

FOR BIDDING PURPOSES ONLY

# CITY OF YANKTON, SOUTH DAKOTA PLANS FOR PROPOSED PROJECT ES2014-003 SD HIGHWAY 50 YANKTON COUNTY

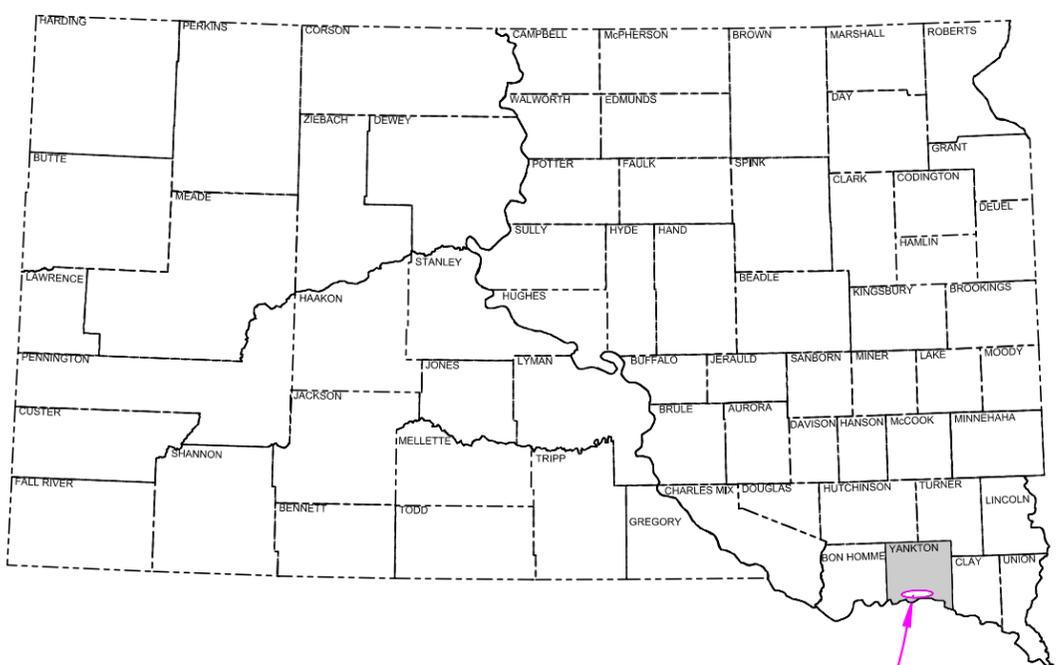
Sanitary Sewer Main, Sanitary Sewer Services,  
Water Main, Water Services  
PCN X03G

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	ES 2014-003 PCN X03G	1	37

Plotting Date: 7/03/2015

**INDEX OF SHEETS**

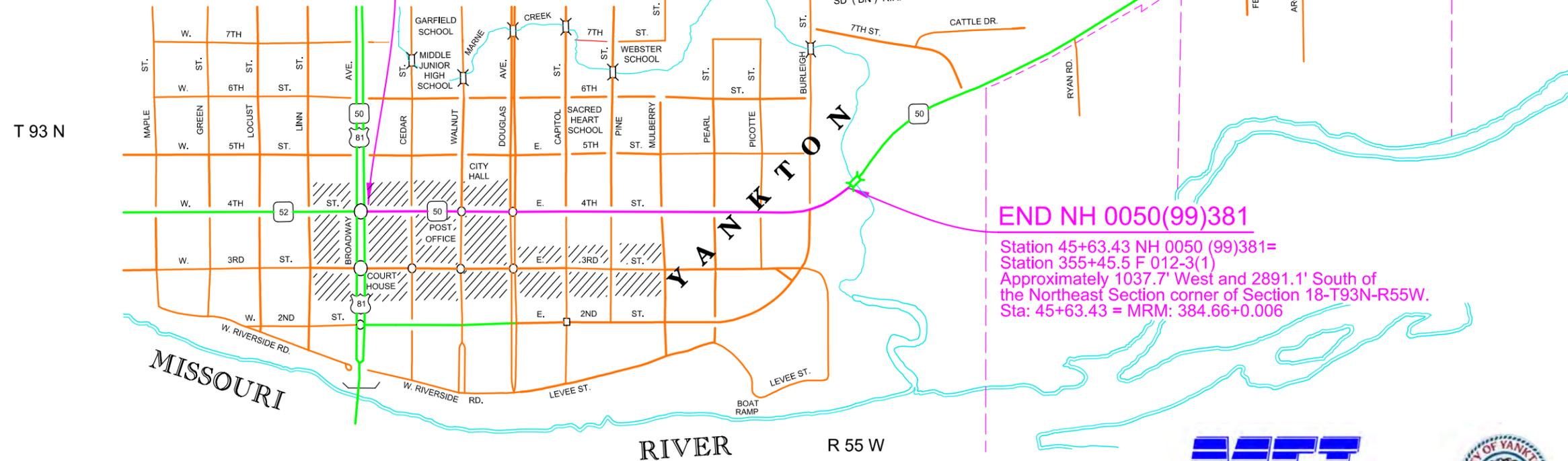
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PROJECT R 55 W

