REVISED 6.30.25
FOR BIDDING PURPOSES ONLY

CITY OF SIOUX FALLS	PROJECT	SHEET	TOTAL SHEETS
	PCN X06R / CIP No. 11017	1	27
Plotting Date: 7/22/2025			

City of Sioux Falls

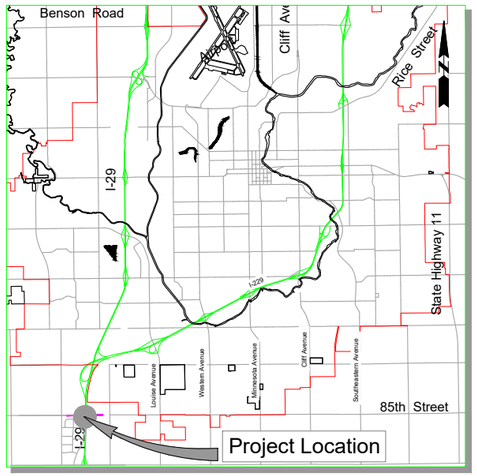
Lincoln County

Plans for

85TH ST WATER MAIN IMPROVEMENTS

85TH ST & I-29 WATER MAIN CROSSING

PCN X06R
CIP No. 11017

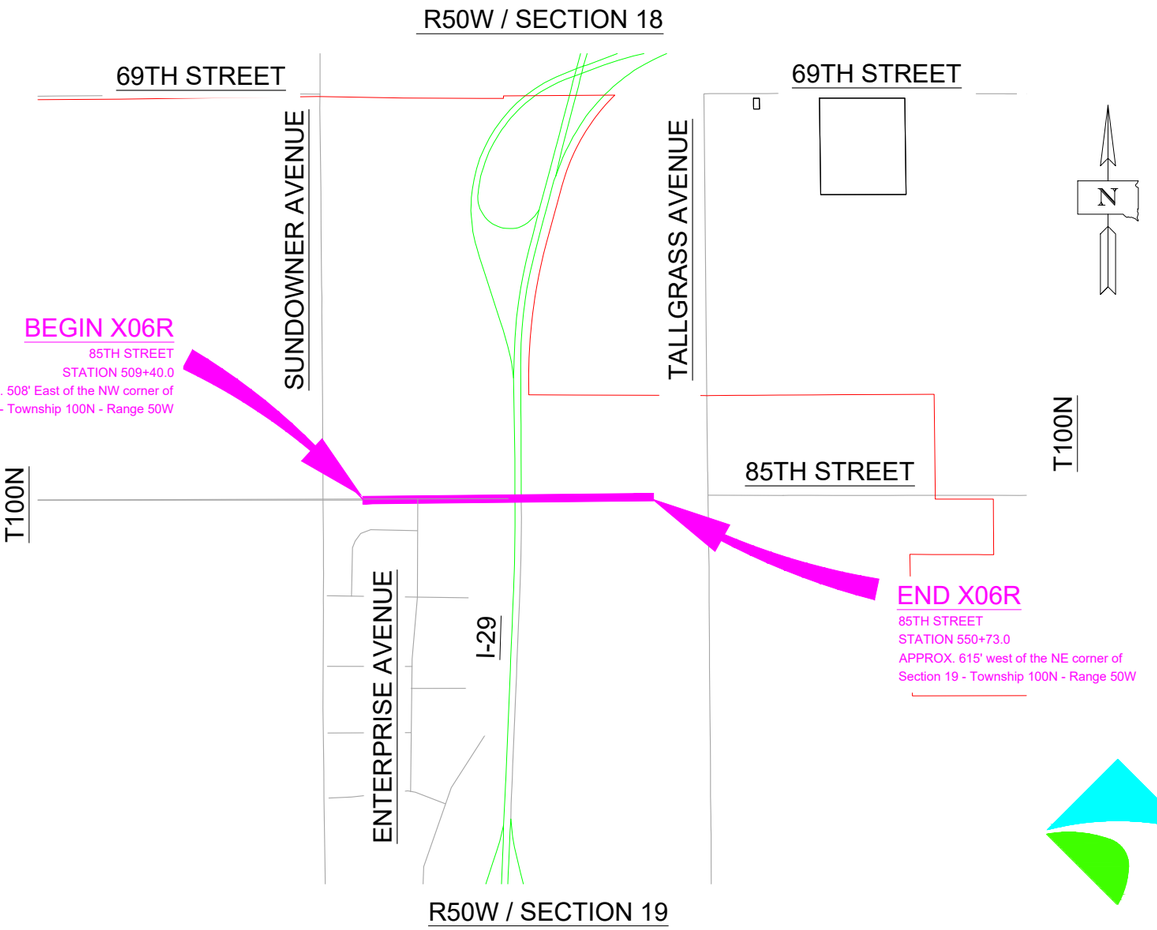


Vicinity Map

Index of Sheets

Drawing indicates general utility locations only. Neither the correctness or completeness of locations are guaranteed.

Prior to excavation contact:
SOUTH DAKOTA ONE CALL (1-800-781-7474)



Plans By:

SEH
PHONE: 605.330.7000
5016 S BUR OAK PL
SUITE 1
SIOUX FALLS, SD 57108
WWW.SEHINC.COM

REGISTERED PROFESSIONAL ENGINEER
REG. NO.
14872
KELSEY B. WALTZ
SOUTH DAKOTA

I, Kelsey Waltz, hereby certify that these plans were prepared by me, or under my direct supervision and that I am a duly registered engineer under the laws of the State of South Dakota.

KELSEY B. WALTZ	14872 S.D. No.	06.30.2025 Date

City of Sioux Falls
PUBLIC WORKS - DIVISION OF ENGINEERING
CITY CENTER
231 NORTH DAKOTA AVENUE
SIOUX FALLS, SD 57104 (605) 367-8601

Approved

City Engineer Date

2

CITY OF SIOUX FALLS
PUBLIC WORKS
Providing a Better Quality of Life for You!

October 15, 2025

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LEGEND OF SYMBOLS

FOR BIDDING PURPOSES ONLY

CITY OF SIOUX FALLS	PROJECT	SHEET	TOTAL SHEETS
	PCN X06R / CIP No. 11017	2	27
Plotting Date: 7/22/2025			

- Anchor
- Antenna
- Approach
- Assumed Corner
- Azimuth Marker
- BBQ Grill/ Fireplace
- Bearing Tree
- Bench Mark
- Box Culvert
- Bridge
- Brush/Hedge
- Buildings
- Bulk Tank
- Cattle Guard
- Cemetery
- Centerline
- Cistern
- Clothes Line
- Concrete Symbol
- Control Point
- Creek Edge
- Curb/Gutter
- Curb
- Dam Grade/Dike/Levee
- Deck Edge
- Ditch Block
- Doorway Threshold
- Drainage Profile
- Drop Inlet
- Edge Of Asphalt
- Edge Of Concrete
- Edge Of Gravel
- Edge Of Other
- Edge Of Shoulder
- Electric Transformer/Power Junction Box
- Fence Barbwire
- Fence Chainlink
- Fence Electric
- Fence Miscellaneous
- Fence Rock
- Fence Snow
- Fence Wood
- Fence Woven
- Fire Hydrant
- Flag Pole
- Flower Bed
- Gas Valve Or Meter
- Gas Pump Island
- Grain Bin
- Guardrail
- Gutter
- Guy Pole
- Haystack
- Highway ROW Marker
- Interstate Close Gate
- Iron Pin
- Irrigation Ditch
- Lake Edge
- Lawn Sprinkler
- Mailbox
- Manhole Electric
- Manhole Gas
- Manhole Miscellaneous
- Manhole Sanitary Sewer
- Manhole Storm Sewer
- Manhole Telephone
- Manhole Water
- Merry-Go-Round
- Microwave Radio Tower
- Miscellaneous Line
- Miscellaneous Property Corner
- Miscellaneous Post
- Overhang Or Encroachment
- Overhead Utility Line (OH)
- Parking Meter
- Pedestrian Push Button Pole
- Pipe With End Section
- Pipe With Headwall
- Pipe Without End Section
- Playground Slide
- Playground Swing
- Power And Light Pole
- Power And Telephone Pole
- Power Meter
- Power Pole
- Power Pole And Transformer
- Power Tower Structure
- Propane Tank
- Property Pipe
- Property Pipe With Cap
- Property Stone
- Public Telephone
- Railroad Crossing Signal
- Railroad Milepost Marker
- Railroad Profile
- Railroad ROW Marker
- Railroad Signs
- Railroad Switch
- Railroad Track
- Railroad Trestle
- Rebar
- Rebar With Cap
- Reference Mark
- Retaining Wall
- Riprap
- River Edge
- Rock And Wire Baskets
- Rockpiles
- Satellite Dish
- Septic Tank
- Shrub Tree
- Sidewalk
- Sign Face
- Sign Post
- Slough Or Marsh
- Spring
- Stream Gauge
- Street Marker
- Subsurface Utility Exploration Test Hole
- Telephone Fiber Optics (T/F)
- Telephone Junction Box
- Telephone Pole
- Television Cable Jct Box
- Television Tower
- Test Wells/Bore Holes
- Traffic Sign Double Face
- Traffic Sign One Post
- Traffic Sign Two Post
- Traffic Signal
- Trash Barrel
- Tree Belt
- Tree Coniferous
- Tree Deciduous
- Tree Stumps
- Triangulation Station
- Underground Electric Line (P)
- Underground Gas Line (G)
- Underground High Pressure Gas Line (HG)
- Underground Sanitary Sewer (S)
- Underground Storm Sewer (S)
- Underground Tank
- Underground Telephone Line (T)
- Underground Television Cable (TV)
- Underground Water Line (W)
- Water Fountain
- Water Hydrant
- Water Meter
- Water Tower
- Water Valve
- Water Well
- Weir Rock
- Windmill
- Wingwall
- Witness Corner
- State and National Line
- County Line
- Section Line
- Quarter Line
- Sixteenth Line
- Property Line
- Construction Line
- ROW Line
- New ROW Line
- Cut and Fill Limits
- Control of Access
- New Control of Access
- Proposed ROW (After Property Disposal)
- Drainage Arrow
- Remove Concrete Pavement
- Remove Concrete Driveway Pavement
- Remove Asphalt Concrete Pavement
- Remove Concrete Sidewalk
- Remove Concrete Median Pavement
- Remove Concrete Curb and/or Gutter
- Detectable Warning Pedestrian Push Button Pole and 30" x 48" Clear Space with 1.5% slope

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 14872
KELSEY B. WALTZ
5.16.2025
SOUTH DAKOTA

SEH

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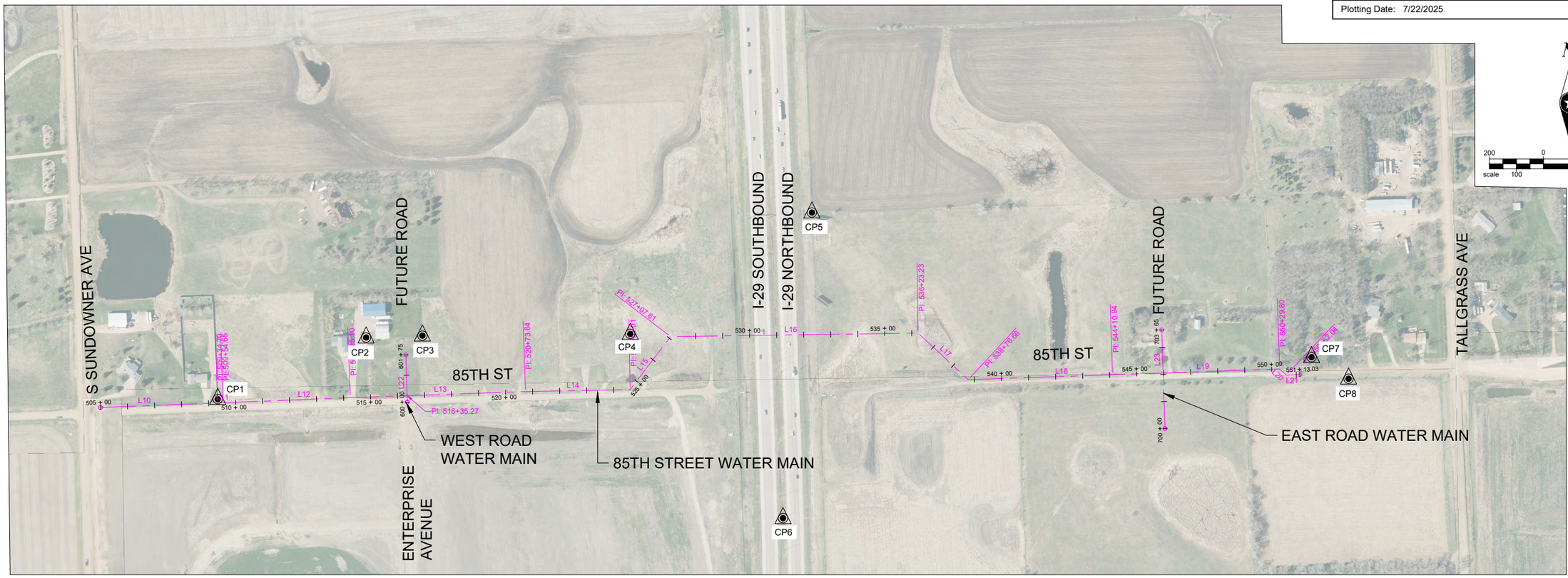
HORIZONTAL & VERTICAL CONTROL

FOR BIDDING PURPOSES ONLY

CITY OF SIOUX FALLS	PROJECT	SHEET	TOTAL SHEETS
	PCN X06R / CIP No. 11017	3	27
Plotting Date: 7/22/2025			



ALIGNMENT TABULATION - 85TH STREET WATER MAIN

POINT ID	TYPE	START STATION	START NORTHING	START EASTING	TOTAL LENGTH	BEARING	END STATION	END NORTHING	END EASTING
L10	POB	505+00.00	436186.4471	2904446.0064	434.70	N 87° 43' 53" E	509+34.70	436203.6538	2904880.3686
L11	PI	509+34.70	436203.6538	2904880.3686	19.94	N 87° 43' 53" E	509+54.65	436204.4432	2904900.2967
L12	PI	509+54.65	436204.4432	2904900.2967	470.46	N 87° 46' 13" E	514+25.10	436222.7472	2905370.3980
L13	PI	516+35.27	436230.4051	2905580.4288	438.37	N 88° 02' 49" E	520+73.64	436245.3458	2906018.5420
L14	PI	520+73.64	436245.3458	2906018.5420	387.37	N 88° 53' 05" E	524+61.01	436252.8853	2906405.8372
L15	PI	524+61.01	436252.8853	2906405.8372	246.60	N 37° 21' 55" E	527+07.61	436448.8792	2906555.4976
L16	PI	527+07.61	436448.8792	2906555.4976	915.62	N 89° 11' 57" E	536+23.23	436461.6764	2907471.0312
L17	PI	536+23.23	436461.6764	2907471.0312	253.42	S 47° 11' 10" E	538+76.66	436289.4449	2907656.9340
L18	PI	538+76.66	436289.4449	2907656.9340	534.28	N 88° 03' 05" E	544+10.94	436307.6129	2908190.9023
L19	PI	544+10.94	436307.6129	2908190.9023	618.86	N 88° 03' 05" E	550+29.80	436328.6570	2908809.4042
L20	PI	550+29.80	436328.6570	2908809.4042	32.24	S 46° 26' 26" E	550+62.04	436306.4387	2908832.7688
L21	PI	550+62.04	436306.4387	2908832.7688	50.99	N 88° 03' 05" E	551+13.03	436308.1725	2908883.7279

ALIGNMENT TABULATION - WEST ROAD

POINT ID	TYPE	START STATION	START NORTHING	START EASTING	TOTAL LENGTH	BEARING	END STATION	END NORTHING	END EASTING
L22	PI	600+00.00	436206.2241	2905581.2997	175.00	N 01° 47' 48" W	601+75.00	436381.1381	2905575.8133

ALIGNMENT TABULATION - EAST ROAD

POINT ID	TYPE	START STATION	START NORTHING	START EASTING	TOTAL LENGTH	BEARING	END STATION	END NORTHING	END EASTING
L23	PI	700+00.00	436108.6545	2908385.1525	365.00	N 01° 56' 59" W	703+65.00	436473.4432	2908372.7348

POINT	STATION	OFFSET	DESCRIPTION	NORTHING	EASTING	ELEVATION
CP1	509+34.71	19.87' LT	IP PROPERTY SE CORNER REBAR	436217.42	2904879.83	1514.39
CP2	514+92.23	225.93' LT	IP PROPERTY NW CORNER REBAR	436445.11	2905428.99	1515.37
CP3	516+99.79	225.84' LT	IP PROPERTY NE CORNER REBAR	436452.32	2905637.45	1517.78
CP4	526+10.63	130.98' LT	IP PROPERTY NW CORNER REBAR	436458.48	2906406.00	1517.78
CP5	532+07.22	515.88' LT	IP PERMANENT MONUMENT I-229 MEDIAN	436907.54	2907078.41	1516.01
CP6	530+57.22	609.81' RT	IP PERMANENT MONUMENT I-229 MEDIAN	435777.14	2906971.55	1519.79
CP7	440+01.28	29.05' LT (85TH WB)	IP PROPERTY SW CORNER REBAR	436372.68	2908927.56	1528.67
CP8	341+35.78	1.25' RT (85TH EB)	SET CONTROL POINT	436293.00	2909064.14	1524.95

THE COORDINATES SHOWN ON THIS SHEET ARE BASED ON THE SOUTH DAKOTA STATE PLANE COORDINATE SYSTEM, SOUTH ZONE (NAD 83) SF - VERTICAL DATUM NADV 88

REGISTERED PROFESSIONAL ENGINEER
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KELSEY B.
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5.16.2025
SOUTH DAKOTA

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ESTIMATED QUANTITIES & TABULATIONS

REVISED FOR BIDDING PURPOSES ONLY 8.28.25

CITY OF SIOUX FALLS	PROJECT	SHEET	TOTAL SHEETS
	PCN X06R / CIP No. 11017	4	27
Plotting Date: 8/28/2025			

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
009E4300	Construction Schedule, Category III	Lump Sum	LS
110E1970	Remove Water Main	40	Ft
260E3010	Gravel Surfacing	50.0	Ton
450E7625	24" Steel Pipe, Install	480	Ft
451E0120	20" Steel Encasement Pipe	40	Ft
451E0124	24" Steel Encasement Pipe	700	Ft
451E0401	1" High Density Polyethylene Pipe	104	Ft
451E0616	16" PVC Water Main	2,244	Ft
451E0656	6" PVC Restrained Joint Water Main	372	Ft
451E0662	12" PVC Restrained Joint Water Main	435	Ft
451E0666	16" PVC Restrained Joint Water Main	1,876	Ft
451E2251	16"x6" Pipe Tee	5	Each
451E2254	16"x12" Pipe Tee	1	Each
451E2352	16"x12" Pipe Cross	1	Each
451E2802	1" Corporation Stop with Tapping Saddle	4	Each
451E2902	1" Curb Stop with Box	4	Each
451E3006	6" Pipe Bend	2	Each
451E3012	12" Pipe Bend	4	Each
451E3016	16" Pipe Bend	10	Each
451E3106	6" Pipe Cap	2	Each
451E3112	12" Pipe Cap	3	Each
451E3506	6" Retainer Gland	32	Each
451E3512	12" Retainer Gland	20	Each
451E3516	16" Retainer Gland	52	Each
451E3606	6" Pipe Sleeve	1	Each
451E3616	16" Pipe Sleeve	2	Each
451E4206	6" Gate Valve with Box	7	Each
451E4212	12" Gate Valve with Box	3	Each
451E4216	16" Gate Valve with Box	5	Each
451E4400	Pipe Insulation	300	SqFt
451E4580	Standard Fire Hydrant	7	Each
451E4581	Temporary Fire Hydrant	2	Each
451E4905	Trench Stabilization Material	100.0	Ton
451E4908	Select Trench Backfill	100.0	Ton
451E4912	Controlled Low Strength Backfill	26.0	CuYd
451E4920	Pipe Bedding Material	2.0	Ton
451E4926	Water Main Bedding Material	4,702	Ft
451E5021	Trench Dewatering, Water Main	2,700	Ft
451E5120	Bore and Jack 20" Pipe	40	Ft
451E5124	Bore and Jack 24" Pipe	220	Ft
451E5190	Bore Obstruction	2	Each
451E5651	16"x6" Pipe Tangential Tee	2	Each
451E6080	Adjust Water Valve Box	15	Each
451E6100	Reconnect Water Service	3	Each
451E6105	Connect To Existing Water Main	3	Each
451E6505	Adjust Fire Hydrant with Valve and Box	1	Each
451E7402	Test Station	1	Each
451E7520	Exploratory Excavation	8.0	Hour

QUANTITY NOTES:
1. WATER SERVICE BEDDING MATERIAL

WATER MAIN SERVICES

	1" HDPE PIPE	1" CORPORATION STOP WITH TAPPING SADDLE	1" CURB STOP WITH BOX	RECONNECT WATER SERVICE
	1"	1"	1"	
STATION	(FT)	(EA)	(EA)	(EA)
506+03.0				1
508+31.0				1
514+00.0	54	1	1	1
520+31.9	20	1	1	
541+98.2	15	1	1	
550+92.7	15	1	1	
TOTAL	104	4	4	3

