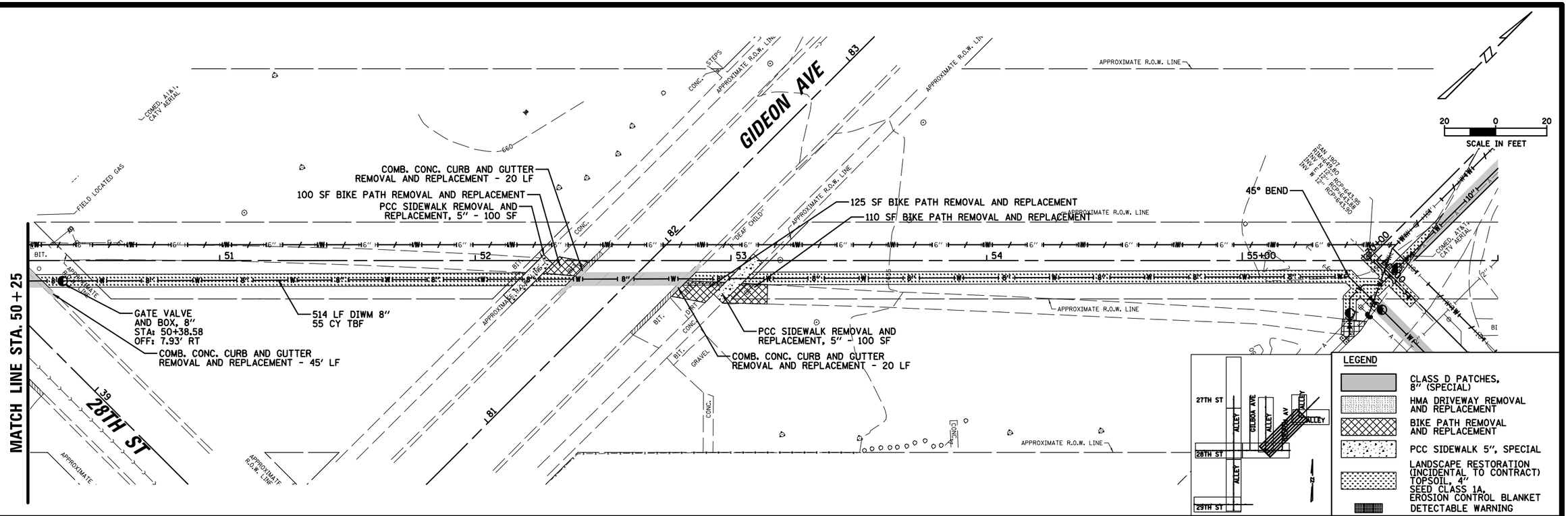
FILE NAME: N:\ZION\230026\Civil\RPP5_230026_loc4.sht

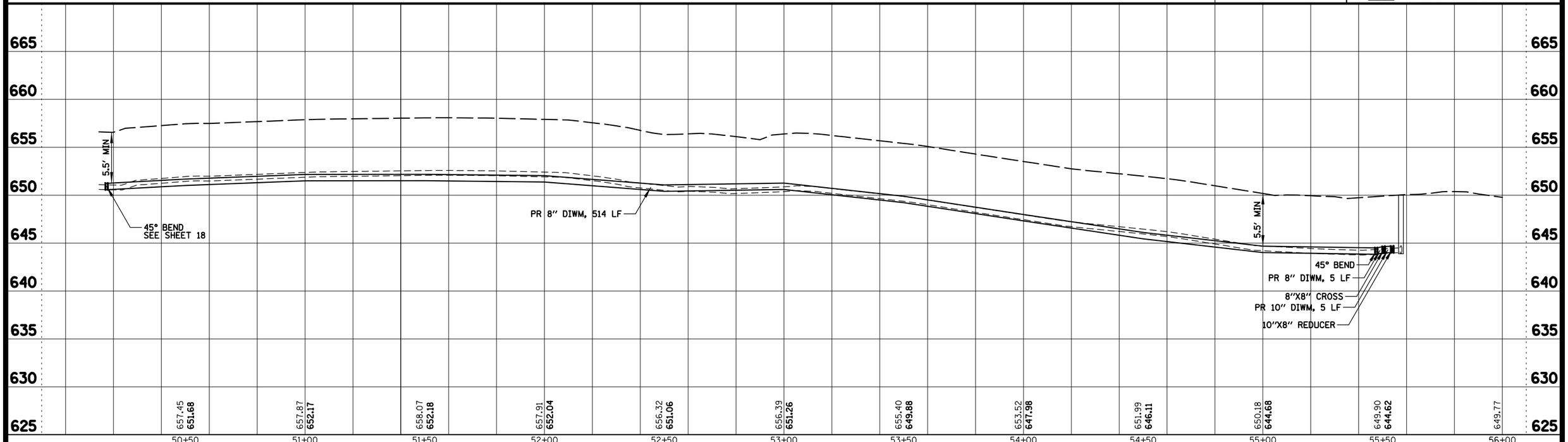
DSGN.	DJK
DWN.	MEG
CHKD.	LMF
SCALE:	40'
PLOT DATE:	10/24/2023
CAD USER:	dkleinwachter
MODEL:	Default

TITLE:

2023 WATER MAIN REPLACEMENT BASE BID: LOCATION 4 WATER MAIN PLAN AND PROFILE

PROJ. NO.	23-0026
DATE:	10/24/2023
SHEET	18 OF 26
DRAWING NO.	18





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CLIENT: CITY OF ZION

NO.	DATE	NATURE OF REVISION	CHKD.