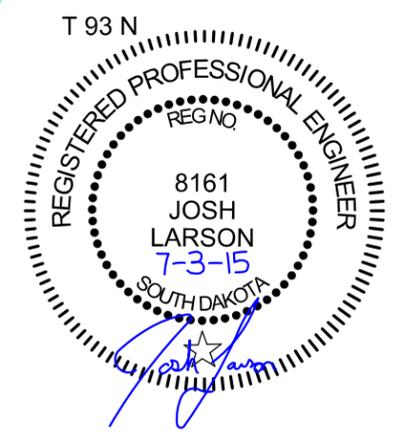
**BEGIN NH 0050(99)381**

Station 4+00.00 NH 0050 (99)381 =  
Station 313+80.2 F 012-3(1)  
Approximately 302.2' East and 507.9' South of  
the West 1/4 corner of Section 18-T93N-R55W.  
Sta: 4+00 = MRM: 383.85+0.022



**END NH 0050(99)381**

Station 45+63.43 NH 0050 (99)381=  
Station 355+45.5 F 012-3(1)  
Approximately 1037.7' West and 2891.1' South of  
the Northeast Section corner of Section 18-T93N-R55W.  
Sta: 45+63.43 = MRM: 384.66+0.006



Note:  
Drawings indicate general utility locations only. Neither the correctness or completeness of locations is guaranteed.

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

GROSS LENGTH	4163.43 FEET	0.789 MILES
LENGTH OF EXCEPTIONS	0.00 FEET	0.000 MILES
NET LENGTH	4163.43 FEET	0.789 MILES



Plans Prepared by:  
**McLaury Engineering, Inc.**  
Sioux Falls, South Dakota



City of Yankton  
Yankton, South Dakota

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**ESTIMATE OF QUANTITIES****GENERAL NOTES****FOR BIDDING PURPOSES ONLY**

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	ES 2014-003 PCN X03G	2	37

Bid Item Number	Item	Quantity	Unit
009E0010	Mobilization	Lump Sum	LS
009E3260	Miscellaneous Staking	Lump Sum	LS
110E0460	Remove Manhole	9	Each
110E0520	Remove Sewer Pipe	813	Ft
110E1910	Remove Fire Hydrant	8	Each
110E1965	Remove Gate Valve	15	Each
110E1970	Remove Water Main	1,051	Ft
451E0301	Pipe Encasement	16	Each
451E0606	6" PVC Water Main	960	Ft
451E0616	16" PVC Water Main	19	Ft
451E1008	8" PVC Sewer Pipe	724	Ft
451E1015	15" PVC Sewer Pipe	89	Ft
451E1275	1" Water Service	7	Each
451E2207	6"x6" Pipe Tee	5	Each
451E2802	1" Corporation Stop with Tapping Saddle	7	Each
451E2902	1" Curb Stop with Box	7	Each
451E3006	6" Pipe Bend	29	Each
451E3016	16" Pipe Bend	4	Each
451E3106	6" Pipe Cap	15	Each
451E4206	6" Gate Valve with Box	8	Each
451E4580	Standard Fire Hydrant	6	Each
451E4926	Water Main Bedding Material	979	Ft
451E4945	8" Sewer Pipe Bedding Material	724	Ft
451E4948	15" Sewer Pipe Bedding Material	89	Ft
451E5206	Adjust 6" Water Main	287.0	Ft
451E5216	Adjust 16" Water Main	19.0	Ft
451E6055	Temporary Water Main Connection	2	Each
451E6099	Abandon Water Service	1	Each
451E6100	Reconnect Water Service	7	Each
451E6105	Connect To Existing Water Main	17	Each
451E7016	Connect to Existing Sewer Main	17	Each
451E7052	Temporary Sanitary Sewer Main Connection	9	Each
671E1048	48" Manhole	8	Each
671E2000	External Manhole Seal	8	Each
671E5502	2" Adjusting Ring for Manhole	28	Each
671E6009	Type A9 Manhole Frame and Lid	8	Each
671E7020	Connect Into Existing Manhole	1	Each

**PROJECT SCOPE**

This project, along with the SDDOT project PCN 6926 consists of complete reconstruction of SD Hwy 50 (4<sup>th</sup> Street) from Broadway Street to Burleigh Street. Work included in the City Portion involves installation of new water main and sanitary sewer main, as well as miscellaneous utility construction, within the SDDOT project construction limits.

**SPECIFICATIONS TO BE USED**

City of Yankton Standard Specifications, Current Edition and the South Dakota Standard Specifications for Roads and Bridges 2015 Edition and Required Provisions, Supplemental Specifications, and Special Provisions as included in the Proposal.

**ORDER OF PRECEDENCE**

If conflicts arise, the order of precedence of the contract documents shall be as follows: Plans over Special Provisions over City of Yankton Standard Specifications over South Dakota Department of Transportation Supplemental Specifications and Errata over South Dakota Department of Transportation Standard Specifications for Roads and Bridges.