WATER MAIN TABULATIONS

STA. START	STA. END	16" PVC WATER MAIN	6" PVC WATER MAIN	6" PVC RESTRAINED JOINT WATER MAIN	12" PVC RESTRAINED JOINT WATER MAIN	16" PVC RESTRAINED JOINT WATER MAIN	FITTINGS: 16"X6" PIPE TEE	16"X6" PIPE TANGENTIAL TEE	16"X12" PIPE TEE	16"X12" PIPE CROSS	6" PIPE BEND	12" PIPE BEND	16" PIPE BEND	6" PIPE CAP	12" PIPE CAP	6" RETAINER GLAND	12" RETAINER GLAND	16" RETAINER GLAND	6" PIPE SLEEVE	16" PIPE SLEEVE
		(FT)	(FT)	(FT)	(FT)	(FT)	(EA)	(EA)	(EA)	(EA)	(EA)	(EA)	(EA)	(EA)	(EA)	(EA)	(EA)	(EA)	(EA)	(EA)
85TH STREET																				
509+40.0	515+00.0	500				60							2					6		1
515+00.0	521+00.0	450				150			1									6		
521+00.0	527+00.0	80				520							3					8		
527+00.0	533+00.0	160				440							1					2		
533+00.0	539+00.0	120				480							2					4		
539+00.0	545+00.0	470				130														
545+00.0	550+73.0	464				96				1			2					12		1
512+15.0				70			1									4		2		
512+32.0																				
517+25.0				45			1									4		2		
521+70.0				70			1									4		2		
524+90.0				28				1								4		2		
539+11.0				65				1								4		2		
543+75.0				35			1									4		2		
548+06.5				54			1									4		2		
LCRW (WEST END)														1		1				
LCRW (EAST END)														1		1				
ENTRERPRISE AVENUE																				
600+24	601+48.0				124										1		4			
EAST FUTURE ROAD																				
700+29.1	702+05.0				175							4			1		12			
702+05.0	703+40.5				136										1		4			
	TOTAL	2244		367	435	1876	5	2	1	1	0	4	10	2	3	30	20	52	0	2

WATER MAIN TABULATIONS

STA. START	STA. END	STRUCTURES: 6" GATE VALVE WITH BOX	12" GATE VALVE WITH BOX	16" GATE VALVE WITH BOX	STANDARD FIRE HYDRANT	ADJUST FIRE HYDRANT WITH VALVE AND BOX	WATER MAIN BEDDING MATERIAL	CONNECT TO EXISTING WATER MAIN	STEEL ENCASEMENT PIPE: 20" STEEL ENCASEMENT PIPE	24" STEEL ENCASEMENT PIPE	24" STEEL PIPE, INSTALL	TRENCHLESS: BORE & JACK 20" PIPE	BORE & JACK 24" PIPE	BORE OBSTRUCTION	CONTROLLED LOW STRENGTH BACKFILL
		(EA)	(EA)	(EA)	(EA)	(EA)	(FT)	(EA)	(FT)	(FT)	(FT)	(FT)	(FT)	(EA)	(CY)
85TH STREET															
509+40.0	515+00.0						560	1		20	20				
515+00.0	521+00.0			2			600								
521+00.0	527+00.0			1			600								
527+00.0	533+00.0						380			440	220		220	2	26
533+00.0	539+00.0			1			600			180	180				
539+00.0	545+00.0						600			60	60				
545+00.0	550+73.0			1			560	1							
512+15.0		1			1		70								
512+32.0						1									
517+25.0		1			1		45								
521+70.0		1			1		70								
524+90.0		1			1		28								
539+11.0		1			1		65								
543+75.0		1			1		35								
548+06.5		1			1		54								
LCRW (WEST END)															
LCRW (EAST END)															
ENTRERPRISE AVENUE															
600+24	601+48.0		1				124								
EAST FUTURE ROAD															
700+29.1	702+05.0		1				175		40			40			
702+05.0	703+40.5		1				136								
	TOTAL	7	3	5	7	1	4702	2	40	700	480	40	220	2	26

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8.28.2025
SOUTH DAKOTA

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REVISED 6.30.25
FOR BIDDING PURPOSES ONLY

CITY OF SIOUX FALLS	PROJECT	SHEET	TOTAL SHEETS
	PCN X06R / CIP No.: 11017	5	27

GENERAL NOTES

PROJECT SCOPE

This project consists of new construction of water main along the completion of 85th Street from Tallgrass Avenue to S Sundowner Avenue, including the I-29 and 85th Street interchange improvements. Work will include installation of water main. Private utility companies will also be upgrading their facilities during the project.

Storm sewer, grading, surfacing, lighting, and private utility improvements will be included under a separate contract.

SPECIFICATIONS TO BE USED

The most current edition of the City of Sioux Falls General Conditions for Public Improvements and Supplemental Standard Specifications, together with Division II and Division III of the most current edition of the South Dakota Department of Transportation Standard Specifications for Roads and Bridges with Supplemental Specifications and Errata, City and DOT Standard Plates and required provisions, supplemental specifications, and/or special provisions as included in the Project Manual are hereby made a part of these specifications in its entirety unless otherwise revised, deleted, or supplemented herein.

The City of Sioux Falls Engineer's Office will provide a copy of the City of Sioux Falls General Conditions for Public Improvements and the City of Sioux Falls Supplemental Standard Specifications free of charge to all prospective bidders upon request. The Supplemental Standard Specifications can also be downloaded from the City of Sioux Falls website at http://www.siouxfalls.gov/public-works/engineering/construction-mgmt/resources/specs-policies-manuals. The South Dakota Department of Transportation Standard Specifications for Roads and Bridges with Supplemental Specifications and Errata can be downloaded from the SDDOT's website at https://dot.sd.gov/

ELECTRONIC DESIGN FILES

Electronic design files WILL be available to the Contractor prior to the bid letting if requested, subject to the following conditions:

a. A signed disclaimer agreement shall be required from each Contractor requesting the electronic design files prior to distribution.

b. Electronic design files will be distributed as DWG files. The Contractor will be responsible for obtaining the appropriate software to open, analyze, and/or convert these file formats for their own use, and understand the risks and limitations associated with that software.

c. The electronic design files for distribution may be limited to the following: existing survey line work, existing ground surface model, proposed design utility and surfacing line work, and finished ground surface model. Additional information may be distributed at the Engineer's discretion.

d. The electronic design files will not include any modifications due to addendum unless specifically noted in an addendum.

e. The electronic design files are provided for reference only. In the event of a discrepancy between the electronic design files and the contract documents, the contract documents shall prevail.

Requests for the electronic design files should be made by signing the disclaimer agreement posted on the Bonfire site and submitting it to the email address listed in the agreement. Electronic design files will be furnished to the Contractor within two (2) business days from receipt of the signed disclaimer agreement.

CHANGE ORDER ITEMS

The Engineer may request a breakdown of costs for change order items, and the Contractor must supply the breakdown, if requested, prior to proceeding with the work. Unit bid prices are firm for the entire duration of the contract. For new work items, all costs must be approved by the City prior to proceeding with the work.

BUILD AMERICA, BUY AMERICA PREFERENCE

The Build America, Buy America requirements will apply to this utility project.

CONSTRUCTION LIMITS

The construction limits shall be within the right-of-way and easement areas. Material storage and vehicle and equipment traffic shall be limited to the construction limits. All paved streets adjacent to the project are to be cleaned at the end of each working day.

It shall be the responsibility of the Contractor to coordinate with the property owners relating to access to their property and any subsequent damages.

The Contractor will not be allowed to store materials, equipment, etc. on structures or use structures as a staging area.

PROPERTY PIN AND SECTION CORNER MONUMENTATION

Property corners or section corner monuments within the work limits shall be carefully preserved by the Contractor. In no case shall excavation be made within five feet (5') of such monument until it has been accurately located, witnessed, or otherwise cared for by the Engineer, and permission is given to proceed with the work. If the Contractor discovers monuments that have not been previously located, the Contractor shall immediately notify the Engineer so efforts can be made to protect, preserve, or reset them.

Property corner or section corner monuments disturbed or removed through the carelessness of the Contractor, or without proper permission, will be reset by the Engineer or the City and may result in a price adjustment to the contract.

CONSTRUCTION STAKES AND BENCHMARKS

Reference points, lines, grade stakes, and benchmarks set by the Engineer in connection with the work shall be carefully preserved by the Contractor and shall not be disturbed or moved from the exact position and elevation as set by the Engineer. No excavated material shall be placed over or against said stakes and, except where necessary to remove the stakes as the work progresses, stakes shall be carefully preserved in the original position and elevation until the work has been accepted. Stakes which must be removed as the work progresses shall be removed only upon concurrence by the Engineer.

Staking required to complete the work will be completed by the Engineer unless otherwise noted. Staking will be completed one time for each work item. Stakes disturbed or removed through the carelessness of the Contractor will be restaked by the Engineer and may result in a price adjustment to the contract.

NOISE PERMIT

The Contractor shall obtain a noise permit from the City of Sioux Falls Health Department (Dominic Miller 605-367-8768) if working between 10:30 PM and 6:00 AM within 500' of residential properties. The Contractor shall submit a request in writing to the Engineer and City Project Manager for approval 24 hours in advance of obtaining a noise permit from the Health Department when nighttime work is contemplated.

If a noise permit is approved by the City, the Contractor shall make every effort to minimize the impact of working at night near residential buildings. This could include, but is not limited to, completing a concrete pour early enough so sawing can be completed by a reasonable hour, or completing a concrete pour late enough so sawing does not have to occur until the morning.

When work has to occur between 10:30 pm and 6:00 am, the Contractor is responsible for notifying all residents that will be adversely impacted by the noise generated from construction activities at least 24 hours in advance. This notice shall, at a minimum, include the following information: expected activity occurring, why the activity has to occur overnight, expected start time, expected end time, and expected duration (i.e., one night only, several nights in a row, etc.). This notice can take the form of a door hanger, postcard, etc., and shall be either hand delivered or placed in a location that residents will see, such as the front door. For multi-unit housing complexes, the notices can be placed in a conspicuous location where residents will see them when entering and/or exiting the complex, such as on main entrance doors, near the mailboxes, etc. The notice must be approved by the Engineer prior to delivery. All costs for preparing and delivering these notices shall be incidental to the contract.

SUBMITTALS

The following documents shall be submitted by the Contractor. Documentation requirements elsewhere in the contract are not waived if not listed in the following table.

Submittals	Date Submitted
Shop drawings	
Construction schedule	
South Dakota State sewer and water plumbing contractor's license	
Water Main, fitting, valve, and casing materials	
Discharge chlorinated water plan	
Dewatering plan for groundwater	
Temporary water main layout	
DANR Contractor Certification Form (SD Form – 2110LD)	

CONSTRUCTION SCHEDULE

This work is to be constructed in conjunction with the interchange construction project. The Contractor shall reference the Phasing and Staging Plan that is included in the I-29 and 85th Street Interchange project for additional phasing information.

- Grading along the watermain alignment shall be completed prior to water main installation.
- The LCRW main line will be abandoned with this project. Water service from LCRW must remain in place to existing residents until residents are connected to the City of Sioux Falls water main system and all testing has been completed and accepted for the project.

The Contractor shall prepare a construction schedule for approval by the Engineer that will ensure the completion of the project within the time frame specified. This schedule must be provided to the Engineer for review a minimum of 3 days prior to the preconstruction meeting. The notice to proceed will not be issued until the schedule has been approved by the City. The construction schedule shall be in bar or network diagram form and show the start and completion dates for significant items of work in their respective phases. Significant items of work includes but is not limited to: erosion control, removals, grading, the installation of watermain, sanitary sewer, storm sewer, street lighting, traffic signals, base course, curb and gutter, paving, sidewalk, and pavement markings. When applicable the schedule shall include submission dates for shop drawings, manufacturing and installation of materials, supplies, equipment, and testing for various parts of the work.

The construction schedule shall be updated on a bi-weekly basis. If it appears the rate of progress is such that the contract will not be completed within the time frame allowed the Contractor will be required to provide written documentation as to what measures they will take to complete the project within the specified time frame or to prosecute work in a satisfactory manner. Failure to submit the schedule on a bi-weekly basis will result in the City withholding the pay applications until the updated schedule is submitted.

COORDINATION MEETINGS

This work is to be constructed in conjunction with the I-29 & 85th Street Interchange reconstruction project. Coordination meetings will be scheduled for the interchange project. The Contractor shall coordinate utility update meetings to be in conjunction with the interchange project meetings.

The Contractor shall attend any coordination and project update meetings for the interchange reconstruction project.

Landowners, business owners, and the general public will be invited to the first half of the meeting. The Contractor will give a brief summary of the project schedule and will answer any questions. The public will then be dismissed and the Contractor can discuss construction coordination and other issues as needed.

All costs to conduct the coordination meetings shall be incidental to the project.

REGISTERED PROFESSIONAL ENGINEER
REG. NO.
14872
KELSEY B. WALTZ
6.30.25
SOUTH DAKOTA

CONTRACTOR SAFETY REQUIREMENTS

The Contractor is responsible for following all local, state, and federal rules and regulations regarding site safety. The Contractor is solely responsible for site safety from the issuance of the Notice to Proceed until Final Acceptance. The City shall not be responsible for the Contractor's failure to follow all applicable rules and regulations.

CITY TOBACCO POLICY

The use of tobacco products is prohibited in all City-owned and City-shared buildings, facilities, vehicles, parking lots, equipment, worksites, and walkways leading into City facilities. This policy does not extend to work occurring within the right of way.

For purposes of this policy, tobacco is defined as any product made or derived from tobacco that is intended for human consumption, including any component, part, or accessory of a tobacco product. Tobacco is also defined and includes all forms of nicotine delivery devices, which may or may not include actual tobacco (such as electronic cigarettes).

PORTABLE TOILET FACILITIES

The Contractor will be responsible for providing portable toilet facilities for the project at no cost to the City.

ACCEPTANCE TESTING

The City will be responsible for taking the first acceptance test and a backup test if required. All subsequent tests required, due to failures, will be paid by the Contractor by deducting the cost from the pay request unless otherwise specified.

Testing methods and equipment shall be as outlined in Section 6 of the General Conditions and the current version of the Engineering Division's Policy Letter on Minimum Testing Requirements for Public Improvements. Testing *frequency* shall be as outlined in the current version of the Engineering Division's Policy Letter on Minimum Testing Requirements for Public Improvements or at the discretion of the Engineer. If there are conflicts, the Engineering Division's Policy Letter on Minimum Testing Requirements for Public Improvements shall govern over the General Conditions.

The City reserves the right to require work or material that does not meet specifications, whether subject to acceptance testing or not, to be removed and replaced. The City also reserves the right to assess a price deduction in lieu of removal and replacement at the City's sole discretion. The method of assessing a price deduction for work not meeting specifications shall be at the sole discretion of the City.

DRAINAGE

Drainage is the Contractor's responsibility. Contractor shall be aware of existing drainage conditions and facilities, and shall provide for drainage during all phases of construction. Damage caused by improper temporary drainage facilities shall be repaired at the Contractor's expense and to the satisfaction of the Engineer.

UTILITIES

Both Lewis and Clark Water Main and Lincoln County Rural Water Main are located within the project area. The Lewis and Clark water main system is to remain in place and operational at all times during construction. See "Lewis & Clark Notes" below for more information. The Lincoln County Rural Water system is to be cut and capped on the east and west side of I-29 at locations that allow for service to continue to residents until residents can be connected to the City of Sioux Falls 16" watermain. LCRW will ultimately be abandoned in place between Sundowner Avenue and Tallgrass Avenue.

Utility coordination will be in conjunction with the I-29 & 85th Street Interchange project.

All utilities shall be verified by the Contractor prior to starting work. Any time existing utilities impede the progress of work, the Contractor shall immediately notify the Engineer.

All utilities, whether privately or publicly owned, shall be moved, relocated, and/or replaced as necessary, by the respective utility company or companies except as noted in the plans. These modifications shall take place in advance of construction when applicable or when advised by the Engineer. No payment shall be made to the Contractor unless specified in the contract documents.

The Contractor shall safeguard all utilities and coordinate his efforts to coincide with utility work by others in order to minimize inconvenience to the public and utility companies. When pipe utility installation crosses existing utilities, the Contractor shall be responsible for supporting the utilities in a manner that is acceptable to the owner of the utility. Any damage caused to the utilities due to Contractor carelessness shall be repaired at the Contractor's expense to the satisfaction of the utility owner.

Abandoned utilities (gas lines, telephone lines, etc.) encountered during construction shall be removed and disposed of by the Contractor. Costs associated with this work shall be incidental to the various bid items associated with work adjacent to the abandoned utility.

The Contractor shall be responsible for the coordination of all work associated with the disturbance, removal, or replacement of unidentified metallic natural gas mains or services when encountered. The Contractor shall, in advance and prior to proceeding with the work, coordinate with the City of Sioux Falls, MidAmerican Energy Company, and all other companies related to the associated work.

Existing utility locations shown on drawings are approximate. There is no guarantee that the utilities shown include all such utilities or that the locations indicated are exact. The Contractor shall contact South Dakota One Call system, utility companies, and the City of Sioux Falls to verify locations of all existing utilities prior to excavation.

The Contractor shall be responsible for notifying South Dakota One Call 1-800-781-7474 to have utilities field located.

CONTRACTOR INSTALLED UTILITIES

The Contractor shall be responsible for locating City utilities installed within the project until final acceptance is granted. City of Sioux Falls cannot provide one call locates to new City utilities installed within the project limits during active construction projects until final acceptance of the project. Furthermore, the City of Sioux Falls is not responsible for any damage to new City utilities during project construction due to inaccurate or absent locates on the part of the Contractor. All costs associated with locating City utilities installed with the project until final acceptance shall be incidental to the project.

The Contractor shall cooperate with and coordinate his efforts to work with the utility companies and their contractors. Each bidder shall be responsible prior to bid letting, for determining the effects of utility work on the project work scope and schedule, and shall account for all such effects in his bid. No consideration will be given to the Contractor after the bid letting on account of utility work done by others.

A summary of anticipated work by others is as follows but not limited to:

See plans for the Interstate 29 & 85th Street project. PCN 06JQ

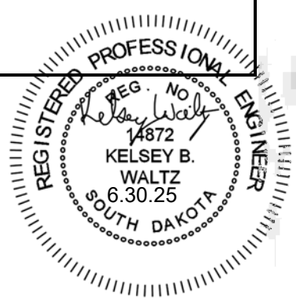
1. Storm sewer: Street storm sewer drainage along 85th Street from Sundowner Avenue to Tallgrass Avenue.
2. Electrical: Signal and lighting along 85th Street from Sundowner Avenue to Tallgrass Avenue.
3. Private Utilities

The following utility companies are known to have facilities on the project:

UTILITY CONTACTS	
POWER	
East River Electric Power 211 S Harth Ave Madison, SD 57042 Attn: Jordan Brown P: 605-256-8231 jbrown@eastriver.coop	Northwestern Energy 313 Cedar St Yankton, SD 57078 Attn: Noah Kimuyukilonzo P: 605-415-1977 noah.kimuyukilonzo@northwestern.com
MidAmerican Energy 1200S Blauvelt Ave Sioux Falls, SD 57105 Attn: Ryan Hendriks P: 605-373-6061 rhendriks@midamerican.com	Southeastern Electric 47077 276th St Lennox, SD 57039 Attn: Adam Stark P: 605-368-4000 adam@southeastern.coop
Northern Natural Gas 47496 272nd St Harrisburg, SD 57032 Attn: Travis Beck P: 605-215-7757 travis.beck@nngco.com	Xcel Energy 500 W Russell St Sioux Falls, SD 57104 Attn: Mike Ronfeldt P: 605-339-8358 michael.a.ronfeldt@xcelenergy.com

UTILITY CONTACTS	
COMMUNICATIONS	
Bluepeak (Vast Broadband, aka Vast) 5100 S. Broadband Ln Sioux Falls, SD 57108 Attn: Jordan Huber P: 605-498-4922 Jordan.Huber@mybluepeak.com	Midwest Fiber Networks 6070 North Flint Road Glendale, WI 53209 Attn: Patrick Graham P: 414-672-5612 pgraham@midwestfibernetworks.com Attn: Corey Schmukim P: 414-349-2764 cschmunkim@midwestfibernetworks.com
Lumen 125 S Dakota Ave Sioux Falls, SD 57104 Attn: Andrew Wixon P: 605-681-2049 andrew.wixon@lumen.com	Windstream 3540 SW 61sdt St Des Moines, IA 50321 Attn: Lori Ketter P: 920-410-6902 Lori.Ketter@windstream.com
Midcontinent Communications 1305 N Terry Avenue Sioux Falls, SD 57105 Attn: Trent Bialas P: 605-231-1972 Trent.Bialas@Midco.com	SDN Communications 2900 W 10th St Sioux Falls, SD 57104 Attn: Matt Burton P: 712-333-5542 Matt.Burton@sdncommunications.com

UTILITY CONTACTS	
PUBLIC	
Lincoln County Rural Water 27066 Henry Pl Sioux Falls, SD 57108 Attn: Robin Dykstra P: 605-767-2966 rdykstra@lincolncoruralwater.com	City of Sioux Falls (water) 231 N Dakota Ave Sioux Falls, SD 57104 Attn: Shannon Ausen P: 605-367-8607 shannon.ausen@siouxfalls.gov Attn: Nick Borns P: 605-367-8655 nicholis.borns@siouxfalls.gov
Lewis & Clark Regional Water (L&C) 31474 SD Hwy 19 Vermillion, SD 57069 Attn: Justin Walsh P: 605-310-8780 jwalsh@lcrws.org Attn: Todd Giffin P: 605-310-3085 tgiffin@lcrws.org	City of Tea 510 S Main Ave Tea, SD 57064 Attn: Ben Scholtz (HDR representing Tea) P: 605-977-7759 ben.scholtz@hdrinc.com Attn: Thad Konrad P: 605-498-2906
SDDOT (SF Area Ofice) 5316 W 60th St Sioux Falls, SD 57107 Attn: Stacy Bartlett P: 605-773-6488 stacy.bartlett@state.sd.us	



PROTECTION OF EXISTING WATER MAIN, SANITARY SEWER, AND STORM SEWER SYSTEMS

For the protection of existing public underground utilities and the surrounding work area, consideration shall be given to isolating portions of the existing water distribution system within the construction limits while maintaining fire protection. During underground utility installation such as, but not limited to, sanitary sewer, water main, storm sewer, sump pump drain, etc., in the proximity of existing water main and/or water services, the existing water main distribution shall be isolated within the work area. Upon receiving notice from the Contractor 24 hours in advance of any work, City staff will operate designated water valves, where appropriate, to isolate the work area as much as reasonably possible. The Contractor shall become aware of the location and status (open/closed) of any designated isolation valve(s). Sioux Falls Water Maintenance staff shall be notified immediately in the event of a water service emergency or interruption. It will be permissible for the Contractor to operate the designated valve(s) in the event of a water main or water service failure within the construction area. The Contractor is required to have a valve operating key on site in the event of such a failure. Sioux Falls Water Maintenance (367-8810) shall be notified immediately after the shutdown. City crews will operate the valves after repairs have been made and inspections have been completed.