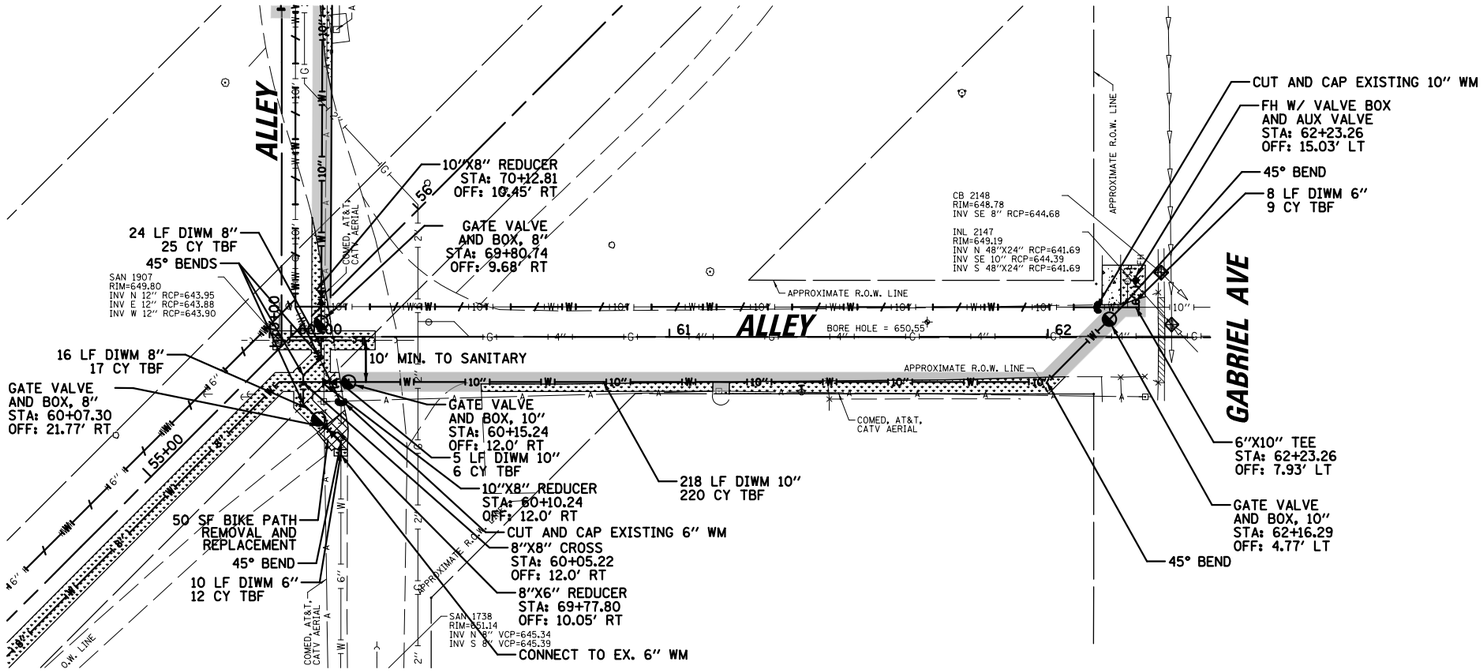
DSGN.	DJK
DWN.	MEG
CHKD.	LMF
SCALE:	40'
PLOT DATE:	10/24/2023
CAD USER:	dkleinwachter
MODEL:	Default

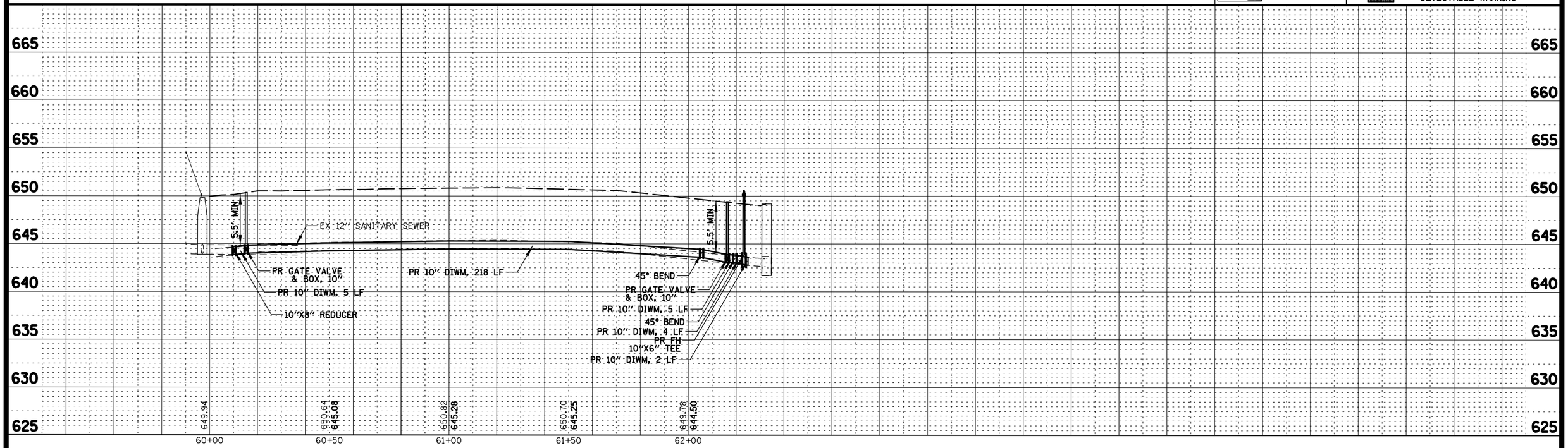
FILE NAME N:\ZION\230026\Civil\RPP6_230026_loc5.sht

TITLE:

2023 WATER MAIN REPLACEMENT BASE BID: LOCATION 5 WATER MAIN PLAN AND PROFILE

PROJ. NO.	23-0026
DATE:	10/24/2023
SHEET	19 OF 26
DRAWING NO.	19





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CLIENT: CITY OF ZION

NO.	DATE	NATURE OF REVISION	CHKD.

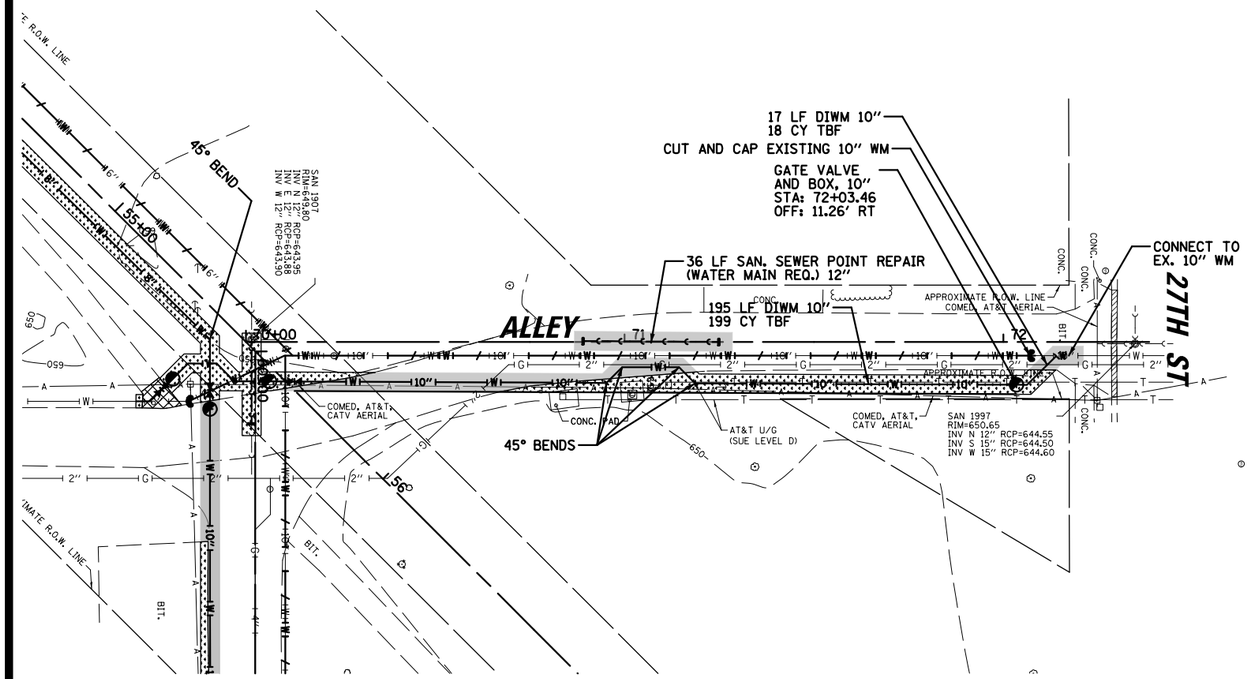
FILE NAME: N:\ZION\230026\Civil\RPP8_230026_loc6.sht