**SEQUENCE OF OPERATIONS**

Sequencing for the City Utility Portion of this project shall generally follow the construction sequencing for the SDDOT Portion of the project. This project will be constructed one half at a time, as shown in the phasing section of these plans.

Temporary connections will be required to be made on all live sewer mains and services so that flow can be maintained while construction is completed on the first half, traffic is switched over, and utility construction is finished on the second half.

Temporary connections will not be required between phases for water main except at Douglas Street and Capital Street. On pipes that are not temporarily connected, the pipes will be sealed with a pipe cap until the permanent connection is made.

**WASTE DISPOSAL SITE**

The Contractor shall furnish a site(s) for the disposal of construction and/or demolition debris generated by this project.

**Action Taken/Required:**

Construction and/or demolition debris may not be disposed of within the State ROW.

The waste disposal site(s) shall be managed and reclaimed in accordance with the following from the General Permit for Highway, Road, and Railway Construction/Demolition Debris Disposal Under the South Dakota Waste Management Program issued by the Department of Environment and Natural Resources.

The waste disposal site(s) shall not be located in a wetland, within 200 feet of surface water, or in an area that adversely affects wildlife, recreation, aesthetic value of an area, or any threatened or endangered species, as approved by the Project Engineer.

If the waste disposal site(s) is located such that it is within view of any ROW, the following additional requirements shall apply:

- Construction and/or demolition debris consisting of concrete, asphalt concrete, or other similar materials shall be buried in a trench completely separate from wood debris. The final cover over the construction and/or demolition debris shall consist of a minimum of 1 foot of soil capable of supporting vegetation. Waste disposal sites provided outside of the State ROW shall be seeded in accordance with Natural Resources Conservation Service recommendations. The seeding recommendations may be obtained through the appropriate County NRCS Office. The Contractor shall control the access to waste disposal sites not within the State ROW through the use of fences, gates, and placement of a sign or signs at the entrance to the site stating "No Dumping Allowed".
- Concrete and asphalt concrete debris may be stockpiled within view of the ROW for a period of time not to exceed the duration of the project. Prior to project completion, the waste shall be removed from view of the ROW or buried and the waste disposal site reclaimed as noted above.

The above requirements will not apply to waste disposal sites that are covered by an individual solid waste permit as specified in SDCL 34A-6-58, SDCL 34A-6-1.13, and ARSD 74:27:10:06.

Failure to comply with the requirements stated above may result in civil penalties in accordance with South Dakota Solid Waste Law, SDCL 34A-6-1.31.

All costs associated with furnishing waste disposal site(s), disposing of waste, maintaining control of access (fence, gates, and signs), and reclamation of the waste disposal site(s) shall be incidental to the various contract items.

**STAKING**

All staking that is required for installation of water main, sanitary sewer piping and appurtenances shall be paid for at the contract unit price per lump sum for "Miscellaneous Staking".

**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.

**UTILITIES**

Location and protection of all underground utilities is the Contractors responsibility. The Contractor will be required to coordinate work with the utility companies. Existing utilities and service lines that coincide with proposed underground main locations are to be located in advance by the contractor such that proposed underground mains can be adjusted to avoid conflict.

Utility locations are coordinated by calling: 1-800-781-7474 (One Call)

**OCCUPYING STATE ROW**

Contractor shall comply with Traffic Control Standards under SDDOT Standard Specifications for Roads and Bridges, and as per the Manual on Uniform Traffic Control Devices.

**INCIDENTAL WORK**

All salvageable materials shall be taken out intact and stockpiled within the right-of-way to the satisfaction of the Engineer. The Contractor shall perform salvage operations in a manner that will prevent damage to the salvageable materials.

Salvable materials will be picked up by the City.

All concrete removed from the existing structures and other disposable material shall be disposed of in accordance with the notes regarding Waste Disposal Site.

**DEWATERING AND EROSION CONTROL**

Pumping required for the removal of surface water from the work area and/or depressions will be considered incidental to other pay items and not paid for separately.

Trench dewatering, including furnishing, installing, maintaining of the trench dewatering and all appurtenances necessary for the proper operation of trench dewatering, shall be incidental to the pipe and manhole installation

The Contractor shall be responsible for obtaining the required Erosion Control Permits from the South Dakota Department of Environment and Natural Resources. The Storm Water Pollution Prevention Plan is located in Section D of the SDDOT plans

The Contractor is to keep the project site properly maintained and graded to drain storm water. No standing water is permitted on site. All regulations pertaining to Storm Water Pollution Prevention will be enforced. Direct discharge of storm water into the storm sewer system is not acceptable.

**TABLE OF REMOVE MANHOLE**

Station	Quantity (Each)
4+19.11 - 7.0' R	1
8+41.00 - 0.2' L	1
12+62.03 - 10.9' L	1
17+05.73 - 11.2' L	1
21+25.45 - 7.6' L	1
25+48.85 - 8.9' L	1
29+71.34 - 7.5' L	1
33+74.79 - 7.4' L	1
37+76.24 - 14.9' L	1
Total:	9

**REMOVE SEWER PIPE**

Removal of existing sewer main and existing force main shall be paid for at the contract unit price per foot for "Remove Sewer Pipe". Payment for removal of sewer pipe shall be full compensation for excavation, removal, and disposal of the pipe.