Existing sanitary sewer lines and manholes within the construction limits shall be protected at all times during construction. Water, stone, dirt, gravel, asphalt, concrete or any other debris shall not be allowed to enter the City's sanitary sewer system during flushing operations or at any other time. Construction taking place in the vicinity of any existing City sanitary sewer lines or manholes shall not cause any inflow of surface water, ground water, water from damaged water lines, or debris to enter the City's sanitary sewer system. The Contractor shall be responsible for any damages or costs incurred to the City's sanitary sewer system, Water Reclamation Division, and/or private property, and any actions imposed by SDDANR due to spills, overflows, inflows, lift station surcharges, City Water discharge, sanitary sewer discharges to surface waters, sanitary sewer backups into homes, etc.

Existing storm sewer inlets and pipes within the construction limits shall be protected from the entrance of stone, dirt, gravel, asphalt, concrete or any other debris during construction. The SWPPP must be followed at all times.

LOCATING UTILITY

This work consists of excavating material to locate a utility line, (Private or Public), when the utility owner cannot find said line, or utility line is not within four (4) feet either side of markings established by the utility owner. Payment for this item will be at the contract unit price per hour for Exploratory Excavation. 8 hours are estimated for this project.

ADJUSTMENT OF MANHOLE CASTINGS AND VALVE BOXES

Under these items of work, the water main valve boxes are to be adjusted in accordance with the applicable standard plate. The Contractor shall furnish the new water valve boxes in accordance with the supplemental standard specifications, where shown on the plan sheets.

Existing frames and/or lids cracked or broken through the carelessness of the Contractor's forces shall be replaced with new frames and/or lids at the Contractor's expense.

WASTE DISPOSAL SITE

All material generated from this project for disposal must be disposed of at a state-permitted solid waste disposal site. Depending on what material is generated and whether it is contaminated or uncontaminated will determine which permitted facility can accept it. Permitted facilities include construction and demolition debris sites, restricted use sites, and regional landfills. The Contractor can contact the Sioux Falls Regional Sanitary Landfill at (605) 367-8162 to identify locally permitted disposal sites for various categories of contaminated and uncontaminated materials.

All costs associated with disposing of waste shall be incidental to the various contract items.

DEWATERING

It is anticipated that groundwater will be encountered during construction. Dewatering shall be paid for under the unit price bid per lineal foot for "Trench Dewatering, Water Main" and shall be full compensation for all permits, materials, equipment, and labor needed to perform the work. Locations and extents of trench dewatering shall be confirmed with the engineer during construction.

It shall be the responsibility of the Contractor to discharge and dispose of the water in an approved manner. No water shall be allowed to enter the sanitary sewer. The Contractor shall dispose of water in a suitable manner without damage to adjacent property. The water shall be filtered using an approved method to remove sand and fine-sized soil particles before disposal into any drainage system. Discharge from dewatering operations shall be controlled to prevent erosion and scour.

The Contractor is responsible for obtaining a Temporary Water Use Permit from the SD DANR prior to commencing dewatering operations. Prior to excavating, the Contractor shall submit for review a dewatering plan to be approved by the Engineer.

WATER

WATER MAIN - GENERAL

Water main for the project is shown on the plans. The Contractor shall review the plans for all proposed water main to be completed.

Contractors License. The Contractor shall obtain a "South Dakota State Sewer and Water Plumbing Contractor's License" prior to commencing construction.

WATER MAIN AND APPURTENANCES

All valve operation will be done by the City of Sioux Falls water department.

All ductile iron pipe and fittings shall be wrapped with polyethylene tube material to protect the pipe from any future corrosion. The poly material shall be installed as detailed in the supplemental specifications and the ductile iron handbook from DIPRA and ANSI A21.5 (AWWA C105).

All water distribution materials shall meet NSF / ANSI Standard 61 – Drinking Water System Components, Health Effects, NSF/ANSI 61, and NSF/ANSI 372. The Contractor or Supplier may submit appropriate documentation to the Engineer for any materials not listed in the City's Supplemental Standard Specifications for Water Main Construction, Section 300. This documentation must be provided no later than 7 days prior to bid opening

WATER MAIN PARALLELING OR CROSSING SEWERS

Installation of water mains parallel to sanitary or storm sewer lines shall be completed in a manner such that the water mains shall be laid at least 10 feet horizontal distance when measured edge to edge from any existing or proposed sanitary sewer, storm sewer, or sewer manhole. Where water mains cross above storm sewers or sanitary sewers, there shall be at least 18 inches vertical clearance between the bottom of the water main and the top of the sewer pipe and one full length of water pipe must be located so both joints will be as far from the sewer as possible. Where watermain is located in the proximity of the Lewis & Clark water main system, 15 feet horizontal and 36 inches vertical separation must be maintained.

A water main may cross below a non-perforated sewer main if minimum vertical separation of 18 inches is provided and the sewer main is of acceptable water main pipe material and is a continuous piece of at least 20 feet in length with the length of the water pipe located so both joints are as far as possible from the sewer main. A water main may cross either above or below a non-perforated sewer line with a vertical separation of less than 18 inches if either the water or sewer line is encased in PVC or steel for at least 10 feet each side of the crossing. If PVC or steel is used as encasement material, the ends shall be adequately sealed with a rubber boot. Where water mains are to be installed in parallel with a sewer or a sewer manhole that is less than 10 feet away horizontally and is not at least 18 inches below the water main, the water main shall be encased in PVC or steel for the entire distance that the sewer is too close to the water main. If PVC or steel is used as encasement material, the ends shall be adequately sealed with a rubber boot. PVC casing pipe shall meet the requirements of restrained joint PVC pipe material in Section 300 Supplemental Standard specifications for Water Main Construction. Payment for crossings shall be incidental to the contract unit prices for the water main items.

WATER MAIN DISINFECTION

After disinfection and final flushing and before the new water main is connected to the distribution system, two consecutive sets of acceptable samples, taken 24 hours apart, shall be collected from the new main. The samples must be submitted to a health laboratory acceptable to the state DANR, which includes the City of Sioux Falls health lab. The samples must be free of coliform bacteria before the system can be placed into service.

When minor water main work occurs (i.e. tie-in connections of new water main to existing water main, water main adjustments, installation of new valves on existing main or any other work deemed minor by the Engineer) the existing main, prior to the completion of the bacteria testing, may be returned to service once the line has been flushed and a boil order has been issued. The boil order will be rescinded with the passing of the bacteria test.

Water that is discharged during water main flushing shall not reach a stream, river or water way if the chlorine residual exceeds 0.05 mg/L.

The City or its representative shall notify all consumers affected by any interruption of water service at least 24 hours before the interruption of water service. Consumers shall be verbally notified when possible. In the event a consumer cannot be verbally notified, a door hanger shall be secured to the most frequently used entrance by the City or its representative.

WATER SERVICE TAPS (2" OR SMALLER)

Water service taps to the water main system will be made by the Contractor.

WATER MAIN CONNECTIONS (4" OR LARGER)

Smith Taps: Smith Taps to the water main system shall be made by the City's Water Maintenance Team. The Developer/Contractor shall coordinate with Engineering-Water (Erika Delgehausen 367-8612) at least 48 hours in advance. The construction requirements and method of measurement and payment shall be as stated in Section 300 of the City's Supplemental Specifications. The valve box shall be provided by the Contractor and paid separately.

Connect to Existing Water Main: The construction requirements and method of measurement and payment shall be as stated in Section 300 of the City's Supplemental Specifications.

Cut and Tie to Existing Water Main: The construction requirements and method of measurement and payment shall be as stated in Section 300 of the City's Supplemental Specifications.

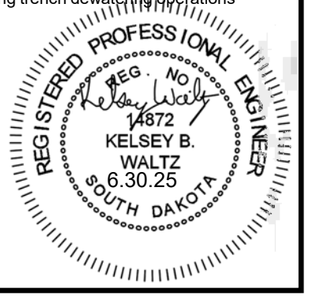
DISCHARGE OF CHLORINATED WATER

Water from the City's Water Distribution System that is drained into work areas or open trenches must be discharged without impact to the environment. The Contractor shall review locations of discharge hydrants relative to open areas and shall meet with property owners to discuss discharge locations and obtain property owner approval if water will be discharged across their private property. The following is a prioritized list for the disposition of chlorinated or heavily chlorinated water from the distribution system:

a. If the discharge location is close to Waters of the State, discuss excavation of depressions or berms (BMP's) with the City and property owner(s) to accommodate discharge volumes. Water from the distribution system shall be pumped or flushed to these BMP's and shall be stored and discharged through infiltration. Overland flow is not allowed.

b. Water from the distribution system may be pumped into vactor trucks or septic tank trucks and hauled to the Water Reclamation Plant or other facility permitted by (DANR) to accept such discharge.

c. Permission must be obtained by the City for the discharge of Water from the distribution system into City's sanitary sewer system. Contractor is responsible for verifying hydraulic loading on existing sanitary sewer system during trench dewatering operations to ensure that sewer backups do not occur.



TRENCHLESS CONSTRUCTION – WATER

Trenchless construction will be performed as specified in the Special Provisions for Trenchless Construction.

Trenchless construction will consist of fully installing the 24" diameter steel casing beneath I-29 Mainline. The 16" carrier pipe installed within the casing pipes shall be 16" PVC Restrained Joint Water Main".

Trenchless construction will consist of fully installing the 20" diameter steel casing beneath the Lewis and Clark Mainline. The 12" carrier pipe installed within the casing pipes shall be 12" PVC Restrained Joint Water Main".

Bore and Jack trenchless pipe installation is the method for construction for locations noted on the plans. Additional payment will not be made to the Contractor in the event the trenchless construction method fails, thus requiring the Contractor to change the trenchless construction method. This would include abandoning or removing the materials installed prior to failure and filling the annular space with controlled low strength material.

WATER MAIN RESTRAINT

Megalugs, gland, and bolts are included in the price bid for "XX" PVC RESTRAINED JOINT WATER MAIN."

STEEL CASING FOR WATER MAIN

The proposed steel casting shall meet the following requirements:

- Casing Nominal Diameter = 20" & 24" (See plans for locations)
- Minimum wall thickness = 0.25"
- Steel casing material = ASTM A53 Grade B (35,000 psi minimum yield strength)
- Refer to the Special Provisions for Trenchless Construction for additional requirements.

Payment for furnishing steel casing shall be made item "XX" Steel Encasement Pipe". Installation of casing in open cut areas shall be paid for under the "XX" Steel Pipe, Install" item. Payment for casing installed by trenchless means shall be paid for under "Bore and Jack XX" Pipe".

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WATER MAIN CONSTRUCTION SPECIAL CONDITIONS

Temporary Fire Hydrant:

- Temporary fire hydrants may be installed along the proposed water main for periodic pressure testing and disinfection. Upon completion of passing results for pressure testing and disinfection of the proposed water main, the temporary hydrants and their necessary fittings / connections to the proposed water main shall be fully removed for later use.
- The contract unit price per each for "Temporary Fire Hydrant" shall include all costs to furnish and install the items mentioned in the City of Sioux Falls Supplemental Standard Specifications for temporary fire hydrants; as well as any reducers, bends, tees, bolts, nuts, restraining devices and all appurtenances to ensure a waterproof connection to the proposed water main. The bid item shall also include all hoses, gaskets, connections and all appurtenances to make the above ground connection between the existing fire hydrant and temporary fire hydrant, for filling of the proposed water main.

Grading:

- Grading over the proposed watermain and hydrant leads to be completed prior to installation.
- Place fill material over the proposed watermain and hydrant leads at locations where there is currently less than 3' of existing ground cover.
- Fill material shall be placed to provide for a minimum 4' of cover, by 20-foot wide, graded area centered over the proposed watermain alignment.
- The approximate watermain stations are listed below.
  - WM STA: 509+40 to STA: 511+00
  - WM STA: 515+00 to STA: 526+00
  - WM STA: 536+25 to STA: 540+25

TANGENTIAL TEES

Tangential tees shall be installed in lieu if standard mechanical joint tees on the hydrant leads indicated on the plans. Hydrants with tangential tees will be used to flush excess air in the water main. Positive slope shall be maintained from the tangential tee to the base of the hydrant such that the hydrant base is the highest point in the water system. Refer to detail for air release hydrants.

The tee shall be fabricated such that the elevation at the top of the pipe for the main line pipe and intersecting pipe are equal. A standard tee bolted directly to an eccentric reduce will considered an equivalent substitute. Tangential tees shall be measured per each type and size fitting furnished and installed. Payment will be at the contract unit price per each and will be full compensation for all materials, labor, equipment, and incidentals necessary to complete the installation of the fitting.

PIPE BEDDING MATERIAL

Material used for service bedding shall be paid for by Ton at the unit price bid for "Pipe Bedding Material."

TRENCH STABILIZATION MATERIAL

The Contractor shall notify the Engineer when material considered unstable for pipe foundations is encountered. When authorized, the Contractor may replace unsuitable material with trench stabilization material. The use of bedding material is still required when trench stabilization material is used.

A quantity of 100 tons has been included in the plan's quantity for trench stabilization material. All costs to furnish and install the trench stabilization material shall be incidental to the contract unit price per ton for "Trench Stabilization Material". For final measurement of material, weight tickets shall be provided to the Engineer at the time of construction.

ADJUST FIRE HYDRANT WITH VALVE AND BOX

Item includes all work and materials to relocate the Lewis and Clark hydrant located at Sta. 512+32.0. This includes excavation to expose the existing valve near the L&C mainline to shut off the hydrant lead, exploratory excavation to verify the elevation of the hydrant lead, salvaging and reinstalling the hydrant and isolation valve, making connection onto the existing hydrant lead, and installing hydrant extension. The hydrant extension height is dependent on the elevation of the hydrant lead. The engineer will determine if pipe sweeps or bends will be necessary after verification of hydrant lead elevation. Hydrostatic testing of the hydrant lead shall be completed after install and is included in the unit price bid.

See details for materials information and installation.

TEST STATION

Item includes all work and material to salvage and relocate the existing bond wires and trace wire test station. Includes furnishing trace wire as needed, making connection to existing system, and testing conductivity. Includes extension of PVC monitoring tube.

See details for materials information and installation.

TRENCH STABILIZATION MATERIAL

The Contractor shall notify the Engineer when material considered unstable for pipe foundations is encountered. When authorized, the Contractor may replace unsuitable material with trench stabilization material. The use of bedding material is still required when trench stabilization material is used.

A quantity of 100 tons has been included in the plan's quantity for trench stabilization material. All costs to furnish and install the trench stabilization material shall be incidental to the contract unit price per ton for "Trench Stabilization Material". For final measurement of material, weight tickets shall be provided to the Engineer at the time of construction.

A quantity of 100 tons has been included in the plan's quantity for suitable backfill material. All costs to furnish and install the trench backfill material shall be incidental to the contract unit price per ton for "Select Trench Backfill". For final measurement of material, weight tickets shall be provided to the Engineer at the time of construction.

GRAVEL SURFACING

Driveways impacted by watermain construction shall have aggregate surfacing restored for resident access.

Aggregate Surfacing Course shall be in accordance with SDDOT Standard Specifications Section 260. Material for base course shall meet requirements set forth in SDDOT Standard Specifications Section 882.

Aggregate Surfacing Course shall be compacted with pneumatic rollers or steel drums until the surface is firm and unyielding.

Payment shall be made on a per ton basis. Any aggregate surface course delivered to the site without a scale ticket will not be measured for payment. A quantity of 50 tons is provided in the estimate for restoration of driveway surfacing.

LEWIS & CLARK NOTES

Lewis & Clark Regional Water System is designated as a High-Profile Utility with SD One Call.

There is a 36" Lewis & Clark Water main and easement along the south side of 85th Street. The Lewis & Clark pipeline installation is based on flexible wall pipe design criteria and therefore subject to collapse. Use of low ground pressure equipment is required near the pipelines. If cover is removed from the top of the pipelines, then special consideration must be given to protective measures for construction traffic that crosses the pipelines, including but not limited to the use of steel plates, timber planks, an air gap bridge of some sort, or other measures, and protection for potentially freezing conditions. The Contractor must not place stockpiles of soil or other materials, or place other construction related equipment such as cranes, portable concrete batch plants, etc. on or over the pipeline.

No construction equipment will be allowed to traverse across the Lewis & Clark pipe or longitudinally over top of the Lewis & Clark pipe. The pipe has a Cement Mortar lining that can be damaged if the pipe is elongated or deformed. If the pipe needs to be crossed then the Contractor is required to coordinate, secure and provide design for protective measures required for construction equipment to cross the Lewis & Clark pipe. Provide design information with dead and live loadings, details and all calculations to Lewis & Clark Regional Water System for review prior to performing any work.

Lewis & Clark needs to be notified first if any construction activities change from methods previously described. Lewis & Clark to be present during hydrant and test station relocation.

Notify Lewis & Clark Regional Water System 2 weeks prior to entry into their easement or working near or over the existing pipeline. No work shall be performed within the Lewis & Clark easement without giving a 2 week notice to Lewis & Clark Regional Water System.

Control of ground water may be critical prior to excavating under or around the existing pipeline. Failing to control ground water may create a condition in which bedding material flows out from under the pipeline with the ground water. Loss of bedding material may create a condition in which the pipelines become unsupported and susceptible to problems.

Any loss of water service for any situation in this portion of the Lewis & Clark pipeline will result in an economic loss for Lewis & Clark. This portion of the 36-inchdiameter pipeline serves The City of Sioux Falls, Lincoln County Rural Water, City of Harrisburg, MCWC, Rock County Rural Water, Lincoln-Pipestone Rural Water, City of Rock Rapids, City of Luverne MN, and the City of Worthington MN.

EXPLORATORY EXCAVATION

Includes time and materials to locate LCRW pipe for capping pipe ends (2 EA) and reconnecting service lines (3 EA), and locating existing watermain along 85th St (2 EA).

85TH STREET WATER MAIN LAYOUT

REVISED 6.30.25
FOR BIDDING PURPOSES ONLY

CITY OF SIOUX FALLS	PROJECT	SHEET	TOTAL SHEETS
	PCN X06R / CIP No. 11017	9	27
Plotting Date: 7/22/2025			

NOTES:
1. SEE SHEET 17 FOR EXISTING WATER SERVICE RECONNECTION LOCATIONS
2. FLUSH EXISTING 16" PVC PRIOR TO FILLING NEW LINE.
3. LINCOLN COUNTY RURAL WATER LINE TO BE ABANDONED IN PLACE WHERE NOT REMOVED FOR BRIDGE WORK, GRADING OPERATIONS, OR UTILITY INSTALLATION.

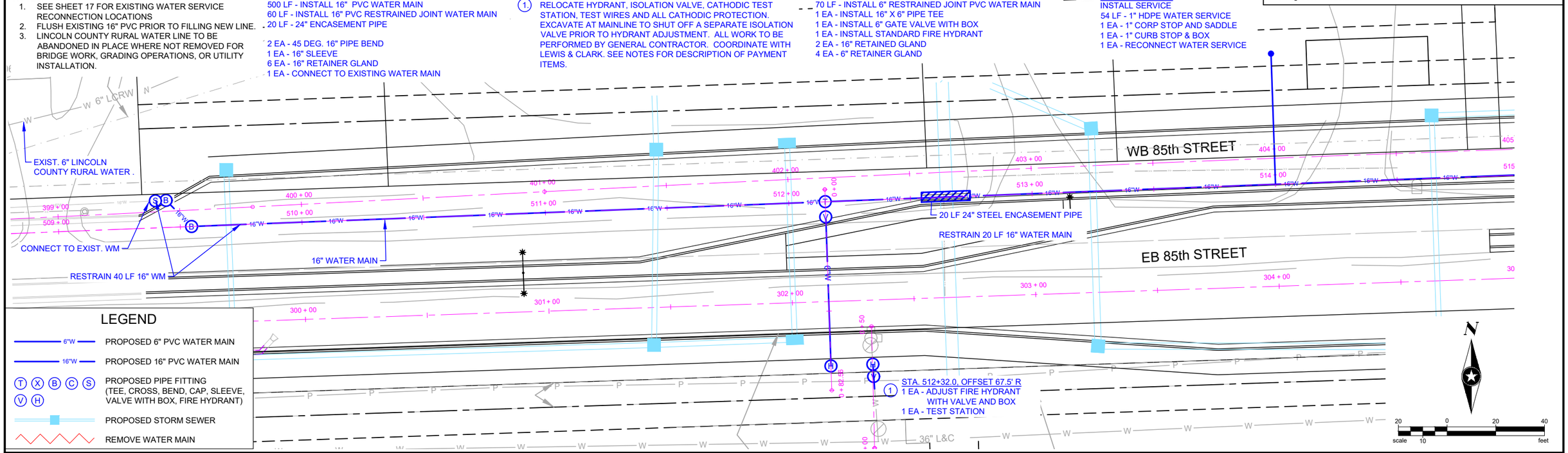
STA 509+40.0 TO 515+00.0
500 LF - INSTALL 16" PVC WATER MAIN
60 LF - INSTALL 16" PVC RESTRAINED JOINT WATER MAIN
20 LF - 24" ENCASEMENT PIPE

2 EA - 45 DEG. 16" PIPE BEND
1 EA - 16" SLEEVE
6 EA - 16" RETAINER GLAND
1 EA - CONNECT TO EXISTING WATER MAIN

PLAN NOTE
(1) RELOCATE HYDRANT, ISOLATION VALVE, CATHODIC TEST STATION, TEST WIRES AND ALL CATHODIC PROTECTION. EXCAVATE AT MAINLINE TO SHUT OFF A SEPARATE ISOLATION VALVE PRIOR TO HYDRANT ADJUSTMENT. ALL WORK TO BE PERFORMED BY GENERAL CONTRACTOR. COORDINATE WITH LEWIS & CLARK. SEE NOTES FOR DESCRIPTION OF PAYMENT ITEMS.