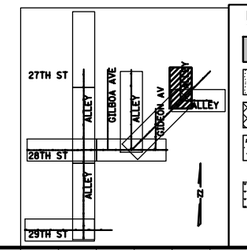
DSGN.	DJK
DWN.	MEG
CHKD.	LMF
SCALE:	40'
PLOT DATE:	10/24/2023
CAD USER:	dkleinwachter
MODEL:	Default

TITLE:

2023 WATER MAIN REPLACEMENT
BASE BID: LOCATION 6
WATER MAIN PLAN AND PROFILE

PROJ. NO.	23-0026
DATE:	10/24/2023
SHEET	20 OF 26
DRAWING NO.	20





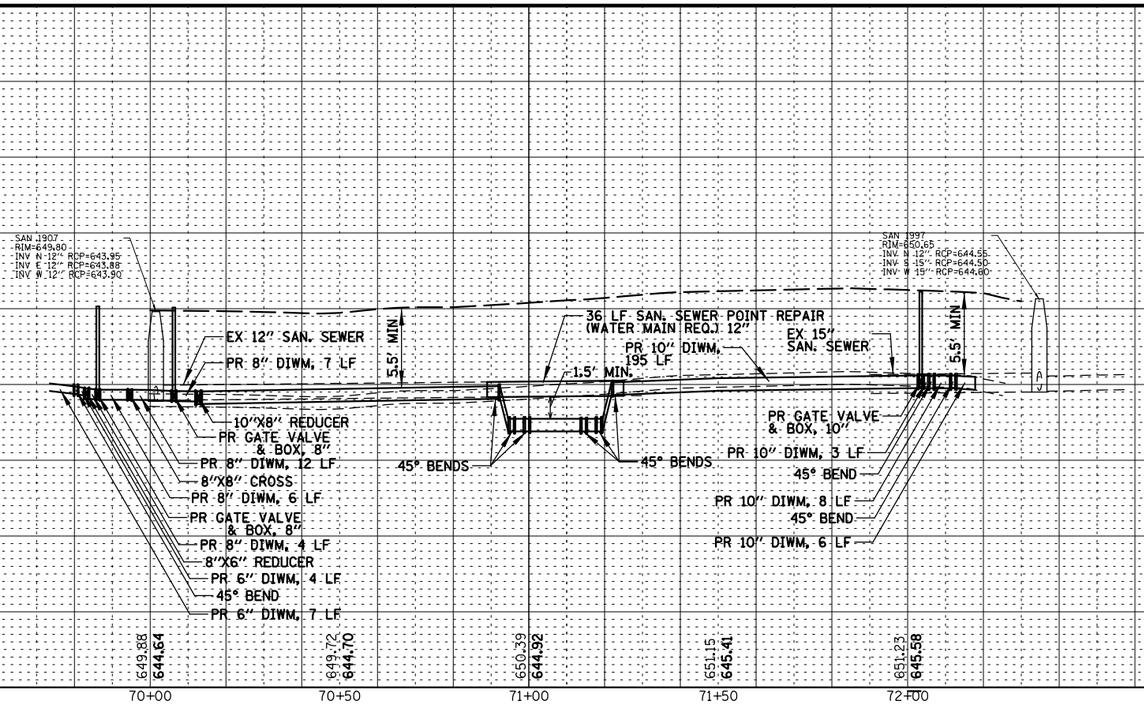
LEGEND

- CLASS D PATCHES, 8" (SPECIAL)
- HMA DRIVEWAY REMOVAL AND REPLACEMENT
- BIKE PATH REMOVAL AND REPLACEMENT
- PCC SIDEWALK 5", SPECIAL
- LANDSCAPE RESTORATION (INCIDENTAL TO CONTRACT) TOPSOIL, 4" SEED CLASS 1A, EROSION CONTROL BLANKET
- DETECTABLE WARNING

ZZ

20 0 20

SCALE IN FEET



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CITY OF ZION

NO.	DATE	NATURE OF REVISION	CHKD.

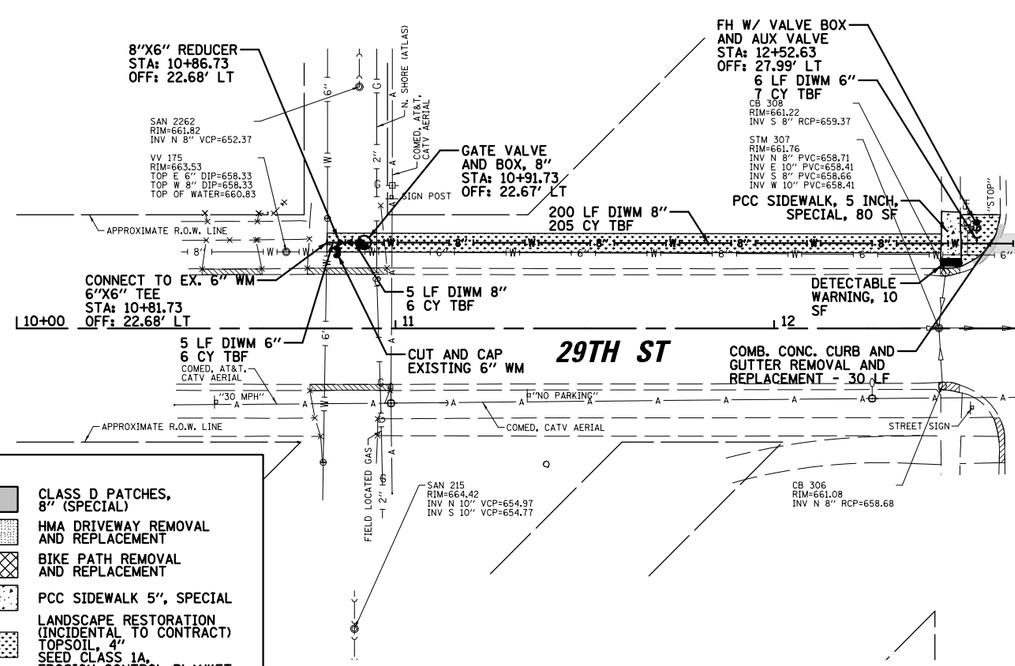
FILE NAME: N:\ZION\230026\Civil\RPP9_230026_loc7.sht

DSGN.	DJK
DWN.	MEG
CHKD.	LMF
SCALE:	40'
PLOT DATE:	10/24/2023
CAD USER:	dkleinwachter
MODEL:	Default

TITLE:

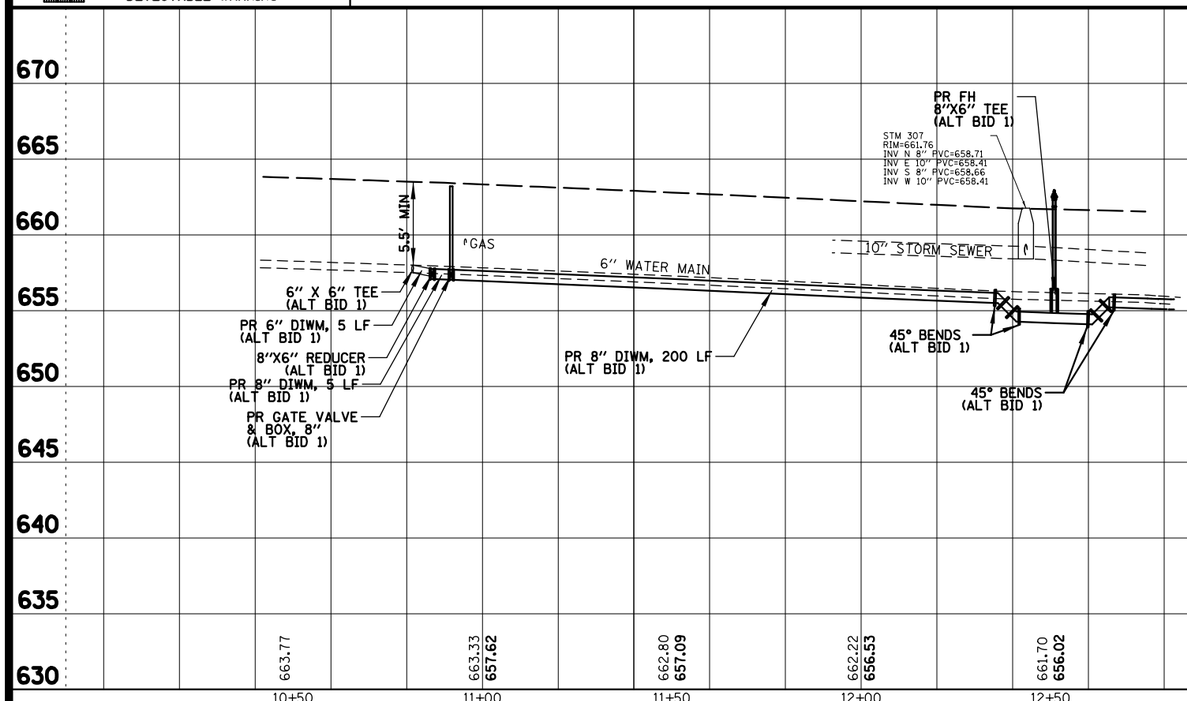
2023 WATER MAIN REPLACEMENT BASE BID: LOCATION 7 WATER MAIN PLAN AND PROFILE

PROJ. NO.	23-0026
DATE:	10/24/2023
SHEET	21 OF 26
DRAWING NO.	21



LEGEND

- CLASS D PATCHES, 8" (SPECIAL)
- HMA DRIVEWAY REMOVAL AND REPLACEMENT
- BIKE PATH REMOVAL AND REPLACEMENT
- PCC SIDEWALK 5", SPECIAL
- LANDSCAPE RESTORATION (INCIDENTAL TO CONTRACT) TOPSOIL, 4" SEED CLASS 1A, EROSION CONTROL BLANKET
- DETECTABLE WARNING



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CLIENT: CITY OF ZION

NO.	DATE	NATURE OF REVISION	CHKD.

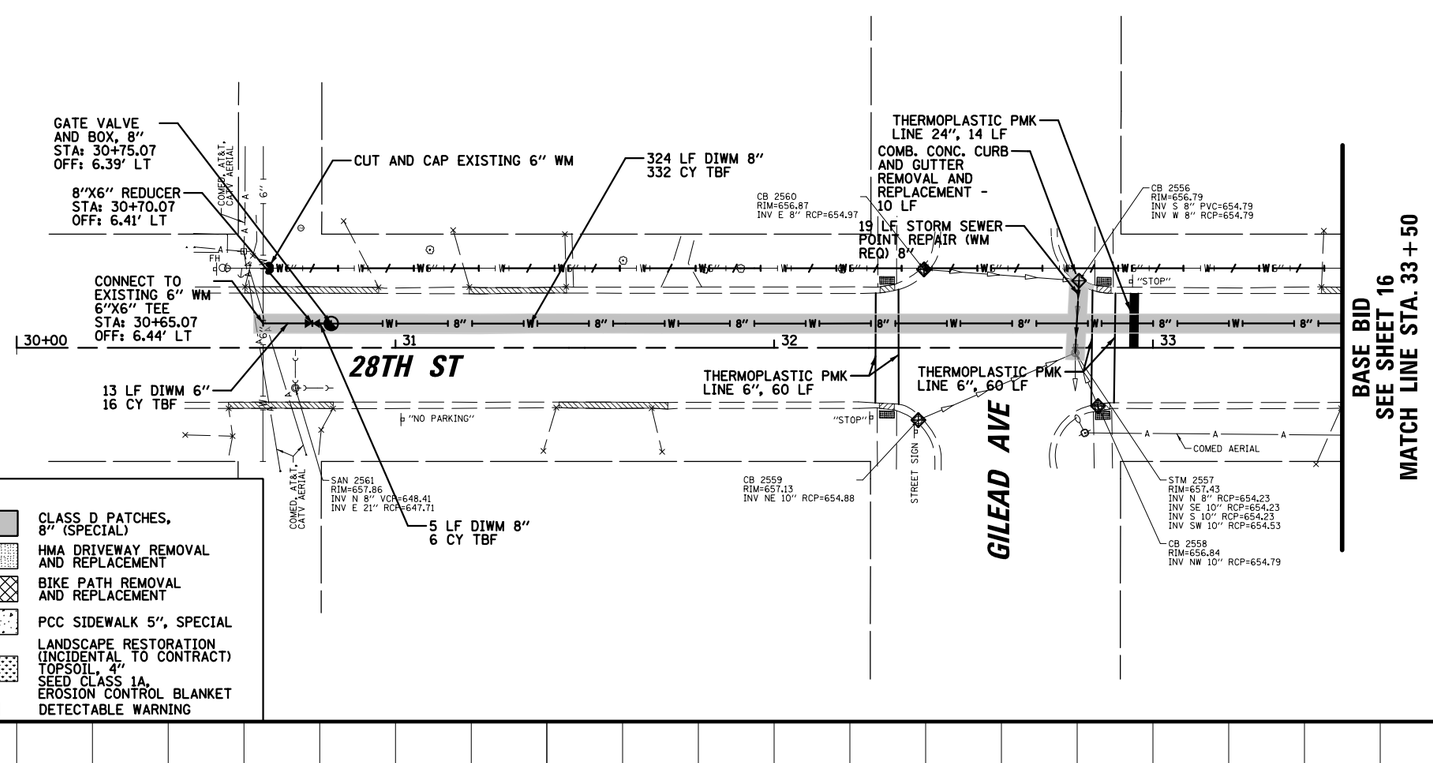
FILE NAME: N:\ZION\230026\Civil\RPP10_230026_dtl.sht

DSGN.	DJK
DWN.	MEG
CHKD.	LMF
SCALE:	40'
PLOT DATE:	10/24/2023
CAD USER:	dkleinwachter
MODEL:	Default