**TABLE OF REMOVE SEWER PIPE**

Station to	Station	Quantity (Ft)
4+17.81 - 43.1' R	4+19.35 - 46.1' L	90
8+40.82 - 44.2' L	8+40.99 - 44.2' R	89
12+61.31 - 44.2' L	12+62.54 - 44.7' R	89
17+05.62 - 44.2' L	17+05.89 - 44.2' R	89
21+25.40 - 44.5' L	21+25.49 - 44.2' R	89
25+48.60 - 44.2' L	25+49.01 - 44.2' R	89
29+70.85 - 44.2' L	29+71.33 - 44.2' R	89
33+74.88 - 44.2' L	33+76.00 - 44.2' R	89
37+76.57 - 47.1' L	37+76.51 - 52.0' R	100
Total:		813

**TABLE OF REMOVE FIRE HYDRANT**

Station	Quantity (Each)
5+94.26 - 47.2' L	1
10+86.82 - 43.3' L	1
14+38.43 - 42.9' L	1
19+50.11 - 39.2' L	1
23+64.87 - 55.0' L	1
27+33.47 - 45.6' L	1
31+94.00 - 51.2' L	1
35+99.31 - 49.6' L	1
Total:	8

**FOR BIDDING PURPOSES ONLY**  
**REMOVE GATE VALVE**

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The bid item of "Remove Gate Valve" shall include full compensation for the removal and disposal of the gate valve, valve box, and appurtenances.

**TABLE OF REMOVE GATE VALVE**

Station	Quantity (Each)
6+49.94 - 53.0' L	1
6+50.29 - 34.9' R	1
10+71.91 - 45.6' L	1
10+72.04 - 41.1' R	1
14+83.28 - 41.9' R	1
19+34.57 - 43.2' L	1
19+35.11 - 28.2' R	1
23+59.43 - 51.9' R	1
23+62.43 - 55.1' L	1
27+48.94 - 46.7' L	1
27+51.59 - 49.2' L	1
31+81.17 - 51.9' L	1
35+60.94 - 40.0' R	1
35+63.35 - 52.8' L	1
35+65.24 - 50.8' L	1
Total:	15



**REMOVE WATER MAIN**

The removal of water main shall be paid for at the contract unit price per foot of water main removed. Payment for removal of water main pipe shall be full compensation for excavation, removal, and disposal of the pipe.

**TABLE OF REMOVE WATER MAIN**

Station to	Station	Quantity (Ft)
5+94.26 - 47.2' L	6+49.72 - 47.9' L	55
6+49.72 - 80.4' L	6+49.60 - 59.6' R	140
10+71.94 - 44.1' L	10+86.82 - 43.3' L	15
10+71.94 - 53.8' L	10+71.69 - 71.6' R	126
14+38.43 - 42.9' L	14+83.12 - 42.4' L	45
14+82.65 - 27.1' L	14+83.00 - 41.8' R	69
19+34.52 - 51.9' L	19+35.31 - 41.0' R	93
19+34.57 - 39.4' L	19+50.11 - 39.2' L	16
23+57.30 - 75.0' L	23+59.43 - 52.4' R	128
23+57.48 - 55.2' L	23+64.87 - 55.0' L	8
27+33.47 - 45.6' L	27+51.59 - 49.2' L	19
27+51.64 - 66.3' L	27+66.20 - 63.5' R	143
31+79.98 - 19.9' R	31+80.71 - 38.3' R	19
31+81.17 - 51.9' L	31+94.00 - 51.2' L	13
35+60.99 - 51.8' R	35+63.17 - 72.6' L	126
35+63.51 - 50.8' L	35+99.30 - 49.6' L	36
Total:		1051

# SANITARY SEWER

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	ES 2014-003 PCN X03G	4	37

**TABLE OF 8" PVC SEWER MAIN**

Station to	Station	Quantity (Ft)
4+17.81 - 43.11'R	4+19.35 - 46.06'L	90
8+40.82 - 44.17'L	8+40.99 - 44.17'R	89
12+61.31 - 44.17'L	12+62.54 - 44.67'R	89
21+25.40 - 44.51'L	21+25.49 - 44.17'R	89
25+48.60 - 44.17'L	25+49.01 - 44.17'R	89
29+70.85 - 44.17'L	29+71.33 - 44.17'R	89
33+74.88 - 44.17'L	33+76.00 - 44.17'R	89
37+76.57 - 47.05'L	37+76.51 - 52.04'R	100
Total:		724

**TABLE OF 15" PVC SEWER MAIN**

Station to	Station	Quantity (Ft)
17+05.62 - 44.17'L	17+05.89 - 44.17'R	89
Total:		89

**CONNECT TO EXISTING SEWER MAIN**

All connections to the existing sanitary sewer main and connections to the existing sanitary force main shall be paid for as "Connect to Existing Sewer Main".