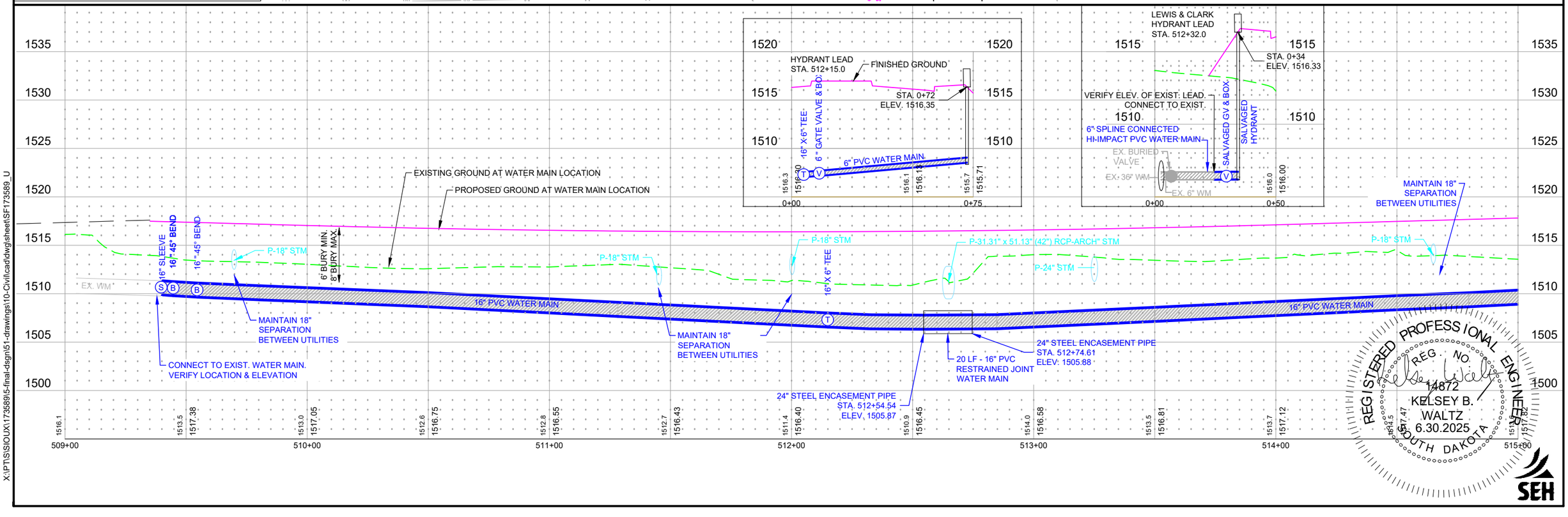
STA 512+15.0, OFFSET 0' TO 70' RT
70 LF - INSTALL 6" RESTRAINED JOINT PVC WATER MAIN
1 EA - INSTALL 16" X 6" PIPE TEE
1 EA - INSTALL 6" GATE VALVE WITH BOX
1 EA - INSTALL STANDARD FIRE HYDRANT
2 EA - 16" RETAINED GLAND
4 EA - 6" RETAINER GLAND

STA 514+00.0 54' L
INSTALL SERVICE
54 LF - 1" HDPE WATER SERVICE
1 EA - 1" CORP STOP AND SADDLE
1 EA - 1" CURB STOP & BOX
1 EA - RECONNECT WATER SERVICE



LEGEND

- 6"W — PROPOSED 6" PVC WATER MAIN
- 16"W — PROPOSED 16" PVC WATER MAIN
- (T) (X) (B) (C) (S) (V) (H) — PROPOSED PIPE FITTING (TEE, CROSS, BEND, CAP, SLEEVE, VALVE WITH BOX, FIRE HYDRANT)
- PROPOSED STORM SEWER
- REMOVE WATER MAIN



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85TH STREET WATER MAIN LAYOUT

REVISED 6.30.25
FOR BIDDING PURPOSES ONLY

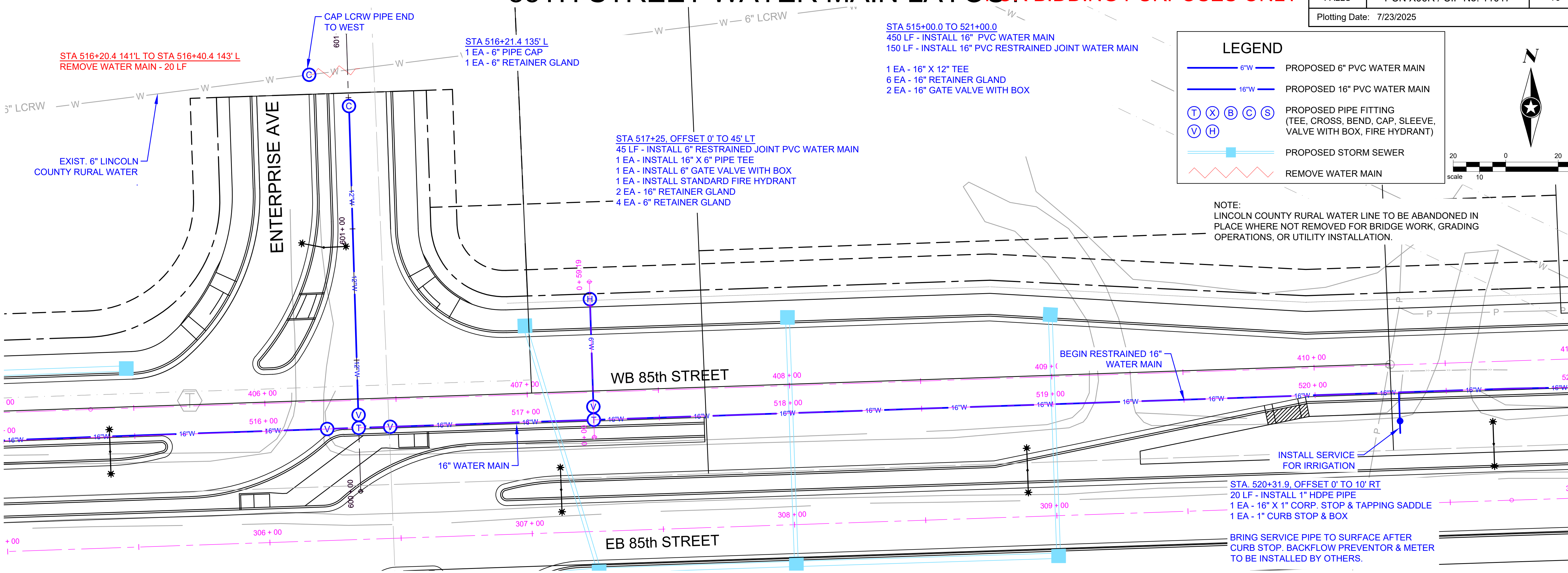
CITY OF SIOUX FALLS	PROJECT	SHEET	TOTAL SHEETS
	PCN X06R / CIP No. 11017	10	27

Plotting Date: 7/23/2025

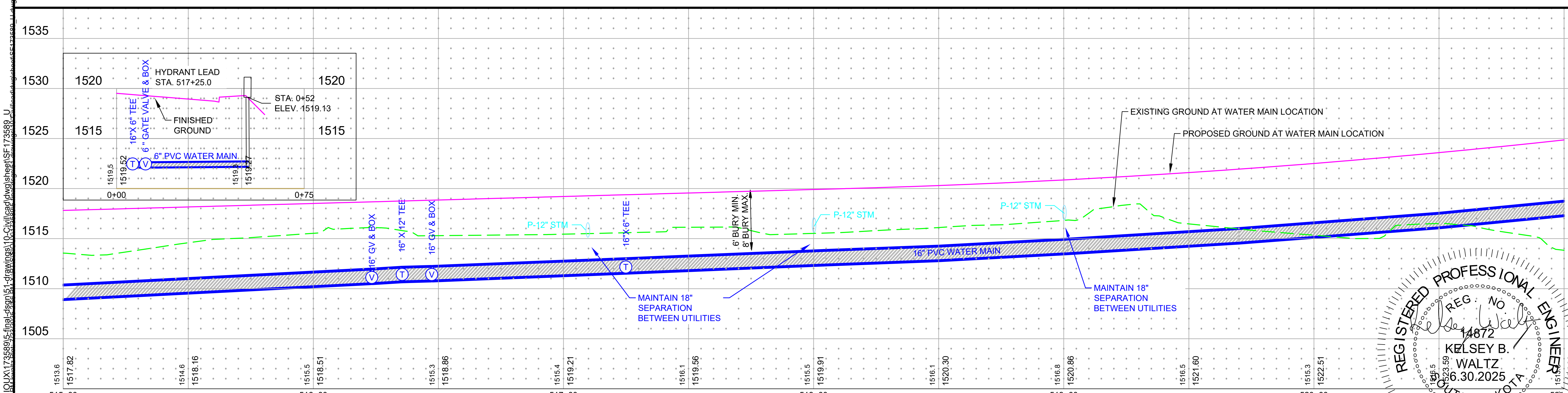
LEGEND

- PROPOSED 6" PVC WATER MAIN
- PROPOSED 16" PVC WATER MAIN
- PROPOSED PIPE FITTING (TEE, CROSS, BEND, CAP, SLEEVE, VALVE WITH BOX, FIRE HYDRANT)
- PROPOSED STORM SEWER
- REMOVE WATER MAIN

NOTE:
LINCOLN COUNTY RURAL WATER LINE TO BE ABANDONED IN PLACE WHERE NOT REMOVED FOR BRIDGE WORK, GRADING OPERATIONS, OR UTILITY INSTALLATION.



CAP LCRW PIPE END TO WEST
STA 516+20.4 141'L TO STA 516+40.4 143' L
REMOVE WATER MAIN - 20 LF
STA 516+21.4 135' L
1 EA - 6" PIPE CAP
1 EA - 6" RETAINER GLAND
STA 515+00.0 TO 521+00.0
450 LF - INSTALL 16" PVC WATER MAIN
150 LF - INSTALL 16" PVC RESTRAINED JOINT WATER MAIN
1 EA - 16" X 12" TEE
6 EA - 16" RETAINER GLAND
2 EA - 16" GATE VALVE WITH BOX
STA 517+25, OFFSET 0' TO 45' LT
45 LF - INSTALL 6" RESTRAINED JOINT PVC WATER MAIN
1 EA - INSTALL 16" X 6" PIPE TEE
1 EA - INSTALL 6" GATE VALVE WITH BOX
1 EA - INSTALL STANDARD FIRE HYDRANT
2 EA - 16" RETAINER GLAND
4 EA - 6" RETAINER GLAND
EXIST. 6" LINCOLN COUNTY RURAL WATER
6" LCRW
ENTERPRISE AVE
WB 85th STREET
EB 85th STREET
16" WATER MAIN
BEGIN RESTRAINED 16" WATER MAIN
INSTALL SERVICE FOR IRRIGATION
STA. 520+31.9, OFFSET 0' TO 10' RT
20 LF - INSTALL 1" HDPE PIPE
1 EA - 16" X 1" CORP. STOP & TAPPING SADDLE
1 EA - 1" CURB STOP & BOX
BRING SERVICE PIPE TO SURFACE AFTER CURB STOP. BACKFLOW PREVENTOR & METER TO BE INSTALLED BY OTHERS.
N
scale 20 0 10 20 40 feet



1535 1530 1525 1520 1515 1510 1505
HYDRANT LEAD
STA. 517+25.0
STA. 0+52
ELEV. 1519.13
FINISHED GROUND
6" PVC WATER MAIN
16"X 6" TEE
6" GATE VALVE & BOX
0+00 0+75
EXISTING GROUND AT WATER MAIN LOCATION
PROPOSED GROUND AT WATER MAIN LOCATION
16" GV & BOX
16" X 12" TEE
16" GV & BOX
16"X 6" TEE
P-12" STM
6' BURY MIN
8' BURY MAX
16" PVC WATER MAIN
MAINTAIN 18" SEPARATION BETWEEN UTILITIES
515+00 516+00 517+00 518+00 519+00 520+00 521+00

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 14872
KELSEY B. WALTZ
6.30.2025
SOUTH DAKOTA

SEH

85TH STREET WATER MAIN LAYOUT

FOR BIDDING PURPOSES ONLY

REVISED 6-30-25

CITY OF SIOUX FALLS	PROJECT	SHEET	TOTAL SHEETS
	PCN X06R / CIP No. 11017	11	27
Plotting Date: 7/23/2025			

LEGEND

- 6"W — PROPOSED 6" PVC WATER MAIN
- 16"W — PROPOSED 16" PVC WATER MAIN
- T X B C S V H — PROPOSED PIPE FITTING (TEE, CROSS, BEND, CAP, SLEEVE, VALVE WITH BOX, FIRE HYDRANT)
- PROPOSED STORM SEWER
- REMOVE WATER MAIN

NOTE:
LINCOLN COUNTY RURAL WATER LINE TO BE ABANDONED IN PLACE WHERE NOT REMOVED FOR BRIDGE WORK, GRADING OPERATIONS, OR UTILITY INSTALLATION.

STA. 521+00.0 TO 527+00.0
80 LF - INSTALL 16" PVC WATER MAIN
520 LF - INSTALL 16" PVC RESTRAINED JOINT WATER MAIN

1 EA - 45 DEG. 16" PIPE BEND
2 EA - 22.5 DEG. 16" PIPE BEND
8 EA - 16" RETAINER GLAND
1 EA - 16" GATE VALVE WITH BOX

STA. 524+90.0
28 LF - INSTALL 6" PVC RESTRAINED JOINT WATER MAIN
1 EA - 16"X6" TANGENTIAL TEE
4 EA - 6" RETAINER GLAND
2 EA - 16" RETAINER GLAND
1 EA - 6" GATE VALVE WITH BOX
1 EA - STANDARD FIRE HYDRANT

END RESTRAINED 16" WATER MAIN

EXIST. 6" LINCOLN COUNTY RURAL WATER .

INSTALL TANGENTIAL TEE (SEE DETAIL)

6" LCRW

WB 85th STREET

16" WATER MAIN

STA 521+70.0, OFFSET 0' TO 70' RT
70 LF - INSTALL 6" PVC RESTRAINED JOINT WATER MAIN
1 EA - INSTALL 16" X 6" PIPE TEE
1 EA - INSTALL 6" GATE VALVE WITH BOX
1 EA - INSTALL STANDARD FIRE HYDRANT
2 EA - 16" RETAINER GLAND
4 EA - 6" RETAINER GLAND

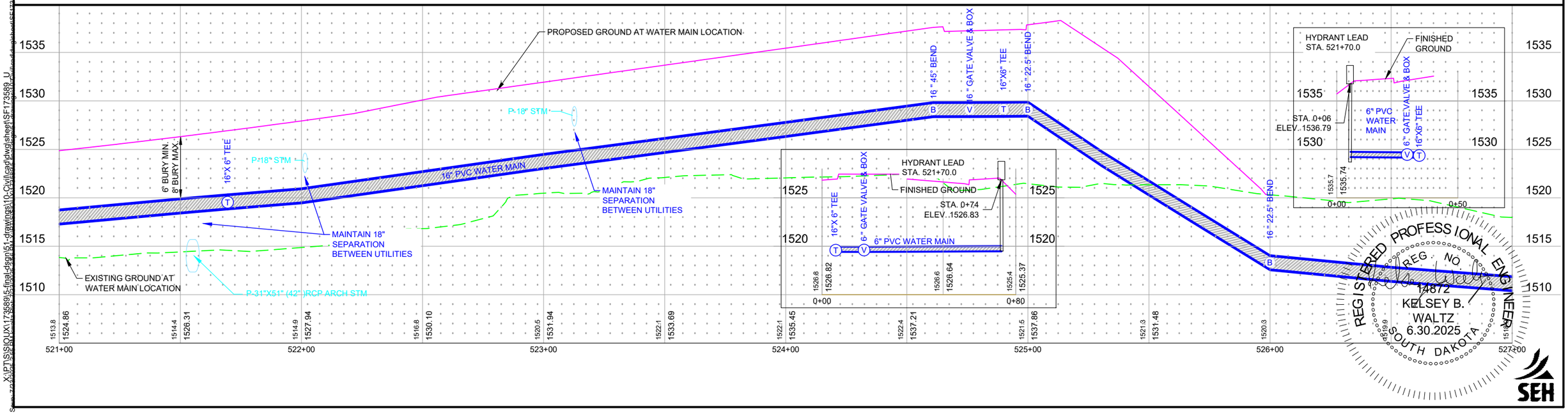
EB 85th STREET

RAMP H

RAMP G

N

20 0 20 40
scale 10 feet



REGISTERED PROFESSIONAL ENGINEER
REG. NO. 14872
KELSEY B. WALTZ
6.30.2025
SOUTH DAKOTA

SEH

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85TH STREET WATER MAIN LAYOUT

FOR BIDDING PURPOSES ONLY

CITY OF SIOUX FALLS	PROJECT	SHEET	TOTAL SHEETS
	PCN X06R / CIP No. 11017	12	27

Plotting Date: 7/23/2025

NOTES:
1. WATERMAIN AND CASING INSTALLED UNDER FUTURE I-29 RAMPS TO BE COMPLETED USING OPEN CUT OPERATIONS.
2. LINCOLN COUNTY RURAL WATER LINE TO BE ABANDONED IN PLACE WHERE NOT REMOVED FOR BRIDGE WORK, GRADING OPERATIONS, OR UTILITY INSTALLATION.

N

20 0 20 40
scale 10 feet

STA. 527+00.0 TO 533+00.0
160 LF - INSTALL 16" PVC WATER MAIN
440 LF - INSTALL 16" PVC RESTRAINED JOINT WATER MAIN
440 LF - 24" STEEL ENCASEMENT PIPE
220 LF - BORE & JACK 24" PIPE
2 EA - BORE OBSTRUCTION

1 EA - 45 DEG. 16" PIPE BEND
2 EA - 16" RETAINER GLAND

SB 1-29

NB 1-29

20 LF 24" STEEL ENCASEMENT PIPE
RESTRAIN 200 LF 16" WATER MAIN

527+00 528+00 529+00 530+00 531+00 532+00 533

16"W

RESTRAIN 30 LF
16" WATER MAIN

200LF 24" STEEL ENCASEMENT PIPE
RESTRAIN 200 LF 16" WATER MAIN

16" WATER MAIN

220 LF 24" STEEL ENCASEMENT PIPE
BORE & JACK 24" PIPE
RESTRAIN 220 LF 16" WATER MAIN

LEGEND

- 6"W — PROPOSED 6" PVC WATER MAIN
- 16"W — PROPOSED 16" PVC WATER MAIN
- X B C S V H — PROPOSED PIPE FITTING (TEE, CROSS, BEND, CAP, SLEEVE, VALVE WITH BOX, FIRE HYDRANT)
- PROPOSED STORM SEWER
- REMOVE WATER MAIN

1540 1535 1530 1525 1520 1515 1510 1505 1500

PROPOSED GROUND AT WATER MAIN LOCATION

EXISTING GROUND AT WATER MAIN LOCATION

16" 45° BEND

200 LF 24" STEEL

6' BURY MIN
8' BURY MAX

16" PVC WATER MAIN

220 LF 24" STEEL
(BORE & JACK)

20 LF - 16" PVC
RESTRAINED JOINT
WATER MAIN

24" STEEL ENCASEMENT PIPE
STA. 532+76
ELEV. 1509.07

24" STEEL ENCASEMENT PIPE
STA. 527+14
ELEV. 1509.81

200 LF - 16" PVC
RESTRAINED JOINT
WATER MAIN

24" STEEL ENCASEMENT PIPE
STA. 529+14
ELEV. 1509.28

24" STEEL ENCASEMENT PIPE
STA. 529+91
ELEV. 1508.90

220 LF - 16" PVC
RESTRAINED JOINT
WATER MAIN

24" STEEL ENCASEMENT PIPE
STA. 532+11
ELEV. 1509.07

1518.0 1517.8 1530.05 1518.0 1541.61 1519.5 1540.02 1519.6 1524.68 1521.3 1518.38 1518.8 1518.91 1522.5 1519.2 1522.6 1518.2 1518.11 1520.2 1526.37

527+00 528+00 529+00 530+00 531+00 532+00 533+00

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 14872
KELSEY B. WALTZ
5.16.2025
SOUTH DAKOTA

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85TH STREET WATER MAIN LAYOUT

FOR BIDDING PURPOSES ONLY

REVISED 6-30-25

CITY OF SIOUX FALLS	PROJECT	SHEET	TOTAL SHEETS
	PCN X06R / CIP No. 11017	13	27
Plotting Date: 7/23/2025			

NOTES:
1. WATERMAIN AND CASING INSTALLED UNDER FUTURE I-29 RAMPS TO BE COMPLETED USING OPEN CUT OPERATIONS.
2. LINCOLN COUNTY RURAL WATER LINE TO BE ABANDONED IN PLACE WHERE NOT REMOVED FOR BRIDGE WORK, GRADING OPERATIONS, OR UTILITY INSTALLATION.

N

scale 20 0 20 40 10 feet

STA. 533+00.0 TO 539+00.0
120 LF - INSTALL 16" PVC WATER MAIN
480 LF - INSTALL 16" PVC RESTRAINED JOINT WATER MAIN
180 LF - 24" STEEL ENCASEMENT PIPE

2 EA - 45 DEG. 16" PIPE BEND
4 EA - 16" RETAINER GLAND

180 LF 24" STEEL ENCASEMENT PIPE
RESTRAIN 200 LF 16" WATER MAIN

BEGIN RESTRAINED
16" WATER MAIN

16" WATER MAIN

EXIST. 6" LINCOLN
COUNTY RURAL WATER .