TITLE:

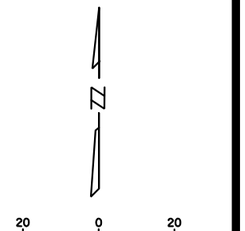
2023 WATER MAIN REPLACEMENT ALTERNATE 1: LOCATION 8 WATER MAIN PLAN AND PROFILE

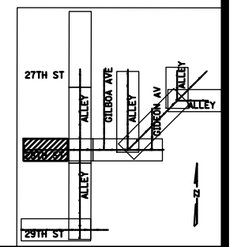
PROJ. NO.	23-0026
DATE:	10/24/2023
SHEET	22 OF 26
DRAWING NO.	22

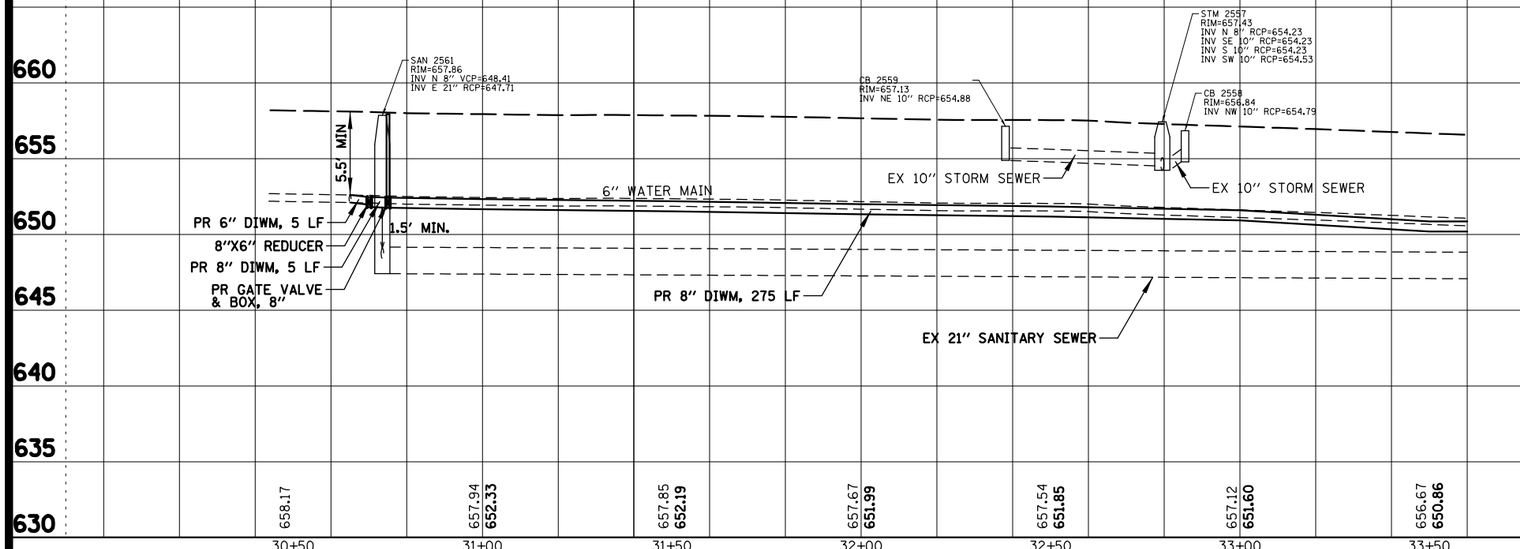


LEGEND

- CLASS D PATCHES, 8" (SPECIAL)
- HMA DRIVEWAY REMOVAL AND REPLACEMENT
- BIKE PATH REMOVAL AND REPLACEMENT
- PCC SIDEWALK 5", SPECIAL
- LANDSCAPE RESTORATION (INCIDENTAL TO CONTRACT) TOPSOIL, 4" SEED CLASS 1A, EROSION CONTROL BLANKET
- DETECTABLE WARNING







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Rosemont, Illinois 60018
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CLIENT: CITY OF ZION

NO.	DATE	NATURE OF REVISION	CHKD.

FILE NAME: N:\ZION\230026\Civil\RPPll_230026_alt2.sht

DSGN.	DJK
DWN.	MEG
CHKD.	LMF
SCALE:	40'
PLOT DATE:	10/24/2023
CAD USER:	dklelnwachter
MODEL:	Default

TITLE:

2023 WATER MAIN REPLACEMENT ALTERNATE 2: LOCATION 9 WATER MAIN PLAN AND PROFILE

PROJ. NO.	23-0026
DATE:	10/24/2023
SHEET	23 OF 26
DRAWING NO.	23

BASE BID
SEE SHEET 18
MATCH LINE STA. 40 + 45

FH W/ VALVE BOX
AND AUX VALVE
STA: 40+67.41
OFF: 14.82' LT

10 LF DIWM 6"
11 CY TBF

8"X6" TEE
STA: 40+67.42
OFF: 3.13' RT

570 LF DIWM 8"
581 CY TBF

CONNECT TO EX. 6" WM

10 LF DIWM 6"
11 CY TBF

45° BEND

CUT AND CAP EXISTING 6" WM

8"X6" REDUCER
STA: 45+93.24
OFF: 3.19' LT

SCALE IN FEET
20 0 20

SAN 1313
RIM=658.29
INV N 8" VCP=648.79
INV S 8" VCP=648.79

SAN 1471
RIM=657.88
INV N 8" VCP=648.28
INV E 12" RCP=646.33
INV S 8" VCP=646.48
INV W 12" RCP=646.33

OSBM 23-27

N. SHORE (ATLAS)

"SLOW CHILDREN AT PLAY"

FIELD LOCATED GAS

COMED, AT&T, CATV AERIAL

GRAVEL

CONC.

CONC. PAD

CONC. WALL

STEPS

BIT.

ALLEY

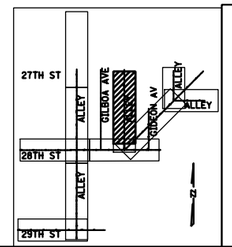
APPROXIMATE R.O.W. LINE

GATE POST

GATE VALVE
AND BOX, 8"
STA: 45+87.85
OFF: 3.19' LT
45° BEND

550 LF CIPP SANITARY
SEWER LINING 8"
(SAN 1313 TO SAN 1471)

100 SF F



LEGEND

- CLASS D PATCHES, 8" (SPECIAL)
- HMA DRIVEWAY REMOVAL AND REPLACEMENT
- BIKE PATH REMOVAL AND REPLACEMENT
- PCC SIDEWALK 5", SPECIAL
- LANDSCAPE RESTORATION (INCIDENTAL TO CONTRACT) TOPSOIL, 4" SEED CLASS 1A, EROSION CONTROL BLANKET
- DETECTABLE WARNING

BASE BID ALTERNATE 3

PR 6" DIWM, 8 LF
45° BEND
PR 6" DIWM, 7 LF
PR GATE VALVE & BOX, 8"
PR 8" DIWM, 23 LF
8"X8" TEE
PR 8" DIWM, 3 LF
45° BEND
PR 8" DIWM, 4 LF
PR GATE VALVE & BOX, 8"
PR 8" DIWM, 5 LF
8"X6" REDUCER