Pipe couplings shall be used where it is necessary to connect two spigot ends of the same diameter pipe together and where bell and spigot connections are not possible. Pipe couplings shall be "Power Seal Model 3541" as manufactured by Power Seal Pipeline Products Corporation, Adjustable Repair Coupling with 300 series stainless steel shear ring as manufactured by Mission Rubber Company, Inc., "Strong Back RC Series Repair Coupling," as manufactured by Fernco, Inc., or approved equal shall be used on all pipe.

Where connections are made to existing force main, connections shall be made in accordance with standards for the construction of water main. All connections shall be reinforced with retainer glands. The bid item shall include all necessary bends, blocking, retainer glands and other appurtenances necessary to make an approved connection to the sanitary force main.

**TABLE OF CONNECT TO EXISTING SEWER MAIN**

Station	Quantity (Each)	
4+17.81 - 43.11' R	1	
4+19.35 - 46.06' L	1	
8+40.82 - 44.17' L	1	
8+40.99 - 44.17' R	1	
12+61.31 - 44.17' L	1	
12+62.54 - 44.67' R	1	
17+05.62 - 44.17' L	1	
17+05.89 - 44.17' R	1	
21+25.40 - 44.51' L	1	
21+25.49 - 44.17' R	1	
25+48.60 - 44.17' L	1	
25+49.01 - 44.17' R	1	
29+70.85 - 44.17' L	1	
29+71.33 - 44.17' R	1	
33+74.88 - 44.17' L	1	
33+76.00 - 44.17' R	1	
37+76.57 - 47.05' L	1	
Total:		17

**TABLE OF TEMPORARY SANITARY SEWER MAIN CONNECTION**

Station	Quantity (Each)	
4+18.46 - 5.26' R	1	
8+40.91 - 3.70' R	1	
12+61.97 - 3.16' R	1	
17+05.76 - 2.79' R	1	
21+25.45 - 2.92' R	1	
25+48.82 - 2.93' R	1	
29+71.10 - 2.96' R	1	
33+75.48 - 2.78' R	1	
37+76.54 - 5.80' R	1	
Total:		9

**MANHOLE**

All costs associated to furnish and install manholes, manhole boots and manhole inverts according to the manhole details shall be incidental to the contract unit price per each for the corresponding Manhole bid item.

All costs to adjust final manhole elevations will be incidental to the specific manhole constructed. Final Adjustments must be within 1/4" of the finished surface.

**TABLE OF INSTALL 48" MANHOLE**

Station	MH #	Quantity (Each)
4+17.81 - 43.11' R	MH #1	1
8+40.99 - 44.17' R	MH #2	1
12+62.54 - 44.67' R	MH #3	1
17+05.89 - 44.17' R	MH #4	1
21+25.49 - 44.17' R	MH #5	1
25+49.01 - 44.17' R	MH #6	1
29+71.33 - 44.17' R	MH #7	1
33+76.00 - 44.17' R	MH #8	1
Total:		8

**EXTERNAL MANHOLE SEAL**

Manhole external frame seals shall be installed on all new manholes. The furnishing and installation of the manhole external frame seals shall be paid for at the contract unit price per each for "External Manhole Seal". Payment for external manhole seal will be full compensation for furnishing and installing of the complete manhole frame seal and all appurtenances necessary for the proper installation of the manhole frame seal for the manhole. Payment will be made for a complete frame seal system and will not be made for individual extensions. Manhole external joint seals shall be installed on all joints of all new manholes. Manhole external joint seals shall be incidental to the corresponding manhole. No additional payment will be made for furnishing and installing manhole external joint seals.

**TABLE OF EXTERNAL MANHOLE SEAL**

Station	MH #	Quantity (Each)
4+17.81 - 43.11' R	MH #1	1
8+40.99 - 44.17' R	MH #2	1
12+62.54 - 44.67' R	MH #3	1
17+05.89 - 44.17' R	MH #4	1
21+25.49 - 44.17' R	MH #5	1
25+49.01 - 44.17' R	MH #6	1
29+71.33 - 44.17' R	MH #7	1
33+76.00 - 44.17' R	MH #8	1
Total:		8



**FOR BIDDING PURPOSES ONLY**

**TABLE OF 2" ADJUSTING RING FOR MANHOLE**

Station	MH #	Quantity (Each)
4+17.81 - 43.11' R	MH #1	3
8+40.99 - 44.17' R	MH #2	3
12+62.54 - 44.67' R	MH #3	5
17+05.89 - 44.17' R	MH #4	5
21+25.49 - 44.17' R	MH #5	3
25+49.01 - 44.17' R	MH #6	3
29+71.33 - 44.17' R	MH #7	3
33+76.00 - 44.17' R	MH #8	3
Total:		28