INSTALL TANGENTIAL TE

PEDESTRIAN TRAIL

RAMP A

RAMP E

RAMP F

WB 85th STREET

6" LCRW

LEGEND

- 6"W — PROPOSED 6" PVC WATER MAIN
- 16"W — PROPOSED 16" PVC WATER MAIN
- T X B C S V H — PROPOSED PIPE FITTING (TEE, CROSS, BEND, CAP, SLEEVE, VALVE WITH BOX, FIRE HYDRANT)
- PROPOSED STORM SEWER
- REMOVE WATER MAIN

PROPOSED GROUND AT WATER MAIN LOCATION

EXISTING GROUND AT WATER MAIN LOCATION

6' BURY MIN.
8' BURY MAX.

16" 45° BEND

MAINTAIN 18" SEPARATION BETWEEN UTILITIES

18" STM

200 LF 24" STEEL

16" WATER MAIN

200 LF - 16" PVC
RESTRAINED JOINT
WATER MAIN

24" STEEL ENCASEMENT PIPE
STA: 534+76.07
ELEV. 1509.58

1540 1535 1530 1525 1520 1515 1510 1505

1520.2 1526.37 | 1517.8 1540.35 | 1516.8 1539.96 | 1517.2 1526.37 | 1517.8 | 1518.0 1522.12 | 1517.1 1520.74 | 1516.5 1522.18 | 1516.6 1523.30 | 1517.8 1527.98 | 1519.7 1531.18 | 1520.7 1531.68 | 1524.0 1539.76

533+00 534+00 535+00 536+00 537+00 538+00 539+00

REGISTERED PROFESSIONAL ENGINEER
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KELSEY B. WALTZ
6.30.2025
SOUTH DAKOTA

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85TH STREET WATER MAIN LAYOUT

REVISED 6.30.25

FOR BIDDING PURPOSES ONLY

CITY OF SIOUX FALLS	PROJECT	SHEET	TOTAL SHEETS
	PCN X06R / CIP No. 11017	14	27
Plotting Date: 7/23/2025			

LEGEND

- 6"W — PROPOSED 6" PVC WATER MAIN
- 16"W — PROPOSED 16" PVC WATER MAIN
- (T) (X) (B) (C) (S) (V) (H) — PROPOSED PIPE FITTING (TEE, CROSS, BEND, CAP, SLEEVE, VALVE WITH BOX, FIRE HYDRANT)
- PROPOSED STORM SEWER
- REMOVE WATER MAIN

NOTE:
LINCOLN COUNTY RURAL WATER LINE TO BE ABANDONED IN PLACE WHERE NOT REMOVED FOR BRIDGE WORK, GRADING OPERATIONS, OR UTILITY INSTALLATION.

N

scale 20 0 20 40 feet; 10

STA. 539+00.0 TO 545+00.0
470 LF - INSTALL 16" PVC WATER MAIN
130 LF - INSTALL 16" PVC RESTRAINED JOINT WATER MAIN

STA 543+75.0, OFFSET 0' TO 35' LT
35 LF - INSTALL 6" PVC RESTRAINED JOINT WATER MAIN
1 EA - INSTALL 16" X 6" PIPE TEE
1 EA - INSTALL 6" GATE VALVE WITH BOX
1 EA - INSTALL STANDARD FIRE HYDRANT
4 EA - 6" RETAINER GLAND
2 EA - 16" RETAINER GLAND

STA 543+71.8 43' L TO STA 543+81.8 43' L
REMOVE WATER MAIN - 10 LF

EXIST. 6" LINCOLN COUNTY RURAL WATER .

END RESTRAINED 16" WATER MAIN

INSTALL TANGENTIAL TEE (SEE DETAIL)

16" WATER MAIN

INSTALL SERVICE FOR IRRIGATION

WB 85th STREET

EB 85th STREET

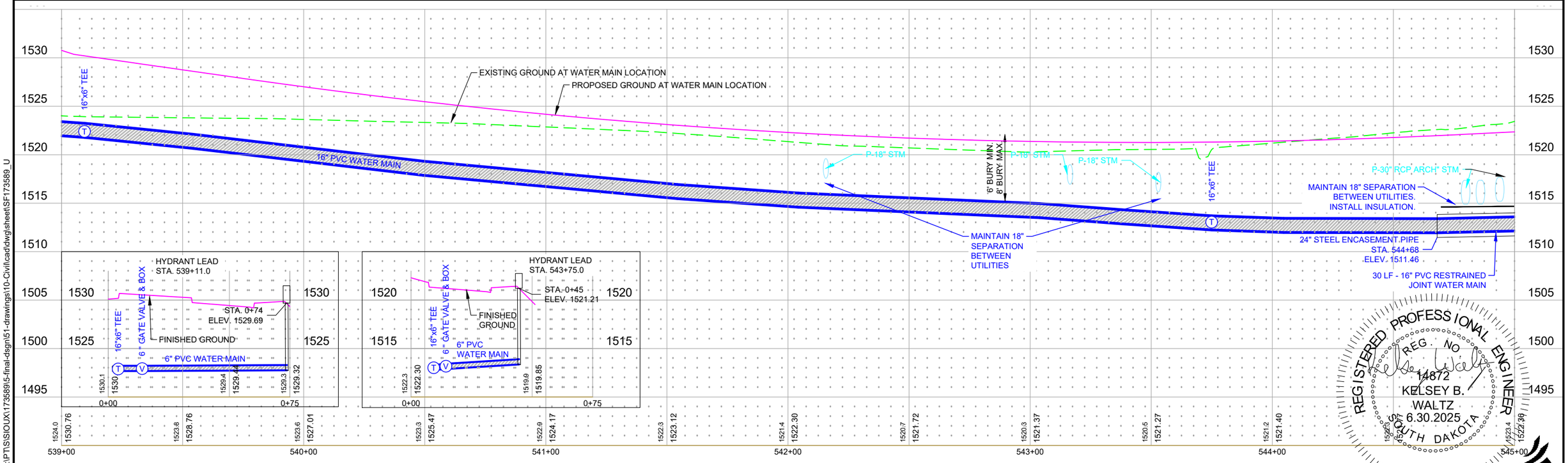
30 LF 24" STEEL ENCASEMENT PIPE

RESTRAIN 30 LF 16" WATER MAIN

STA 539+11.0, OFFSET 0' TO 65' RT
65 LF - INSTALL 6" RESTRAINED JOINT PVC WATER MAIN
1 EA - INSTALL 16" X 6" PIPE TANGENTIAL TEE
1 EA - INSTALL 6" GATE VALVE WITH BOX
1 EA - INSTALL STANDARD FIRE HYDRANT
4 EA - 6" RETAINER GLAND
2 EA - 16" RETAINER GLAND

STA. 541+98.2, OFFSET 0' TO 10' LT
15 LF - INSTALL 1" HDPE PIPE
1 EA - 16" X 1" CORP. STOP & TAPPING SADDLE
1 EA - 1" CURB STOP & BOX

BRING SERVICE PIPE TO SURFACE AFTER CURB STOP. BACKFLOW PREVENTOR & METER TO BE INSTALLED BY OTHERS.



REGISTERED PROFESSIONAL ENGINEER
REG. NO. 14872
KELSEY B. WALTZ
6.30.2025
SOUTH DAKOTA

SEH

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85TH STREET WATER MAIN LAYOUT

REVISED 6.30.25
FOR BIDDING PURPOSES ONLY

CITY OF SIOUX FALLS	PROJECT	SHEET	TOTAL SHEETS
	PCN X06R / CIP No. 11017	15	27

Plotting Date: 7/22/2025

LEGEND

- PROPOSED 6" PVC WATER MAIN
- PROPOSED 16" PVC WATER MAIN
- (T) (X) (B) (C) (S) (V) (H) PROPOSED PIPE FITTING (TEE, CROSS, BEND, CAP, SLEEVE, VALVE WITH BOX, FIRE HYDRANT)
- PROPOSED STORM SEWER
- REMOVE WATER MAIN

STA 545+95.3 44' L TO STA 546+05.3 44' L
REMOVE WATER MAIN - 10 LF

STA 548+06.5, OFFSET 0' TO 54' LT
54 LF - INSTALL 6" PVC RESTRAINED JOINT WATER MAIN
1 EA - INSTALL 16" X 6" PIPE TEE
1 EA - INSTALL 6" GATE VALVE WITH BOX
1 EA - INSTALL STANDARD FIRE HYDRANT
4 EA - 6" RETAINER GLAND
2 EA - 16" RETAINER GLAND

STA. 545+00.0 TO 550+60.0
464 LF - INSTALL 16" PVC WATER MAIN
96 LF - INSTALL 16" PVC RESTRAINED JOINT WATER MAIN

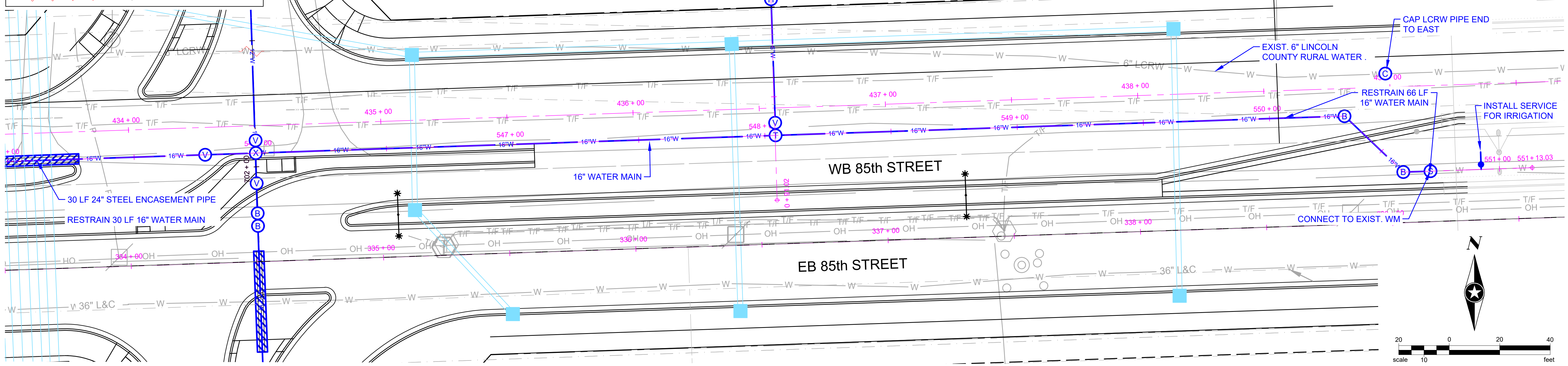
1 EA - 16"X12" PIPE CROSS
1 EA - 16" PIPE SLEEVE
2 EA - 16" 45° BEND
1 EA - 16" GATE VALVE & BOX
12 EA - 16" RETAINER GLAND
1 EA - CONNECT TO EXISTING WATER MAIN

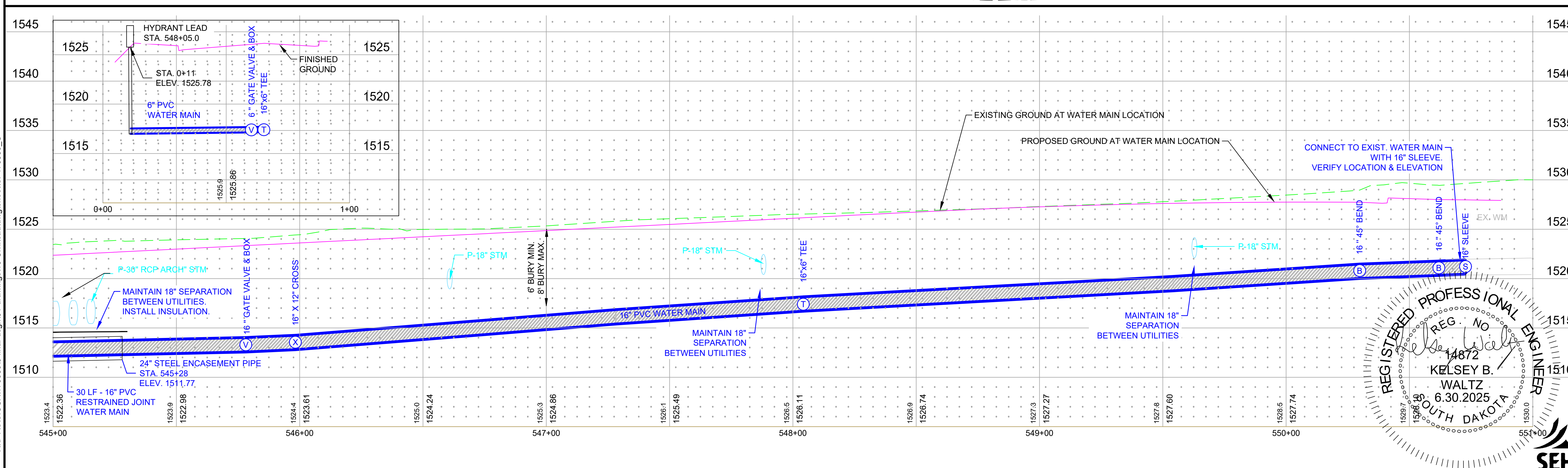
NOTE:
LINCOLN COUNTY RURAL WATER LINE TO BE ABANDONED IN PLACE WHERE NOT REMOVED FOR BRIDGE WORK, GRADING OPERATIONS, OR UTILITY INSTALLATION.

STA 550+52.0 33' L
1 EA - 6" PIPE CAP
1 EA - 6" RETAINER GLAND

STA. 550+92.7, OFFSET 0' TO 10' LT
15 LF - INSTALL 1" HDPE PIPE
1 EA - 16" X 1" CORP. STOP & TAPPING SADDLE
1 EA - 1" CURB STOP & BOX

BRING SERVICE PIPE TO SURFACE AFTER CURB STOP. BACKFLOW PREVENTOR & METER TO BE INSTALLED BY OTHERS.





REGISTERED PROFESSIONAL ENGINEER
REG. NO. 14872
KELSEY B. WALTZ
6.30.2025
SOUTH DAKOTA

SEH

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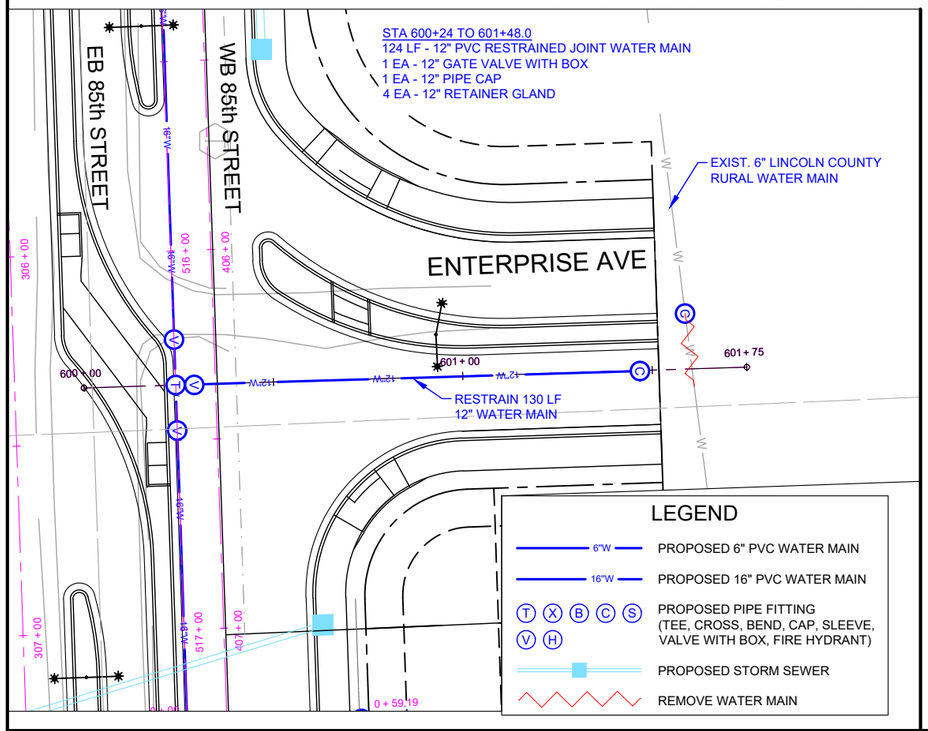
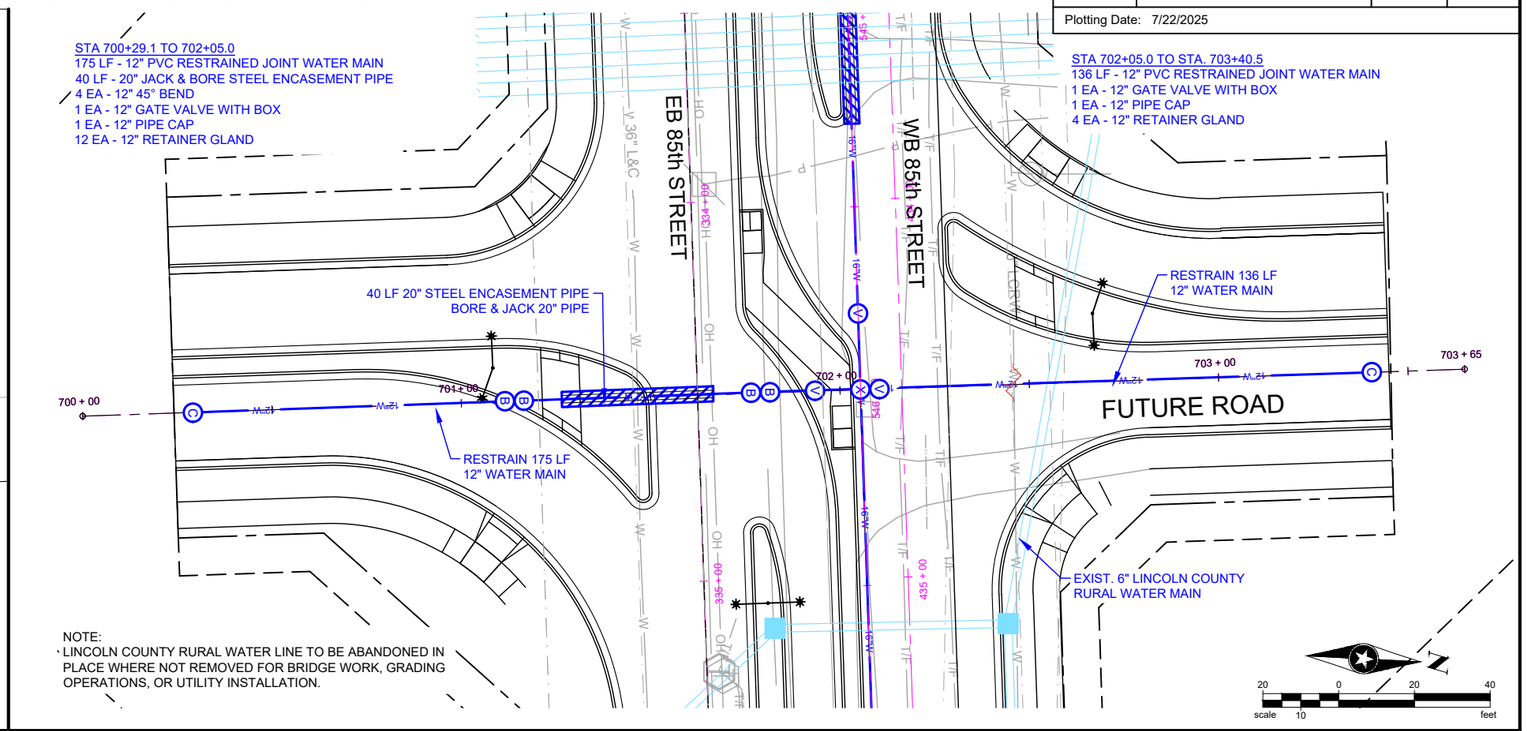
ENTERPRISE AVENUE / FUTURE ROAD WATER MAIN LAYOUT

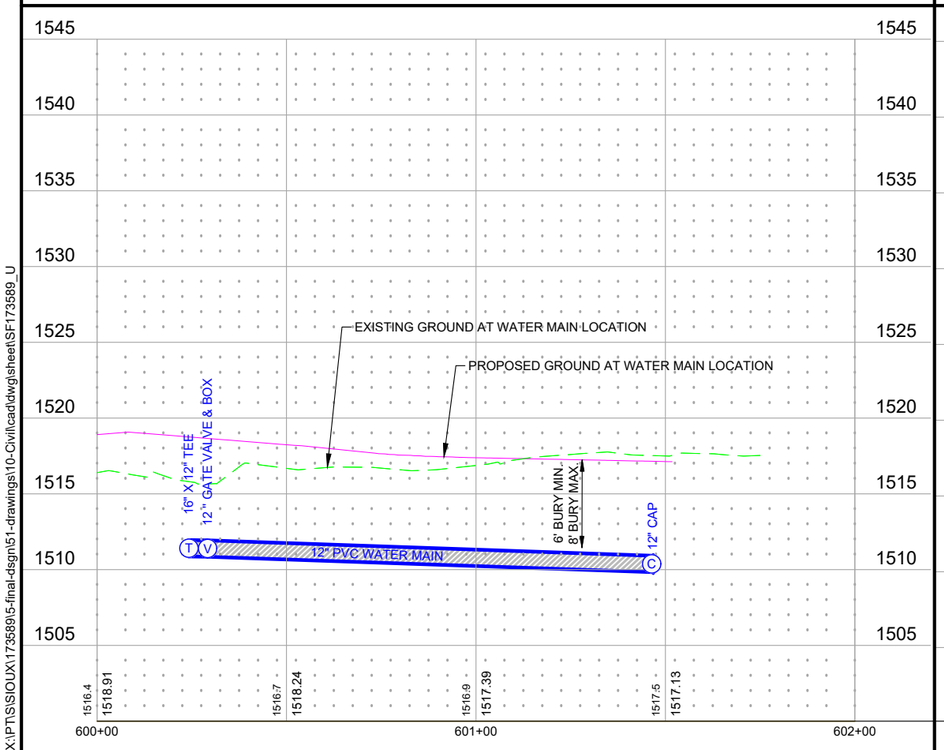
REVISED 6.30.25
FOR BIDDING PURPOSES ONLY