5.5' MIN

PR 8" DIWM, 570 LF

EX 8" SANITARY SEWER WITH CIPP SEWER LINING

EX 8" SANITARY SEWER WITH CIPP SEWER LINING

45° BEND
PR 8" DIWM, 4 LF
PR GATE VALVE & BOX, 8"
PR 8" DIWM, 7 LF
8"X6" REDUCER
PR 6" DIWM, 5 LF
45° BEND
PR 6" DIWM, 5 LF

656.68	659.01	659.66	659.56	658.20	655.99	654.27	653.64	653.76	653.88	655.09	657.21
651.16	**653.47**	**654.10**	**653.95**	**652.66**	**650.41**	**648.81**	**648.26**	**648.07**	**648.24**	**649.42**	**651.81**

40+00 40+50 41+00 41+50 42+00 42+50 43+00 43+50 44+00 44+50 45+00 45+50 46+00

670 665 660 655 650 645 640 635 630

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CLIENT: CITY OF ZION

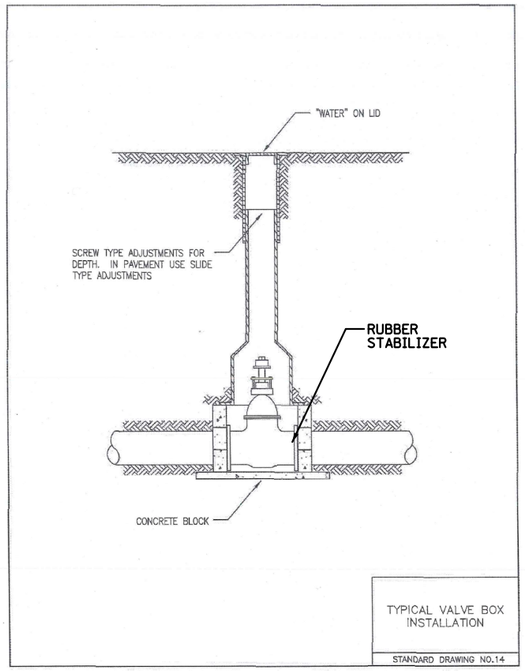
NO.	DATE	NATURE OF REVISION	CHKD.

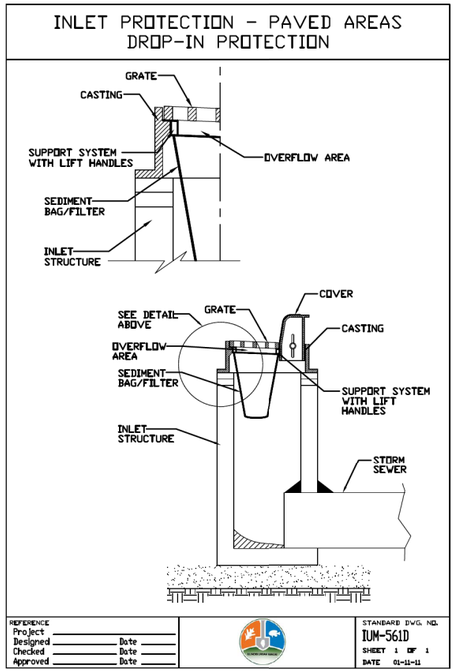
FILE NAME: N:\ZION\230026\Civil\RPP12_230026_dt3.sht

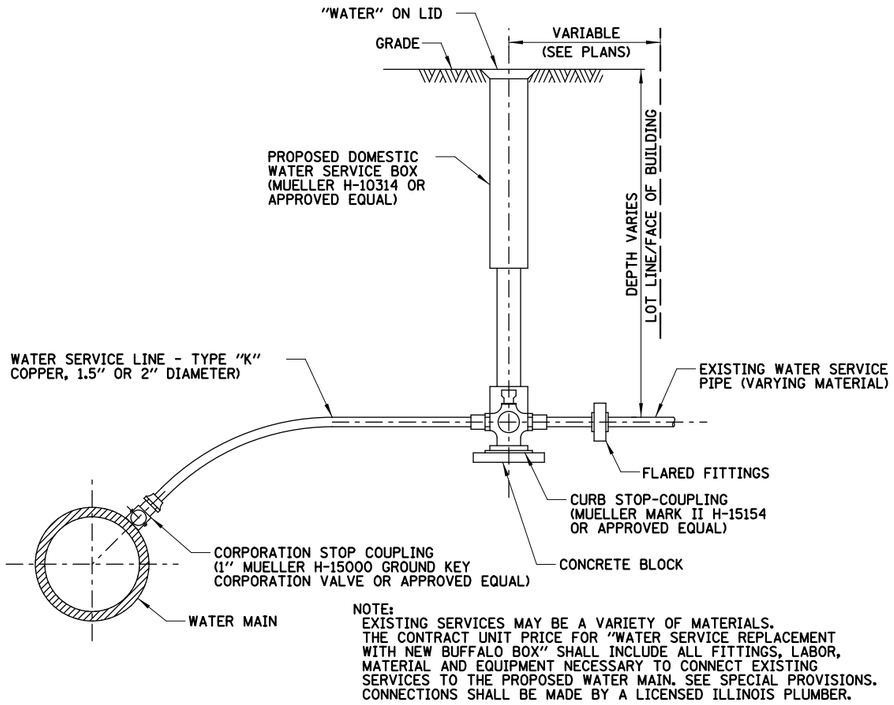
DSGN.	DJK
DWN.	MEG
CHKD.	LMF
SCALE:	40'
PLOT DATE:	10/24/2023
CAD USER:	dkleinwachter
MODEL:	Default

TITLE:
2023 WATER MAIN REPLACEMENT ALTERNATE 3: LOCATION 10 WATER MAIN PLAN AND PROFILE

PROJ. NO.	23-0026
DATE:	10/24/2023
SHEET	24 OF 26
DRAWING NO.	24



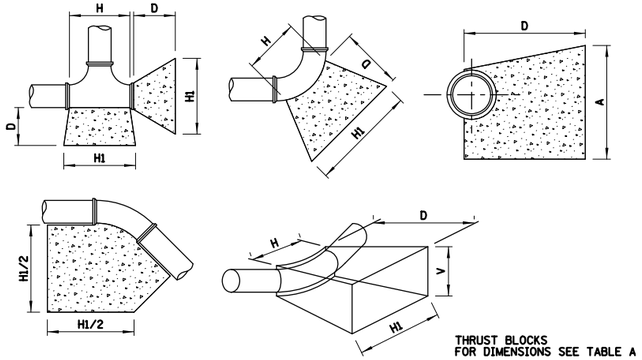




NOTE:
EXISTING SERVICES MAY BE A VARIETY OF MATERIALS. THE CONTRACT UNIT PRICE FOR "WATER SERVICE REPLACEMENT WITH NEW BUFFALO BOX" SHALL INCLUDE ALL FITTINGS, LABOR, MATERIAL AND EQUIPMENT NECESSARY TO CONNECT EXISTING SERVICES TO THE PROPOSED WATER MAIN. SEE SPECIAL PROVISIONS. CONNECTIONS SHALL BE MADE BY A LICENSED ILLINOIS PLUMBER.