**TABLE OF TYPE A9 MANHOLE FRAME AND LID**

Station	MH #	Quantity (Each)
4+17.81 - 43.11' R	MH #1	1
8+40.99 - 44.17' R	MH #2	1
12+62.54 - 44.67' R	MH #3	1
17+05.89 - 44.17' R	MH #4	1
21+25.49 - 44.17' R	MH #5	1
25+49.01 - 44.17' R	MH #6	1
29+71.33 - 44.17' R	MH #7	1
33+76.00 - 44.17' R	MH #8	1
Total:		8

**CONNECT INTO EXISTING MANHOLE**

Wherever new sewers connect with existing sewer manholes or structures, the Contractor shall cut the necessary openings into the existing manholes and make the connections thereto in a neat and workmanlike manner. The connections shall be made so as to make the joints around the entering sewers watertight and an approved smooth channeled flow line shall be constructed. All existing cast-in-place, precast, and block-type manholes shall be core drilled, and manhole boots shall be installed for the pipe connection.

Where existing manholes are constructed of brick, cobblestone, or other materials determined by the Engineer that cannot be core drilled, pipes shall be grouted into the manhole wall with nonshrink grout and a water seal. The water seal shall be placed continuously around the pipe to form a seal. The water seal shall be a butyl rubber rope type material.

All manhole bench and inverts shall be reconstructed as a part of the connection to the existing manhole. The manhole bench and invert reconstruct shall be incidental to the "Connect Into Existing Manhole" bid item.

**TABLE OF CONNECT INTO EXISTING MANHOLE**

Station	Quantity (Each)
37+76.51 - 52.04' R	1
Total:	1

**WATER**

**WATER MAIN GENERAL**

The contractor shall provide new water main with a minimum of 6' of cover. The water main will be AWWA C-900. Adjust the depth of the new main to match existing main where connections to existing mains are shown on plans. Where the new main is to be connected to existing mains, the connection, sawing, pumping of water, labor and other items necessary to complete the tie are considered to be part of the bid item "Connect to Existing Water Main". Existing copper services will be connected to the new water main. Services will be replaced if line is galvanized, lead or smaller than 3/4 inch copper. Replace these service lines to ROW line behind new curb and gutter or as directed by engineer with 1 inch copper and install a new curb stop and box. Services may be "hole hogged" with an underground piercing tool at no additional expense to the City of Yankton.

Contractor shall backfill all open trenches to the end of the pipe every night and appropriately protect the open hole with fencing. The Contractor shall have \$200 per day deducted from the contract for each day that this is not done.

**GENERAL ITEMS**

All existing pipe and material removed by the contractor shall be appropriately disposed of by the contractor. All open ends of abandoned in place piping shall be plugged with concrete unless otherwise noted in plans. All abandoned valve boxes shall be removed to at least 2 feet below the ground surface and filled with granular material.

Salvageable material shall become the property of the City of Yankton, as directed by engineer. Removal of water main, valves, and fittings that are not specifically designated for removal elsewhere in these plans, but are necessary for the construction of the new items, shall be incidental to other project costs.

**WATERING**

Water for compaction is incidental to other pay items. Water from City fire hydrants is to be metered and paid for by Contractor.

**STRUCTURE REMOVAL**

The removal of existing pipe and manholes is to include the plugging of existing pipe if necessary with concrete and the removal of the structure. Castings and manhole covers removed are to be delivered to the City street shop.



**DISINFECTION, TESTING, AND OPERATION OF NEW MAIN**

New water main shall be disinfected, have two passing bacteriological tests, at least 24 hours apart, and be pressure tested before the water main is put into service. The City will take the test sample and the contractor shall furnish a service line or other suitable location on the new pipe at which a sample can be collected. The contractor shall furnish the equipment necessary for the pressure test and shall conduct the test in the presence of someone from the City Engineering Department staff. New mains shall be installed and disinfected before any of the service lines are reconnected from the old main to the new main. New mains will not be put into operation without City Engineering Department Staff approval.

**POLYETHYLENE ENCASEMENT**

All valves, fittings, and other ductile iron appurtenances and pipe are to be wrapped with 8 mil. thick polyethylene in accordance with AWWA C-105. This work is incidental to other pay items.

**SLEEVES AND RETAINER GLANDS**

The contractor shall furnish and install all clamps, ready rods, blocking and cradling necessary for the project as an incidental project cost.

Retainer glands are to be installed in addition to blocking at all fittings (megalug series 2000pv). All retainer glands shall be incidental to their corresponding fittings. All sleeves shall be incidental to the corresponding "Connect to Existing" or "Temporary Connection" bid item.

**VALVE BOX CENTERING ADAPTER**

All valve boxes shall be equipped with a rubber boot/sleeve that covers and firmly holds the bottom of the valve box over the valve nut. (valve box adapter ii)

**TRACER WIRE SYSTEM**

The tracer wire system shall be installed with PVC water mains to the satisfaction of the engineer.

Tracer wire shall be no. 12 solid single strand Type TW or THHn, or approved equal.

The conductor shall be solid or stranded copper per ASTM B-1, B-3, or B-8. The ground rod shall be a 3/8-inch diameter, 60-inch long steel rod uniformly coated with metallicly bonded electrolytic copper. Blackburn catalog no. 3755, or equal. The ground rod at the fire hydrant shall be of the same material except that the ground rod shall be 30 inches long. Ground rod clamps shall be high strength, corrosion resistant copper alloy. Blackburn catalog no. G3, or equal.