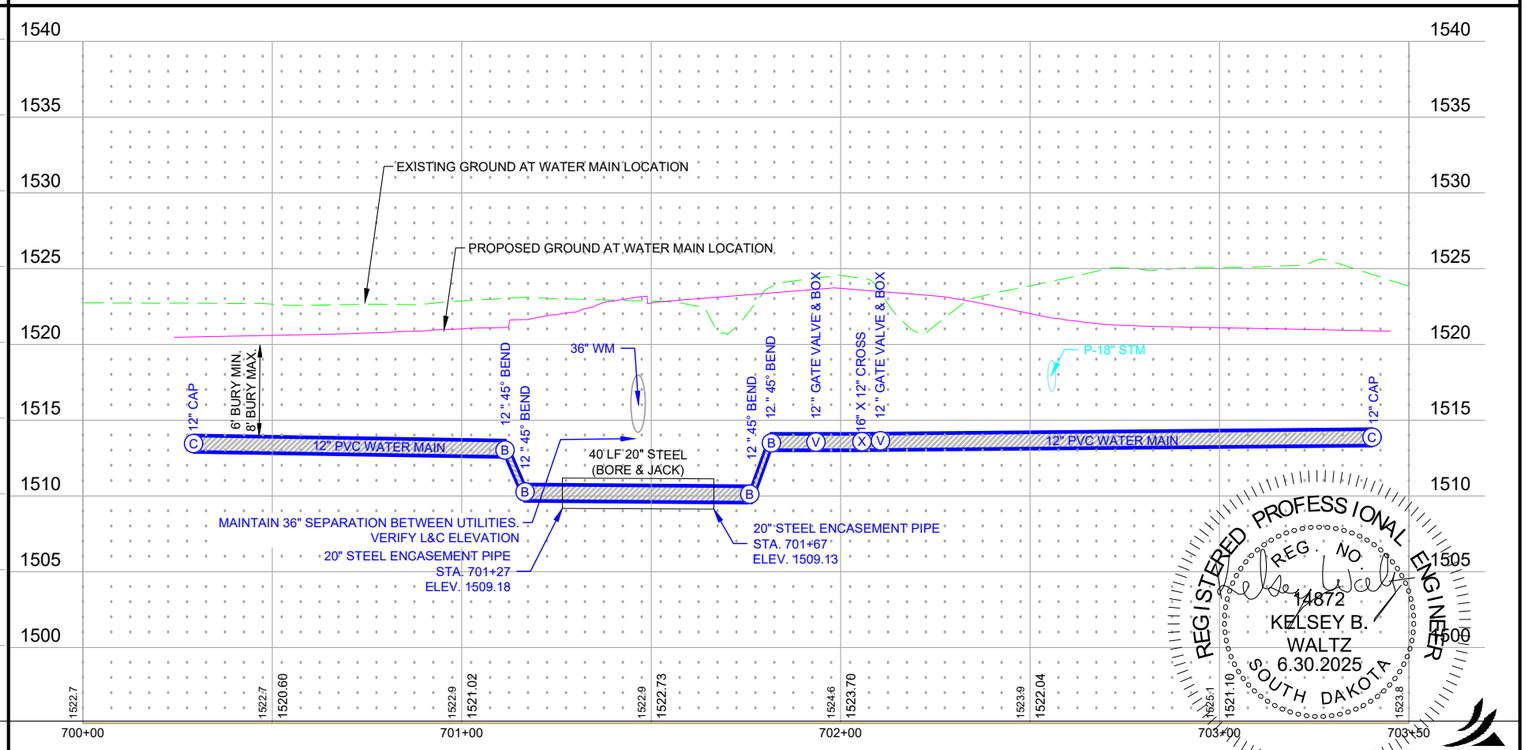
CITY OF SIOUX FALLS	PROJECT	SHEET	TOTAL SHEETS
	PCN X06R / CIP No. 11017	16	27

Plotting Date: 7/22/2025









REGISTERED PROFESSIONAL ENGINEER
REG. NO. 14872
KELSEY B. WALTZ
6.30.2025
SOUTH DAKOTA

SEH

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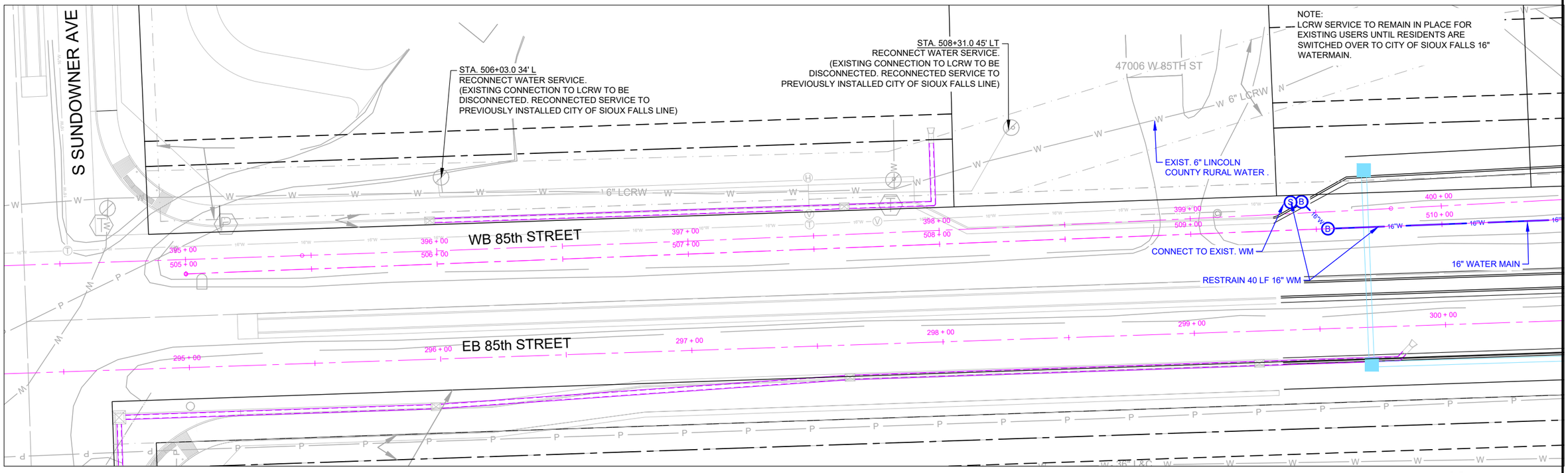
85TH STREET WATER MAIN LAYOUT

REVISED 6.30.25
FOR BIDDING PURPOSES ONLY

CITY OF SIOUX FALLS	PROJECT	SHEET	TOTAL SHEETS
	PCN X06R / CIP No. 11017	17	27
Plotting Date: 7/22/2025			



N

20 0 20 40
scale 10 feet

LEGEND

- 6"W — PROPOSED 6" PVC WATER MAIN
- 16"W — PROPOSED 16" PVC WATER MAIN
- T X B C S V H — PROPOSED PIPE FITTING (TEE, CROSS, BEND, CAP, SLEEVE, VALVE WITH BOX, FIRE HYDRANT)
- PROPOSED STORM SEWER
- REMOVE WATER MAIN

REGISTERED PROFESSIONAL ENGINEER
REG. NO.
14872
KELSEY B.
WALTZ
6.30.2025
SOUTH DAKOTA

SEH

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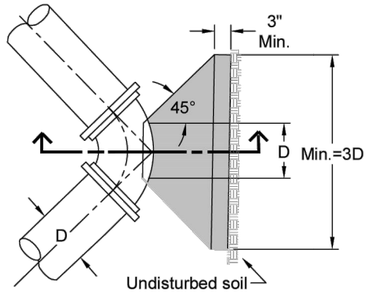
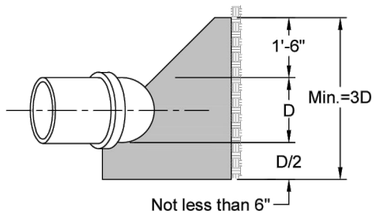
Concrete Thrust Blocks

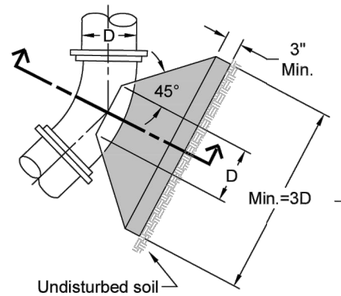


Plan View

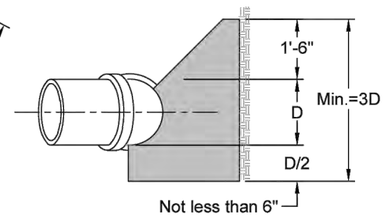


Section View

90 - Degree Bend

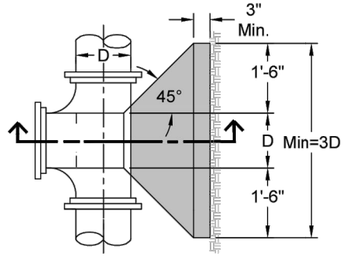


Plan View

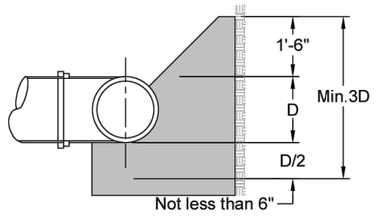


Section View

11 1/4 - Degree, 22 1/2 - Degree and 45 - Degree Bends

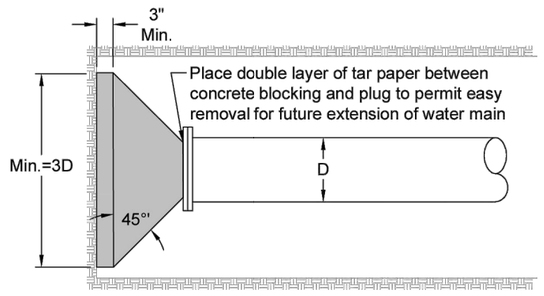


Plan View



Section View

Tee



S.J./M.J. Plug

Revised: December 2020

Concrete Thrust Blocks

CITY OF SIOUX FALLS
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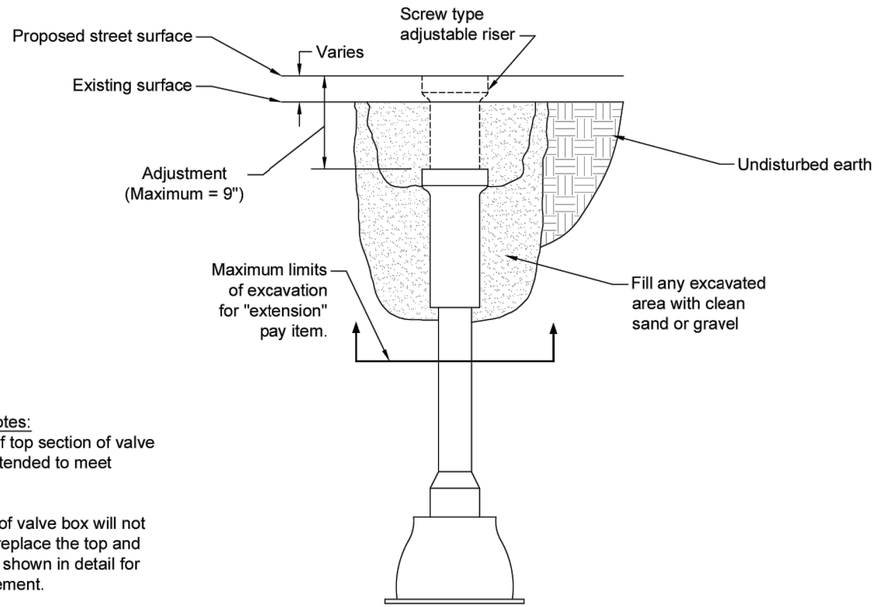
Specification Reference	Plate Number
No. 900	900.01

Valve Box Extension
(or replacement of top section)

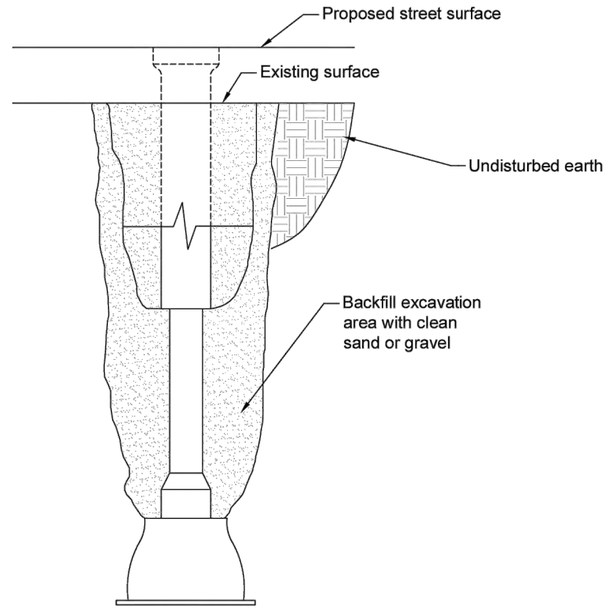


No Scale

Valve Box Extension Notes:

1. Use this method if top section of valve box cannot be extended to meet proposed grade.
2. If the top section of valve box will not accept the riser, replace the top and center section as shown in detail for valve box replacement.

Valve Box Installation



No Scale

General Notes:

1. Non-threaded adjustments will not be allowed.
2. Plumb valve box prior to backfilling. All valve boxes shall be adjusted to be flush with the pavement surface prior to placement of the pavement surfacing. The allowable vertical tolerance between the pavement surface and any part of the valve box shall be 0" to $\frac{1}{2}$" low. In no case shall the valve box be above the surface of the pavement.
3. It shall be the contractor's responsibility to provide a system to prevent material from entering the valve box during the work.
4. All adjustments shall be completed prior to opening up the street to traffic.

Revised: December 2020

Valve Box Installation and Extension

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Specification Reference	Plate Number
No. 900	900.02

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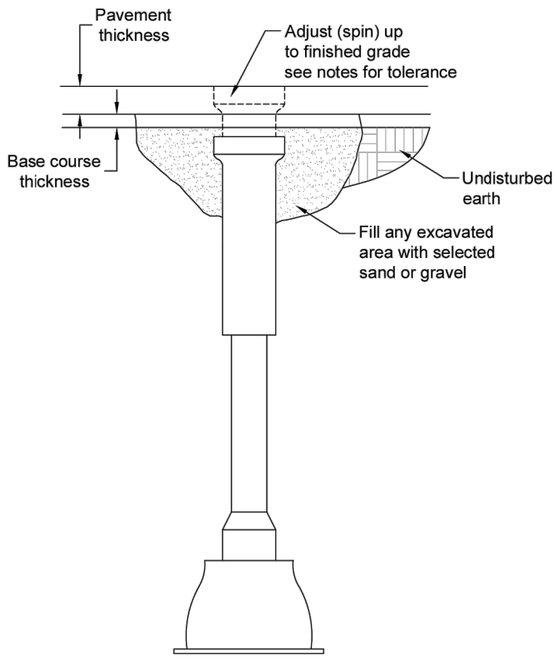
FOR BIDDING PURPOSES ONLY

CITY OF SIOUX FALLS	PROJECT	SHEET	TOTAL SHEETS
	PCN X06R / CIP No. 11017	20	27
Plotting Date: 7/22/2025			

Valve Box Adjustment

Spin Up Method



No Scale

Spin Up Method:

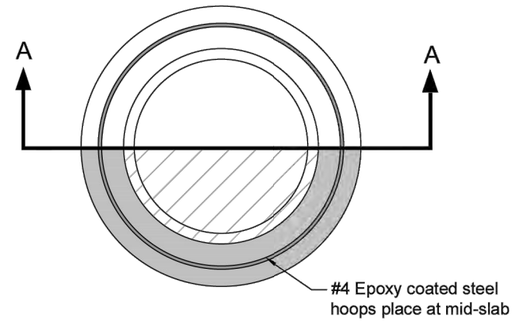
1. Use this method if top section of valve box can be adjusted to finished grade.

2. If the 0" to 1/2" tolerance cannot be met by the "spin up" method on asphalt streets, then the contractor shall be required to adjust the valve box by the circular cutout method. This additional work, if required, shall be incidental to the "valve box adjustment" bid item.

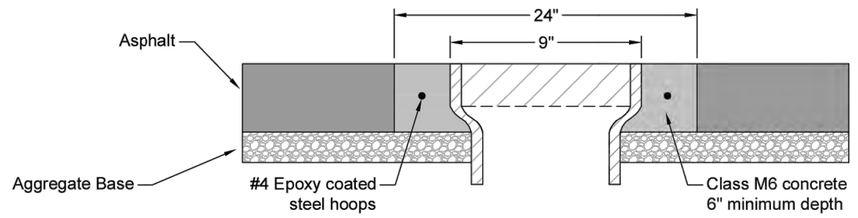
3. If the 0" to 1/2" tolerance can not be met by the "spin up" method on concrete streets, the repair method will be determined by the engineer. This additional work shall be incidental to the "valve box adjustment" bid item.

4. If the valve box needs minor adjustment, a minimal amount of heat can be applied to break the bond between the valve box and the asphalt. Full depth heating of the asphalt will not be allowed. If the asphalt appears to show signs of deterioration, it will be at the discretion of the engineer to require the cut out method.

Cutout Method



Circular Valve Box Cutout



Section A-A

Cut Out Method:

1. The circular concrete cutout shall be centered on the valve box frame.

2. The circular concrete cutout shall be constructed after the installation of the top lift of asphalt. The pavement shall be sawed full depth with a vertical face. The contractor shall ensure that the adjacent asphalt surface is left intact and undamaged when removing the circular cutout.

3. The circular concrete cutout diameter shall be 24".

4. Apply tack coat to the vertical asphalt surfaces prior to placement of concrete cutout.

5. Class M6 concrete shall be used for the cutout. Fast track concrete may be used at the discretion of the engineer.

6. Steel reinforcing shall be epoxy coated grade 40.

7. Steel reinforcing shall consists of #4 hoops (variable length) supported by approved chairs.

8. Maintain a minimum of 2" clearance on all steel reinforcing.

9. All work associated with constructing the circular concrete cutout, including, but not limited to: all materials, sawing, steel reinforcing, chairs, concrete, labor, tools, removal and replacement, excavation and backfilling and other appurtenances shall be incidental to the "valve box adjustment" bid item.

General Notes:

1. Non-threaded adjustments will not be allowed.
2. Plumb valve box prior to backfilling. All valve boxes shall be adjusted to be flush with the pavement surface prior to placement of the pavement surfacing. The allowable vertical tolerance between the pavement surface and any part of the valve box shall be 0" to $\frac{1}{2}$" low. In no case shall the valve box be above the surface of the pavement.
3. It shall be the contractor's responsibility to provide a system to prevent material from entering the valve box during the work.
4. All adjustments shall be completed prior to opening up the street to traffic.

Revised: December 2020

Valve Box Adjustment

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Specification Reference	Plate Number
No. 900	900.03

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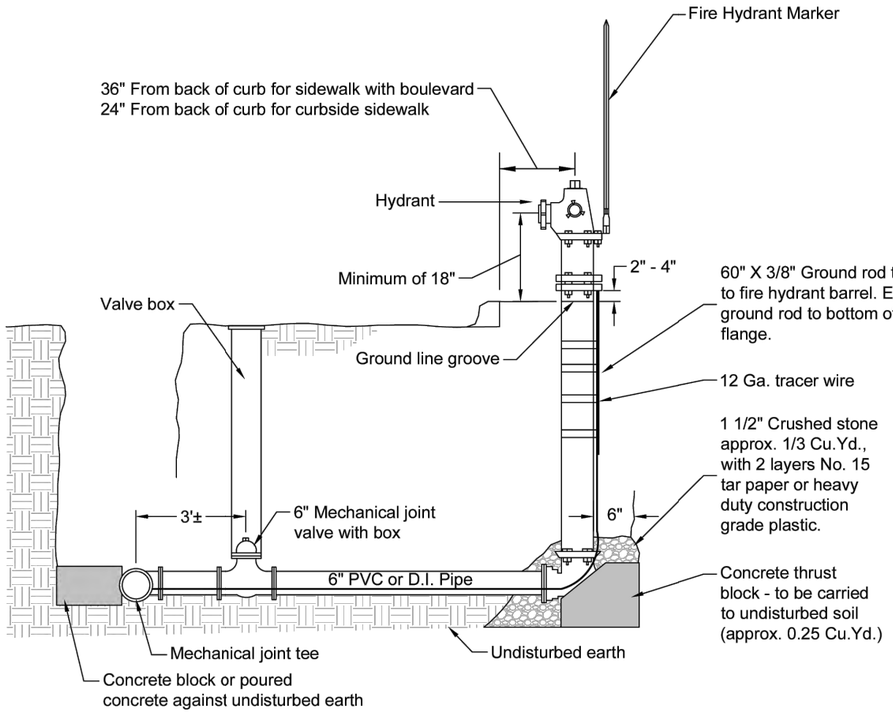
CITY OF SIOUX FALLS	PROJECT	SHEET	TOTAL SHEETS
	PCN X06R / CIP No. 11017	21	27
Plotting Date: 7/22/2025			

Hydrant Connection



General Notes:

1. Hydrant grade to be shown on plans.
2. Valve on fire hydrant lateral shall be restrained.
3. All exposed pipe joints shall be restrained on hydrant lateral.
4. Install V-bio polywrap on fire hydrant barrel to the ground surface before installing tracer wire system. Do not cover weep holes with polywrap.

Revised: December 2020

CITY OF SIOUX FALLS PUBLIC WORKS Providing a Better Quality of Life for You!	Hydrant Connection	Specification Reference No. 900	Plate Number 900.06

ALL WATER MAIN SHALL BE INSTALLED WITH APPROVED JOINT RESTRAINT CLAMPS, RODS, AND DEVICES AS ACCEPTED BY THE ENGINEER AT EACH FITTING. BASED UPON A 150 PSI TEST PRESSURE AND 8.0' COVER. THE FOLLOWING SHOWS THE MINIMUM LENGTH OF PIPE EACH WAY OF A FITTING TO BE RESTRAINED.