TYPICAL WATER SERVICE CONNECTION

N.T.S.

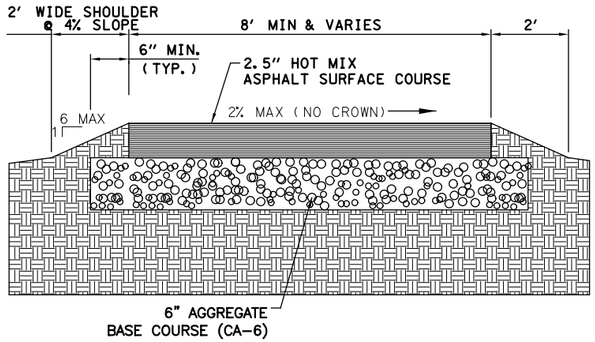


SIZE OF PIPE	TAPPING TEES, SLEEVES AND PLUGS					90° BENDS					45° BENDS OR LESS				
	H1	H	V	D	C. FT.	H1	H	V	D	C. FT.	H1	H	V	D	C. FT.
12"	54"	30"	24"	24"	13.40	54"	32"	36"	36"	18.15	42"	18"	24"	24"	9.60
8"	36"	18"	18"	18"	5.05	39"	18"	24"	18"	7.50	30"	11"	18"	18"	3.95
6"	24"	16"	18"	18"	3.50	30"	16"	18"	18"	4.05	24"	10"	16"	18"	3.20
4"	20"	13"	15"	15"	2.15	24"	12"	13"	13"	1.75	20"	8"	12"	12"	1.20

WATER MAIN THRUST BLOCKING - TABLE A

(NOT TO SCALE)

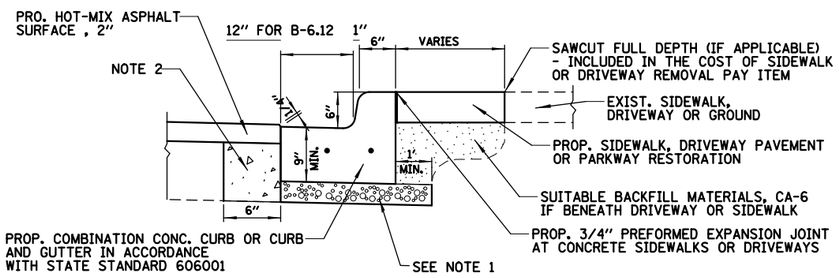
NOTE:
THRUST BLOCKING TO BE INSTALLED AT ALL HORIZONTAL AND VERTICAL BENDS, CAPS, VALVES, HYDRANTS AND AT LOCATIONS DIRECTED BY ENGINEER. THRUST BLOCK TO BE READY MIXED PORTLAND CEMENT CONCRETE, PLACED BETWEEN SOLID GROUND AND FITTING OR PRECAST SOLID CONCRETE BLOCK, AND SHALL BE ANCHORED IN SUCH A MANNER THAT PIPE AND FITTING WILL BE ACCESSIBLE FOR REPAIR. ALL ENDS OD 11 1/4 " OR MORE, ALL TEES AND ALL PLUGS SHALL BE PROTECTED AS SHOWN. WHERE CONDITIONS PREVENT THE USE OF CONCRETE THRUST BLOCKS, RESTRAINED JOINTS OF A TYPE APPROVED BY THE ENGINEER MAY BE USED.



MULTI-USE PATH DETAIL

CITY OF ZION
WATER SERVICE INSTALLATION DETAIL

(NOT TO SCALE)



ALL REQUIRED EARTH EXCAVATION AND SUITABLE BACKFILL TO CONSTRUCT COMBINATION CONCRETE CURB AND GUTTER WILL BE INCLUDED IN THE COST FOR COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.12

1. MINIMUM 4" THICK AGGREGATE BASE SHALL BE PROVIDED UNDER NEW CURB AND GUTTER TO 6" BEYOND BACK OF CURB.
2. FRONT FILL SHALL BE VIRGIN CA-6 ON FULL DEPTH STREETS OR PCC ON GRIND & OVERLAY STREETS.

COMBINATION CONCRETE CURB AND GUTTER, REMOVAL AND REPLACEMENT

NOT TO SCALE

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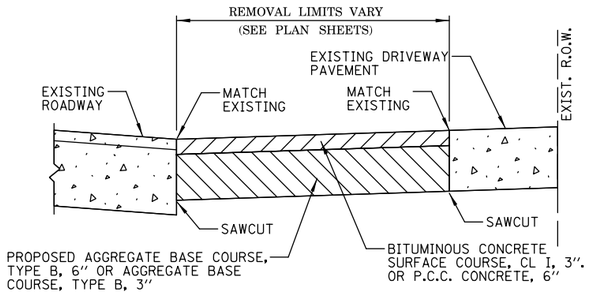
FILE NAME \\tbg.net\CBBEL\CBBELDFT\ZION\230026\CIVIL\DET_230026_01.sht

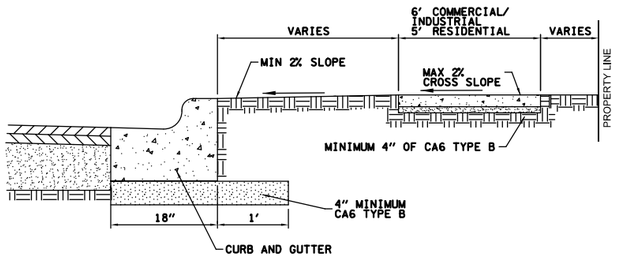
DSGN.	DJK
DWN.	MEG
CHKD.	LMF
SCALE:	40'
PLOT DATE:	10/24/2023
CAD USER:	dkleinwachter
MODEL:	Default

TITLE:
2023 WATER MAIN REPLACEMENT CONSTRUCTION DETAILS

PROJ. NO.	23-0026
DATE:	10/24/2023
SHEET	25 OF 26
DRAWING NO.	25

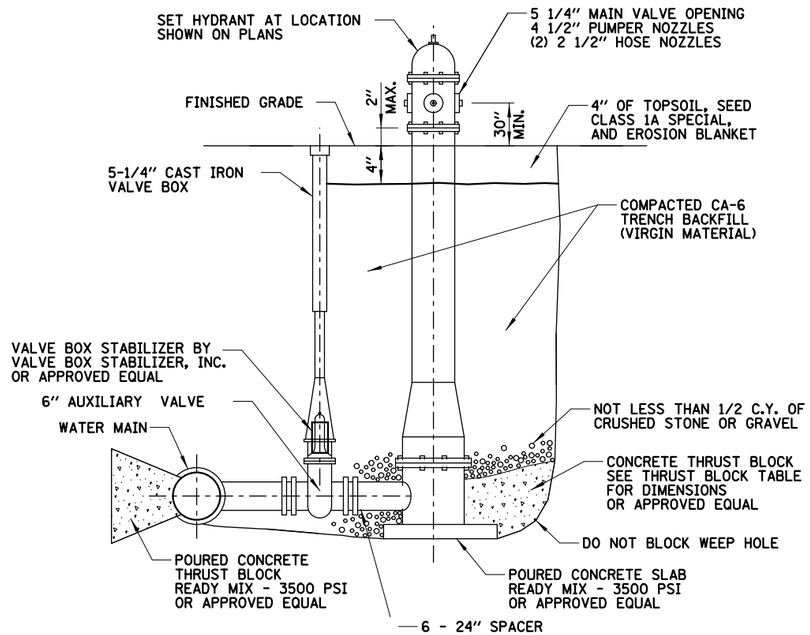


TYPICAL DRIVEWAY REPLACEMENT DETAIL



NOTES:

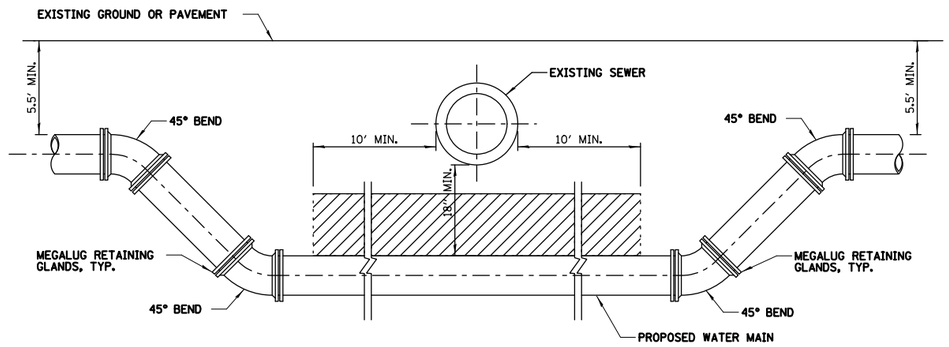
1. THE CONCRETE SIDEWALK SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION 424 OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
2. THE CONCRETE SHALL CONFORM TO SECTION 1020 CLASS PV AND SHALL BE A HAVE A 3-INCH SLUMP AND SHALL DEVELOP A MINIMUM OF 3,500 PSI COMPRESSIVE STRENGTH AT 14 DAYS.
3. SIDEWALK SHALL BE 5" THICK (MINIMUM). THE SIDEWALK PORTION OF THE DRIVEWAY SHALL MATCH THE DEPTH OF THE DRIVEWAY AND BE POURED SEPARATELY.
4. NO CHLORIDE ADDITIVE WILL BE PERMITTED IN THE CONCRETE.
5. ALL SIDEWALKS MUST CONFORM TO THE AMERICANS WITH DISABILITIES ACT. THE MAXIMUM ALLOWABLE RUNNING SLOPE IS 1:20.
6. TOOLED CONTROL JOINTS SHALL BE INSTALLED ON 5' CENTERS.
7. FIBER EXPANSION JOINTS SHALL BE INSTALLED AT 50' CENTERS MAX AND WHERE THE SIDEWALK ABUTTS CURB OR EXISTING SIDEWALK, AND AT THE END OF EACH POUR.
8. THE SIDEWALK SHALL HAVE A BROOM FINISH.
9. A PROTECTIVE SURFACE TREATMENT CONSISTENT TO IDOT ARTICLE 420.21 SHALL BE APPLIED.



NOTE:
HEIGHT FROM FINISHED GRADE TO WATER MAIN ELEVATION VARIES

CITY OF ZION FIRE HYDRANT DETAIL

(NOT TO SCALE)



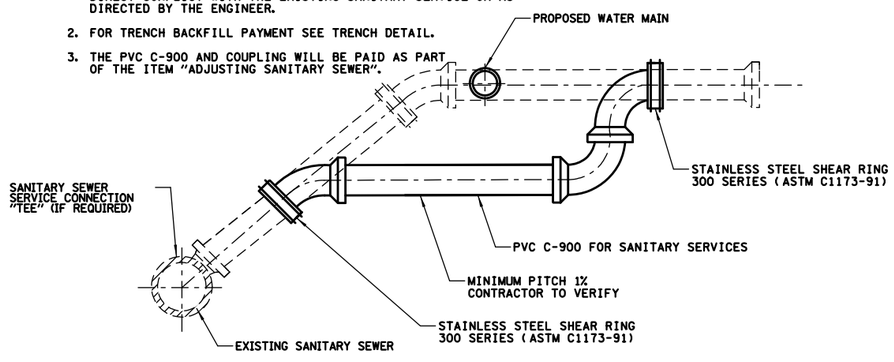
NOTE:
1. OMIT GRANULAR CRADLE FOR PROPOSED WATER MAIN
2. PLACE 1.0' OF CLASS IV MATERIAL OVER THE LENGTH OF THE WATER MAIN AND COMPACT TO 95% OF STANDARD PROCTOR MAXIMUM DENSITY.
3. PROVIDE ADEQUATE SUPPORT FOR EXISTING SEWER LINE TO PREVENT DAMAGE DUE TO SETTLEMENT.

PROPOSED WATER MAIN BELOW EXISTING SEWER

(NOT TO SCALE)

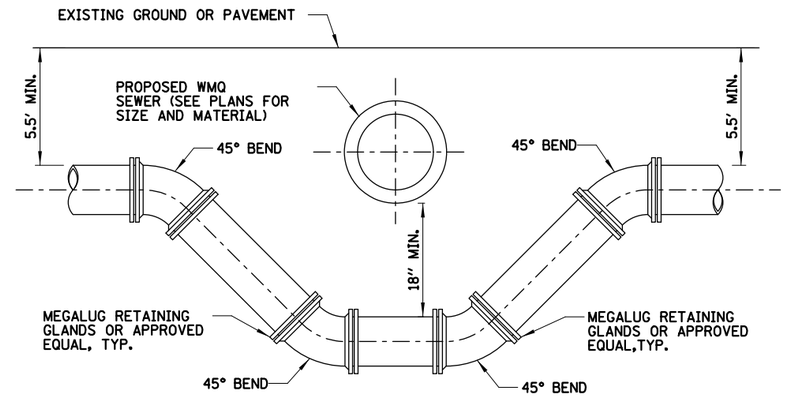
NOTE:

1. THE CONTRACTOR WILL BE PAID FOR ADJUSTING SANITARY SEWER, 8-INCH OR LESS ONLY WHEN THE PROPOSED WATER MAIN IS IN DIRECT CONFLICT WITH THE EXISTING SANITARY SERVICE OR AS DIRECTED BY THE ENGINEER.
2. FOR TRENCH BACKFILL PAYMENT SEE TRENCH DETAIL.
3. THE PVC C-900 AND COUPLING WILL BE PAID AS PART OF THE ITEM "ADJUSTING SANITARY SEWER".



ADJUSTING SANITARY SEWER, 8-INCH OR LESS

(NOT TO SCALE)



NOTE:
CONTRACTOR MAY ALSO DEFLECT PIPE AS PER MANUFACTURER'S RECOMMENDATIONS

METHOD OF CROSSING UNDER PROPOSED SEWERS

N.T.S.

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DSGN.	DJK
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