Splice kits shall be Scotchlok DBY-Y connectors or equal.

The cost of the tracer wire system is considered to be a part of the cost of the water main installation.

**TRACER WIRE INSTALLATION**

Tracer wire shall be installed with PVC water mains. The wire shall be installed along the lower quadrant of the pipe, but the pipe shall not be laid directly on the wire. Ground rods shall be installed adjacent to connections to existing piping and in the locations specified on the plans. The tracer wire shall be brought to each fire hydrant and connected to a 30" ground rod that extends up to the bolted flange just above the ground surface or a minimum distance of 3" above the ground surface. The ground rod shall be taped to the fire hydrant barrel in at least four locations below the ground surface. The tracer wire shall be spliced only if approved by the engineer and all underground splices shall be inspected by the engineer prior to backfilling. The tracer wire system is considered to be incidental to the contract unit price per foot for water mains.

The contractor shall be responsible for testing the tracer wire system for conductivity. Testing for conductivity shall be completed prior to finish surfacing activities. If the tracer wire does not function as intended, the contractor shall repair the system to the satisfaction of the engineer and the City will charge \$50 per hour to retest the system with a minimum charge of \$50.

**PIPE ENCASEMENT**

Where water lines cross under or where the bottom of the water line is within 18 inches of the top of a gravity sewer main, storm sewer or a sewer service line, either the water main or the sewer main shall be encased in a watertight carrier pipe that extends 10 feet on both sides of the crossing, measured perpendicular to the water main. The carrier pipe shall be PVC, ABS, or HDPE, and the ends sealed with a rubber gasket or boot. All work and materials necessary to complete the pipe encasement, including watertight carrier pipe with sealed ends, excavation, backfill, materials, labor and equipment, shall be incidental to the contract unit price per each for "Pipe Encasement".

**TABLE OF PIPE ENCASEMENT**

Station	Quantity (Each)
6+42.76 - 63.49' L	1
6+47.94 - 29.17' R	1
6+48.90 - 44.81' R	1
10+66.62 - 29.17' R	1
10+66.62 - 59.02' R	1
14+82.93 - 29.16' R	1
23+52.32 - 63.01' L	1
23+57.54 - 28.74' R	1
27+51.60 - 50.41' L	1
27+62.82 - 16.91' R	1
27+66.64 - 29.18' R	1
31+80.35 - 29.17' R	1
35+62.51 - 29.09' R	1
35+66.46 - 30.36' L	1
35+67.08 - 58.95' L	1
35+74.64 - 54.33' L	1
<b>Total:</b>	<b>16</b>

**TABLE OF 6" PVC WATER MAIN**

Station to	Station	Quantity (Ft)
6+49.72 - 80.37' L	6+49.80 - 74.89' L	6
6+05.09 - 75.05' L	6+49.80 - 74.89' L	46
6+42.77 - 65.51' L	6+49.80 - 74.89' L	13
6+42.77 - 65.51' L	6+49.61 - 56.39' R	126
10+71.69 - 71.58' R	10+71.92 - 53.80' L	128
10+71.92 - 53.80' L	10+87.83 - 53.85' L	16
14+82.65 - 27.13' L	14+83.00 - 41.82' R	69
19+34.52 - 51.87' L	19+35.31 - 41.00' R	93
23+52.43 - 65.92' L	23+57.30 - 75.00' L	12
23+52.43 - 65.92' L	23+52.56 - 58.00' L	8
23+52.56 - 58.00' L	23+67.48 - 58.00' L	15
23+52.56 - 58.00' L	23+59.43 - 52.40' L	111
27+33.47 - 45.57' L	27+51.58 - 45.34' L	19
27+51.58 - 45.34' L	27+51.64 - 66.27' L	21
27+51.58 - 45.34' L	27+66.74 - 20.94' R	73
27+66.45 - 43.53' R	27+66.74 - 20.94' R	23
31+77.87 - 68.00' L	31+98.33 - 68.00' L	21
35+63.17 - 72.58' L	35+67.25 - 54.07' L	21
35+67.25 - 54.07' L	35+60.99 - 51.80' R	107
35+67.25 - 54.07' L	35+98.92 - 55.23' L	32
<b>Total:</b>		<b>960</b>

**TABLE OF 16" PVC WATER MAIN**

Station to	Station	Quantity (Ft)
31+79.98 - 19.92' R	31+80.71 - 38.26' R	19
<b>Total:</b>		<b>19</b>

**WATER SERVICE**

Water Services will be paid for at the contract unit price per each for "1" Water Service". The lengths are shown in the table for informational purposes only.