PIPE DIAMETER	DEAD END TEE BRANCH OR 90° BEND	45° BEND	22 1/2° BEND
6"	23 LF	7 LF	0 LF
8"	30 LF	10 LF	2 LF
10"	38 LF	12 LF	3 LF
12"	50 LF	14 LF	3 LF
16"	72 LF	24 LF	10 LF

WHERE RESTRAINED JOINTS ARE REQUIRED AND THE PIPE IS IN A CASING NEAR THE FITTING TO BE RESTRAINED, THE LENGTH OF PIPE IN THE CASING SHALL NOT BE INCLUDED IN THE LENGTH OF PIPE NECESSARY TO DEVELOP SUFFICIENT SOIL FRICTION TO OVERCOME THRUST.

ALL HYDRANTS, VALVES, SERVICES, FITTINGS AND PLUGS, STUBS AND EXTENSIONS, AND BLIND FLANGES USED FOR RETAINING WATER PRESSURE MUST BE TIED WITH TIE RODS OR RISER CLAMPS AND MEGA LUG COMBINATION AS A PRESSURE RESTRAINT. ALL TIE RODS OR BARE METALS SHALL HAVE TWO COATS OF BITUMASTIC OR ACCEPTED EQUAL.

NTS

SEH	THRUST RESTRAINT	Revised: Oct. 2011
		SEH Plate No. WAT-18

SEH

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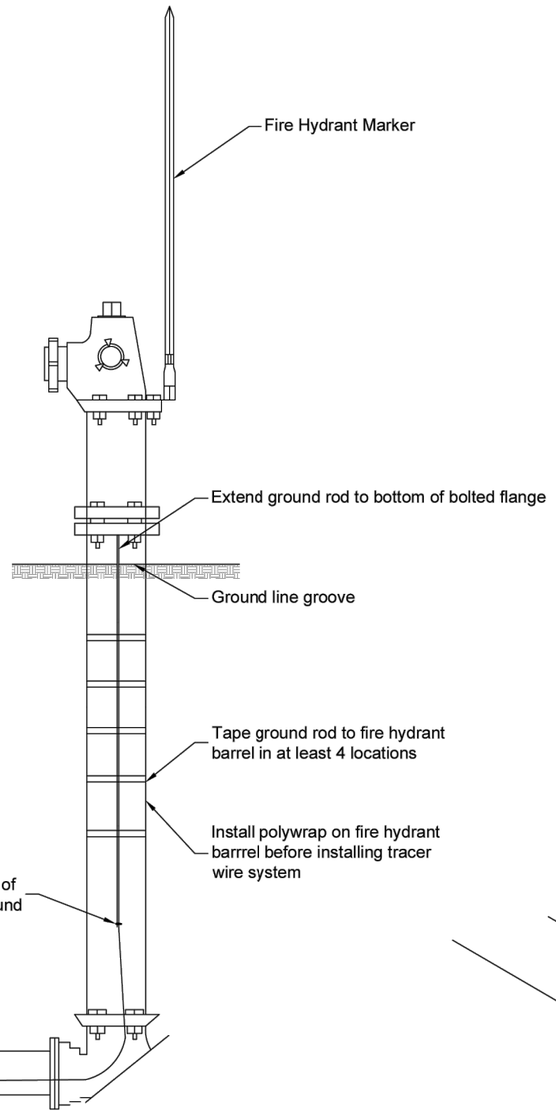
FOR BIDDING PURPOSES ONLY

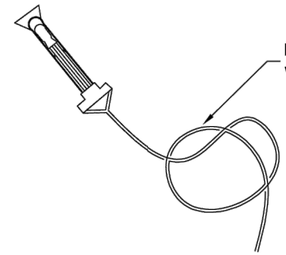
CITY OF SIOUX FALLS	PROJECT	SHEET	TOTAL SHEETS
	PCN X06R / CIP No. 11017	22	27

Plotting Date: 7/22/2025



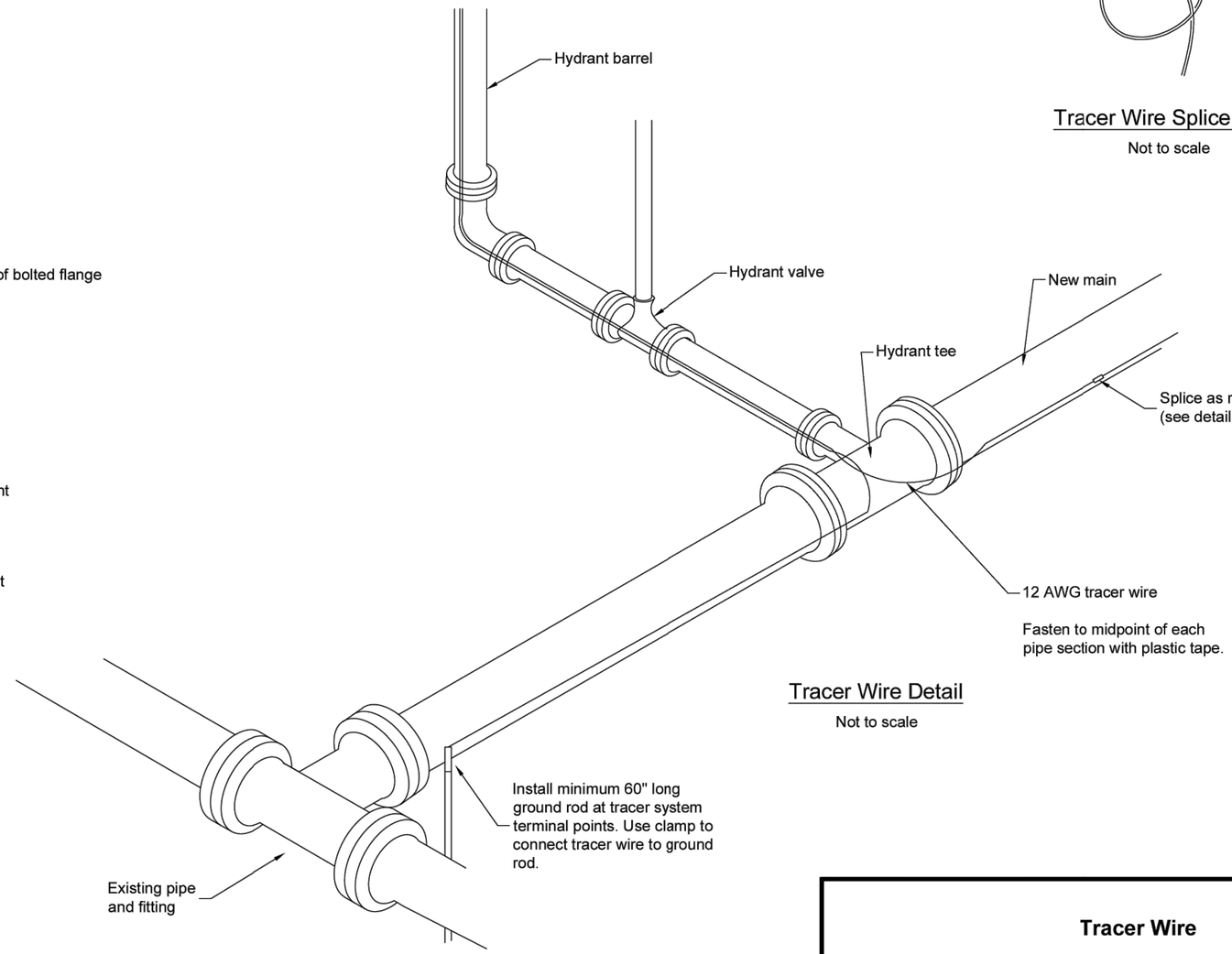
Tracer Wire Detail at Fire Hydrant

Not to scale



Tracer Wire Splice Detail

Not to scale



Tracer Wire Detail

Not to scale

Revised: December 2020

Tracer Wire

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Specification Reference	Plate Number
No. 900	900.07

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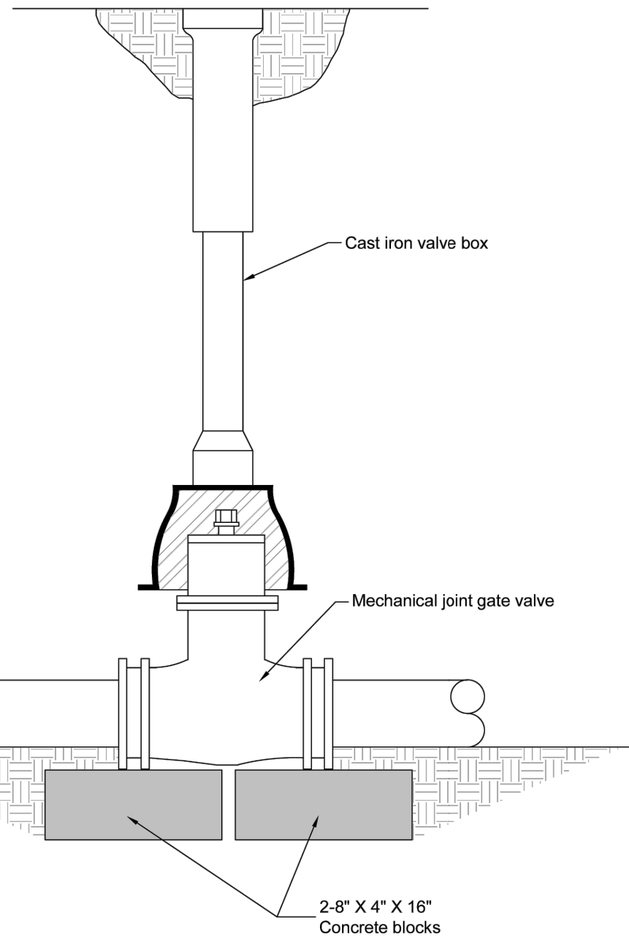
FOR BIDDING PURPOSES ONLY

CITY OF SIOUX FALLS	PROJECT	SHEET	TOTAL SHEETS
	PCN X06R / CIP No. 11017	23	27

Plotting Date: 7/22/2025

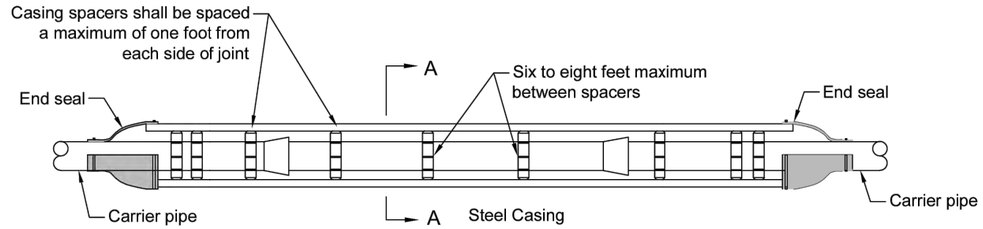


PVC Gate Valve Installation

Not to scale

Revised: January 1999

CITY OF SIOUX FALLS PUBLIC WORKS Providing a Better Quality of Life for You!	PVC Gate Valve Installation	Specification Reference No. 900	Plate Number 900.08



Elevation

Casing spacers and end seals shall be manufactured by Advanced Products and Systems, Inc. P.O. Box 60399 Lafayette, LA. 70596-0399 or equal and meet these requirements.

Casing Spacers - Model SSI-8 (Pipe sizes 24 inches in diameter and smaller) or Model SSI-12-2 (pipe sizes 30 inches in diameter and greater) with T-304 stainless steel spacer.
Band - 10 Gauge T-304 stainless steel.
Riser - 10 Gauge T-304 stainless steel.

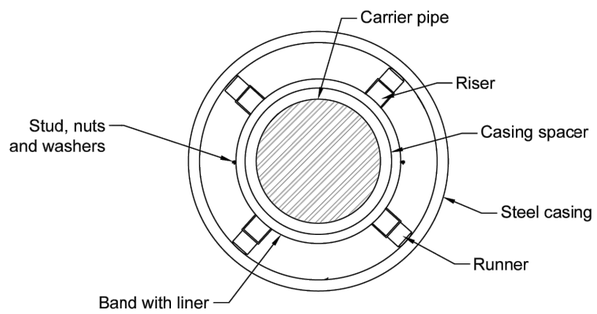
Runners - Two inch wide minimum glass reinforced plastic. The number of risers shall be as recommended by the manufacturer, but four is the minimum.

Studs, Nuts and Washers - T-304 stainless steel.

Heights - As required for center restraining

End Seals - Conical shaped wrap-around 1/8 inch rubber with T-304 stainless steel straps.

Casing pipe must conform to ASTM A53 grade B minimum yield strength of 35,000 pounds per square inch.



Section A-A

Pipe Size	Casing Size
4"	10"
6"	12"
8"	16"
10"	18"
12"	20"
16"	24"
20"	30"
24"	36"
30"	42"
>36"	*

*As recommended by manufacturer

Revised: December 2020

CITY OF SIOUX FALLS PUBLIC WORKS Providing a Better Quality of Life for You!	Standard Casing/Carrier for Water Pipe	Specification Reference No. 900	Plate Number 900.09

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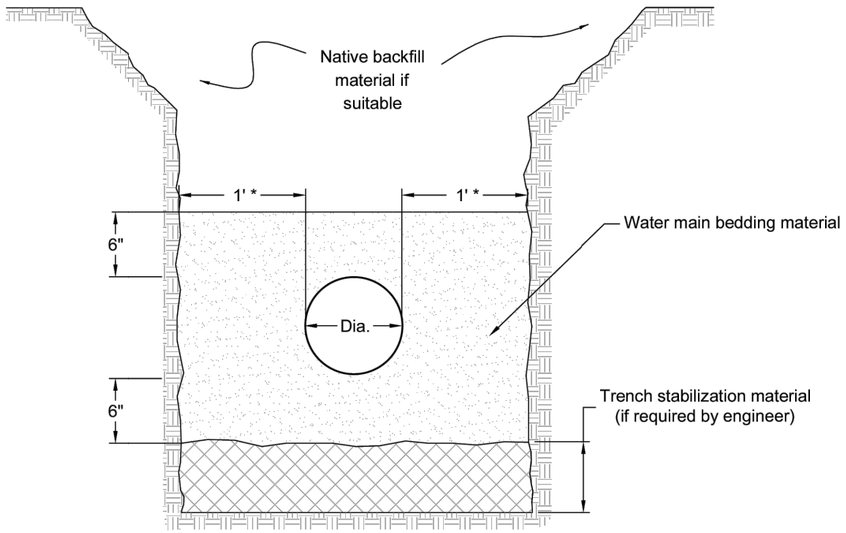
FOR BIDDING PURPOSES ONLY

CITY OF SIOUX FALLS	PROJECT	SHEET	TOTAL SHEETS
	PCN X06R / CIP No. 11017	24	27
Plotting Date: 7/22/2025			

Water Main Bedding



Pipe Size Diameter	Trench Width	Trench Height	Trench Area	Pipe Area	Water Main Bedding Mat. Area	Water Main Bedding Mat. Tons/LF
4"	28"	16"	3.11 Sq.Ft.	.09 Sq.Ft.	3.02 Sq.Ft.	0.21
6"	30"	18"	3.75 Sq.Ft.	.20 Sq.Ft.	3.55 Sq.Ft.	0.25
8"	32"	20"	4.44 Sq.Ft.	.35 Sq.Ft.	4.10 Sq.Ft.	0.29
10"	34"	22"	5.19 Sq.Ft.	.55 Sq.Ft.	4.65 Sq.Ft.	0.33
12"	36"	24"	6.00 Sq.Ft.	.79 Sq.Ft.	5.22 Sq.Ft.	0.37
16"	40"	28"	7.78 Sq.Ft.	1.40 Sq.Ft.	6.38 Sq.Ft.	0.45
20"	44"	32"	9.78 Sq.Ft.	2.18 Sq.Ft.	7.60 Sq.Ft.	0.53
24"	48"	36"	12.00 Sq.Ft.	3.14 Sq.Ft.	8.86 Sq.Ft.	0.62
30"	60"	42"	17.50 Sq.Ft.	4.91 Sq.Ft.	12.59 Sq.Ft.	0.88

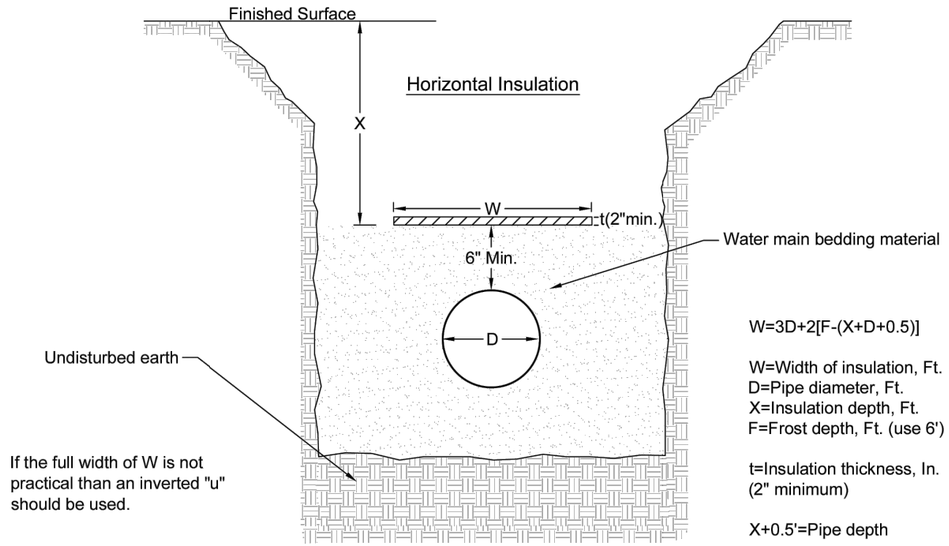
* If >30" use dia./2 on each side of water main pipe.

* Length based on one (1) foot of main.

Revised: December 2020

CITY OF SIOUX FALLS PUBLIC WORKS Providing a Better Quality of Life for You!	Water Main Bedding	Specification Reference No. 900	Plate Number 900.11

Water Main Insulation

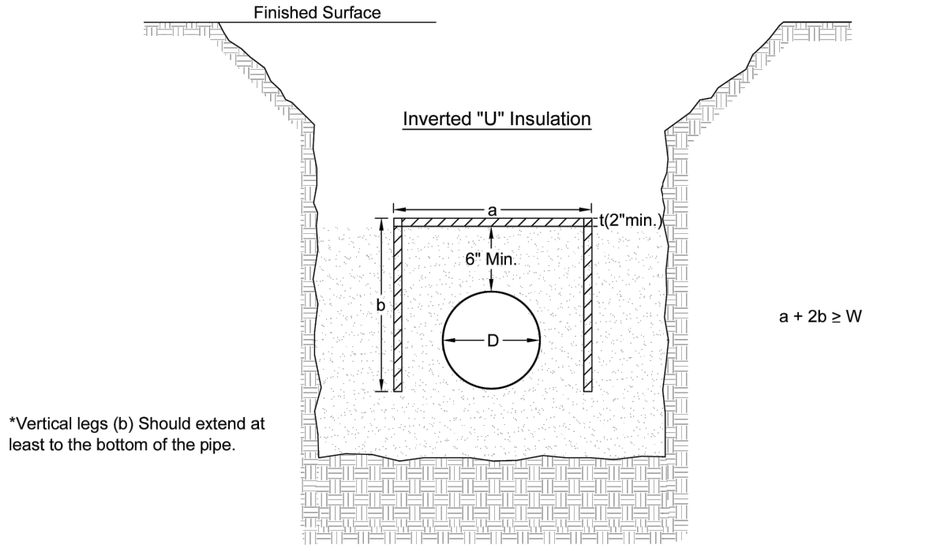


W=3D+2[F-(X+D+0.5)]

W=Width of insulation, Ft.
D=Pipe diameter, Ft.
X=Insulation depth, Ft.
F=Frost depth, Ft. (use 6')

t=Insulation thickness, In. (2" minimum)

X+0.5'=Pipe depth



a + 2b ≥ W

*Vertical legs (b) Should extend at least to the bottom of the pipe.

**This detail is a general guideline. Insulation of water main will be determined on a case by case situation depending on the following factors: depth, pipe diameter, flow, location, and proximity to bedrock. Insulation material and installation methods should follow the water main supplemental specification Sec. 300.

Revised: December 2020

CITY OF SIOUX FALLS PUBLIC WORKS Providing a Better Quality of Life for You!	Water Main Insulation	Specification Reference No. 900	Plate Number 900.13

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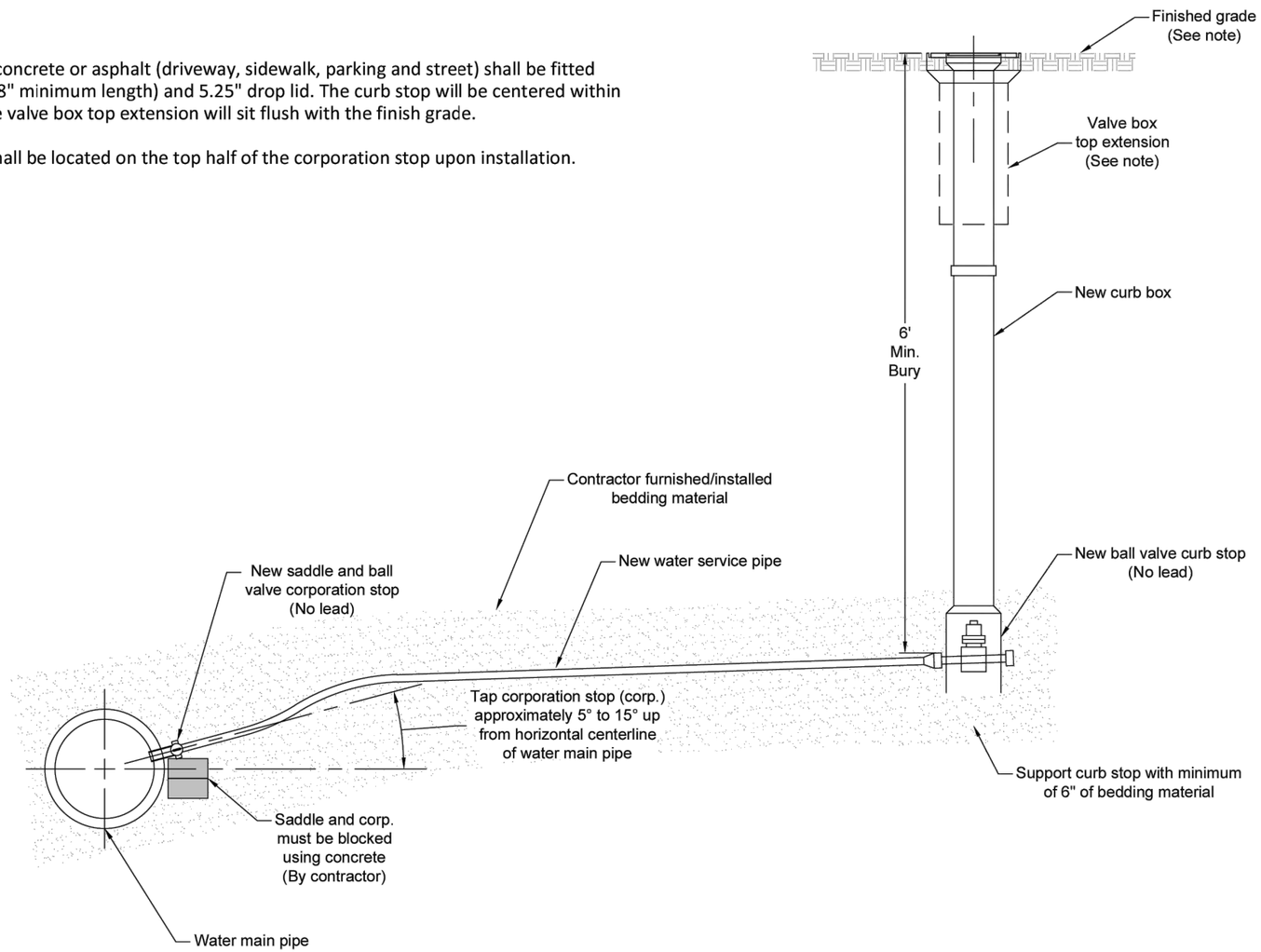
CITY OF SIOUX FALLS	PROJECT	SHEET	TOTAL SHEETS
	PCN X06R / CIP No. 11017	25	27
Plotting Date: 7/22/2025			

General Notes:

1. Curb stop boxes located within concrete or asphalt (driveway, sidewalk, parking and street) shall be fitted with a valve box top extension (8" minimum length) and 5.25" drop lid. The curb stop will be centered within the valve box top extension. The valve box top extension will sit flush with the finish grade.

2. The ball valve operational nut shall be located on the top half of the corporation stop upon installation.



Revised: December 2020

Water Service Installation

CITY OF SIOUX FALLS
PUBLIC WORKS
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Specification Reference No. 900

Plate Number 900.15

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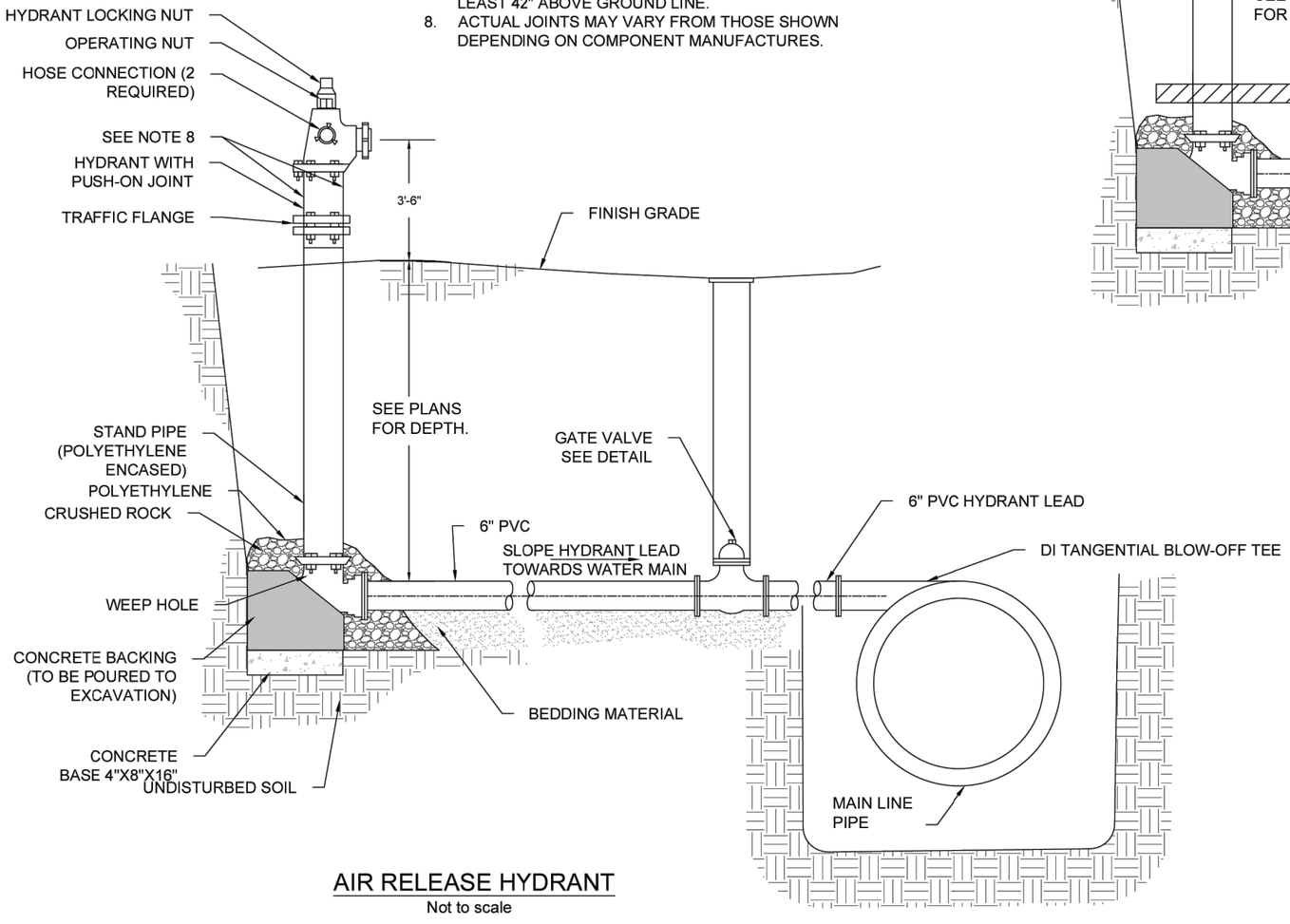
REVISED 6.30.25
FOR BIDDING PURPOSES ONLY

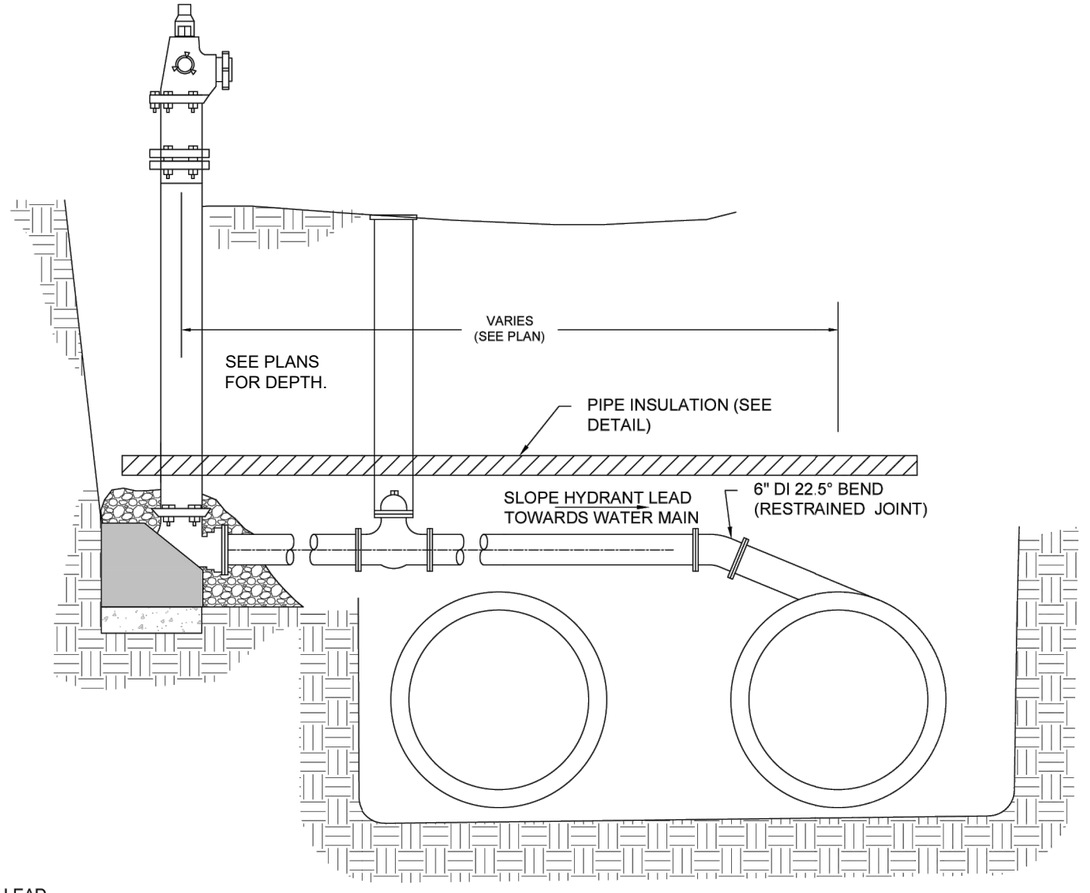
CITY OF SIOUX FALLS	PROJECT	SHEET	TOTAL SHEETS
	PCN X06R / CIP No. 11017	26	27
Plotting Date: 7/23/2025			

AIR RELEASE HYDRANT NOTES:

1. NECESSARY REACTION BACKING IS SHOWN ON THIS DRAWING.
2. 3/4" TO 1-1/2" SIZE 2 ROCK SHALL BE TO A LEVEL 6" ABOVE WASTE OPENING OR GREATER, WITH A MINIMUM 30" WIDE & 5' ALONG HYDRANT LEAD (MIN. QUANTITY 3/4 CU. YD)
3. ALL HYDRANT LEADS SHALL BE 6" PVC.
4. OVERALL LENGTH OF EACH SECTION OF 6" HYDRANT LEAD SHALL NOT BE LESS THAT 12".
5. 6" HYDRANT LEADS ARE TO BE RESTRAINED FROM THE MAIN TO THE HYDRANT
6. WRAP HYDRANTS UP TO GROUND LINE WITH 2 LAYERS OF POLYETHYLENE, TAPE ENDS & SEAMS.
7. TOP OF HYDRANT OPERATING NUT SHALL BE AT LEAST 42" ABOVE GROUND LINE.
8. ACTUAL JOINTS MAY VARY FROM THOSE SHOWN DEPENDING ON COMPONENT MANUFACTURES.



AIR RELEASE HYDRANT
Not to scale



CROSSOVER AIR RELEASE HYDRANT
Not to scale

NOTE:
REFER TO STANDARD AIR RELEASE HYDRANT DETAILS FOR ITEMS NOT UNIQUE TO THIS AIR HYDRANT CONFIGURATION.

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 14872
KELSEY B. WALTZ
6.30.2025
SOUTH DAKOTA

SEH

TANGENTIAL TEE

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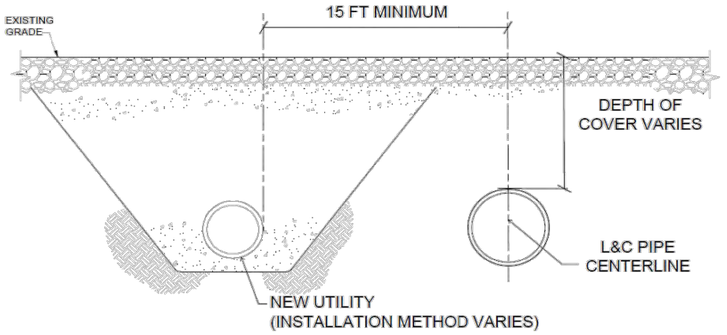
CITY OF SIOUX FALLS	PROJECT	SHEET	TOTAL SHEETS
	PCN X06R / CIP No. 11017	27	27
Plotting Date: 7/22/2025			

FOR BIDDING PURPOSES ONLY REVISED 6.30.25

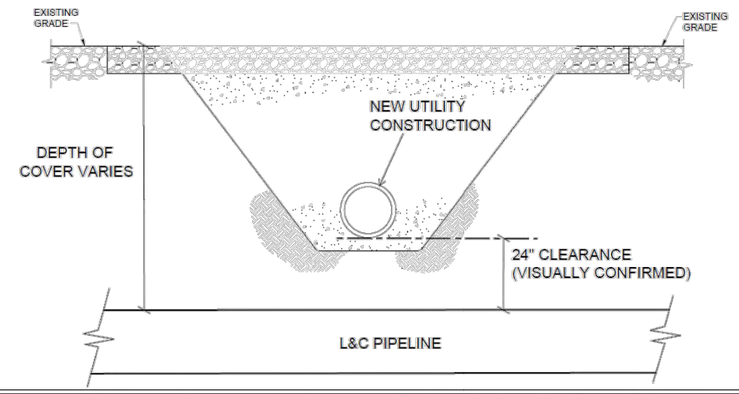
MINIMUM SEPARATION DISTANCE FOR PARALLEL UTILITY INSTALLATION

NO SCALE



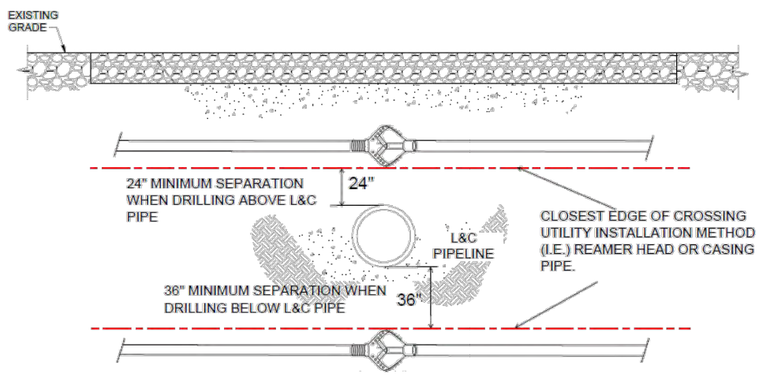
MINIMUM SEPARATION DISTANCE FOR OPEN-CUT UTILITY INSTALLATION OVER L&C PIPELINE

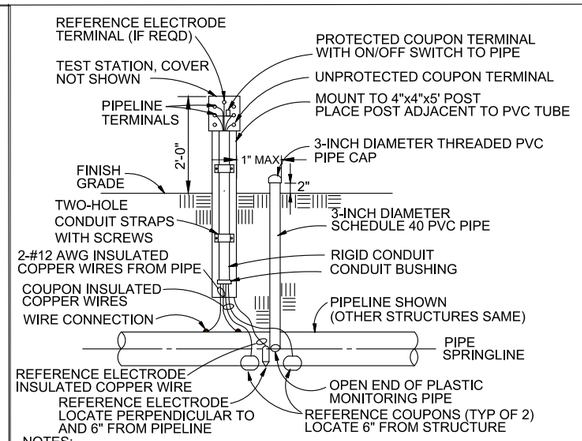
NO SCALE



MINIMUM SEPARATION DISTANCES FOR PERPENDICULAR CROSSING VIA HDD, JACK & AUGER BORE OR SIMILAR METHOD

NO SCALE





NOTES:

1. INSTALL PVC PIPE FOR IR DROP FREE POTENTIAL MEASUREMENTS DIRECTLY NEXT TO TEST STATION POST. TERMINATE BOTTOM OF PVC PIPE AT PIPELINE SPRINGLINE 6-INCHES MAXIMUM FROM PIPE WALL OR STRUCTURE.
2. INSTALL REFERENCE ELECTRODE OR COUPONS (2 EA) ONLY AT TEST STATIONS INDICATED ON TEST STATION LOCATION SCHEDULE OR DRWGS.
3. COLOR CODE WIRES ACCORDING TO WIRE COLOR CODE.
4. AT LOCATIONS IN HIGH TRAFFIC AREAS, LOCATE TEST STATION AT EDGE OF ROAD AND ANGLE
5. PLASTIC REFERENCE PIPE WITH WIRES BACK TO PIPELINE. MOUNT TEST STATION HEAD FLUSH WITH OR 1-INCH BELOW TOP OF POST.
6. INSTALL PIPE MARKING SIGNS NEXT TO TEST STATIONS

TYPE P-IR POST MOUNTED TEST STATION

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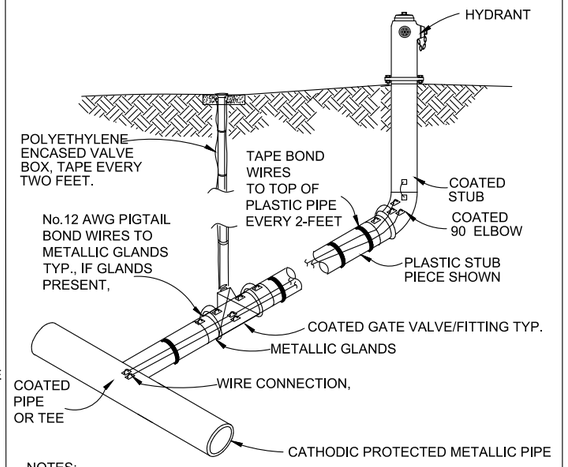

NOTES:

1. INSTALL TWO No. 12 AWG INSULATED STRANDED JOINT BOND WIRES FROM CATHODIC PROTECTED PIPE TO EACH METALLIC FITTING, TYP.

BOND WIRE INSTALLATION AT HYDRANT ASSEMBLIES WITH PLASTIC PIPE STUBS

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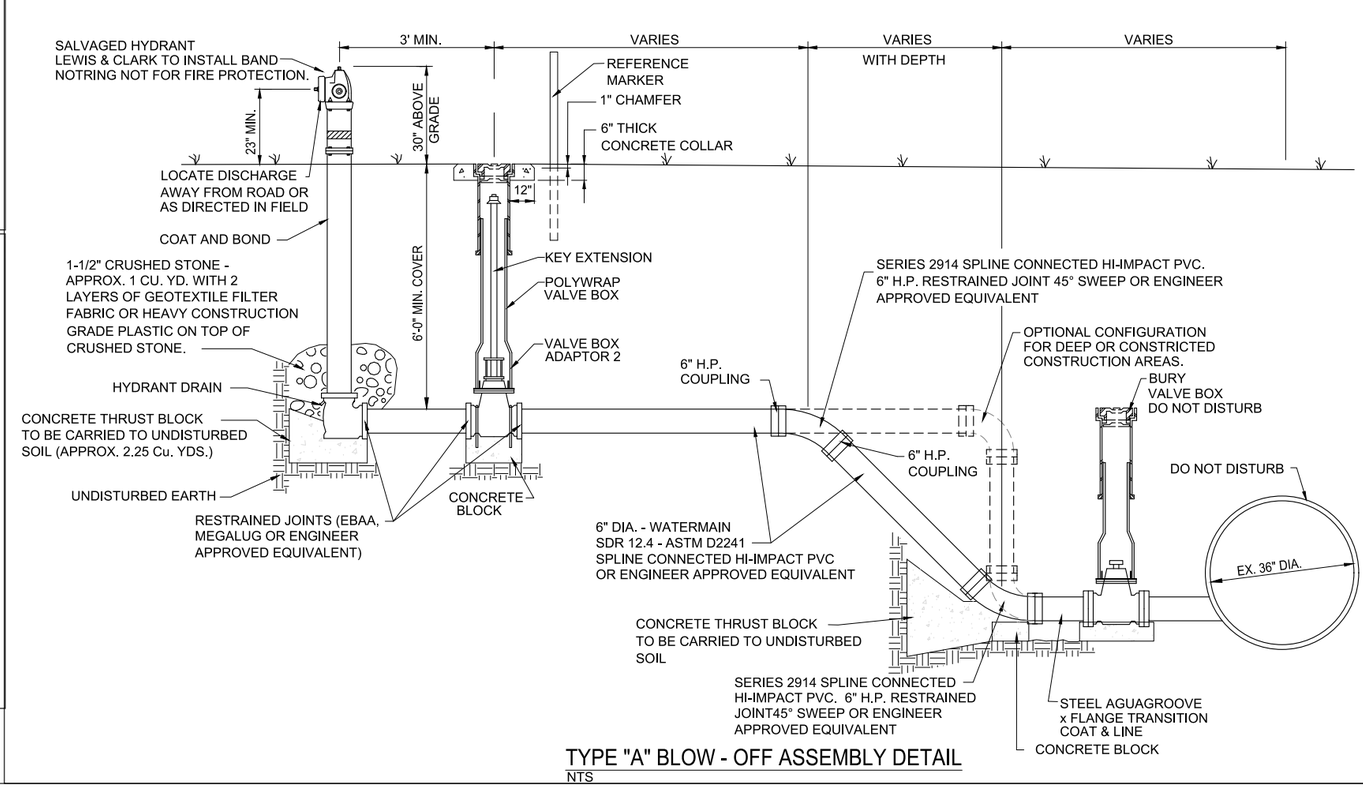

TYPE "A" BLOW - OFF ASSEMBLY DETAIL

NTS

LEWIS & CLARK

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