**TABLE OF 1" WATER SERVICE**

Station to	Station	Quantity (Each)	Quantity (Ft)
19+34.52 - 51.87' L	19+64.91 - 51.89' L	1	31
23+57.30 - 75.00' L	23+87.10 - 75.40' L	1	30
23+57.32 - 73.00' L	23+87.13 - 73.40' L	1	30
31+78.54 - 59.88' L	32+14.59 - 52.21' L	1	37
34+14.58 - 48.32' L	35+67.25 - 54.07' L	1	161
35+35.87 - 52.28' R	35+60.99 - 51.80' R	1	25
35+63.11 - 68.33' L	36+14.41 - 69.82' L	1	52
<b>Total:</b>		<b>7</b>	<b>366</b>

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	ES 2014-003 PCN X03G	6	37

**TABLE OF 6x6 PIPE TEE**

Station	Quantity (Each)
6+49.80 - 74.89' L	1
23+52.56 - 58.00' L	1
27+51.58 - 45.34' L	1
31+77.87 - 68.00' L	1
35+67.25 - 54.07' L	1
<b>Total:</b>	<b>5</b>

**TABLE OF 1" CORPORATION STOP WITH TAPPING SADDLE**

Station	Quantity (Each)
19+34.52 - 51.87' L	1
23+57.30 - 75.00' L	1
23+57.32 - 73.00' L	1
31+78.54 - 59.88' L	1
35+67.25 - 54.07' L	1
35+60.99 - 51.80' R	1
35+63.11 - 68.33' L	1
<b>Total:</b>	<b>7</b>

**TABLE OF 1" CURB STOP WITH BOX**

Station	Quantity (Each)
19+64.91 - 51.89' L	1
23+87.10 - 75.40' L	1
23+87.13 - 73.40' L	1
32+14.59 - 52.21' L	1
34+14.58 - 48.32' L	1
35+35.87 - 52.28' R	1
36+14.41 - 69.82' L	1
<b>Total:</b>	<b>7</b>



**FOR BIDDING PURPOSES ONLY**

**TABLE OF 6" PIPE BEND, 45 DEGREE**

Station	Quantity (Each)
6+42.77 - 65.51' L	1
6+48.19 - 70.91' L	1
6+49.25 - 50.57' R	1
6+49.61 - 56.39' R	1
10+66.62 - 20.49' R	1
10+66.62 - 25.64' R	1
10+66.64 - 66.60' R	1
10+71.69 - 71.58' R	1
14+83.24 - 37.88' R	1
14+83.26 - 32.46' R	1
14+83.28 - 25.05' R	1
14+83.30 - 19.36' R	1
23+52.43 - 65.92' L	1
23+57.35 - 71.00' L	1
23+57.00 - 19.99' R	1
23+57.29 - 25.58' R	1
23+57.74 - 32.42' R	1
23+58.16 - 37.88' R	1
27+50.94 - 4.73' R	1
27+51.02 - 1.27' L	1
27+66.51 - 38.92' R	1
27+66.58 - 33.20' R	1
27+66.74 - 20.94' R	1
35+61.87 - 38.62' R	1
35+62.26 - 32.84' R	1
35+62.78 - 25.09' R	1
35+63.16 - 19.44' R	1
35+63.11 - 68.33' L	1
35+66.88 - 64.79' L	1
<b>Total:</b>	<b>29</b>

**TABLE OF 16" PIPE BEND, 45 DEGREE**

Station	Quantity (Each)
31+79.98 - 19.92' R	1
31+80.22 - 25.89' R	1
31+80.48 - 32.60' R	1
31+80.71 - 38.26' R	1
<b>Total:</b>	<b>4</b>

**TABLE OF 6" PIPE CAP**

Station	Quantity (Each)
6+46.39 - 3.86' R	1
6+54.42 - 3.86' R	1
10+67.72 - 3.56' R	1
10+72.55 - 3.56' R	1
14+82.76 - 2.91' R	1
14+82.80 - 2.91' R	1
19+34.87 - 2.60' R	1
19+34.98 - 2.60' R	1
23+55.48 - 2.86' R	1
23+58.32 - 2.86' R	1
27+50.97 - 2.77' R	1
27+59.93 - 2.77' R	1
31+81.17 - 51.91' L	1
35+57.11 - 2.04' R	1
35+64.32 - 2.04' R	1
<b>Total:</b>	<b>15</b>

**TABLE OF 6" GATE VALVE WITH BOX**

Station	Quantity (Each)
6+44.24 - 74.89' L	1
10+79.88 - 53.80' L	1
23+58.01 - 57.97' L	1
27+46.31 - 45.36' L	1
27+51.64 - 66.27' L	1
31+83.37 - 67.99' L	1
35+63.11 - 68.33' L	1
35+72.65 - 54.20' L	1
<b>Total:</b>	<b>8</b>

**TABLE OF STANDARD FIRE HYDRANT**

Station	Quantity (Each)
6+05.09 - 75.05' L	1
10+87.83 - 53.85' L	1
23+67.48 - 58.00' L	1
27+33.47 - 45.57' L	1
31+98.33 - 68.00' L	1
35+98.92 - 55.23' L	1
<b>Total:</b>	<b>6</b>

**ADJUST WATER MAIN**

The bid items for "Adjust 6" Water Main" and "Adjust 16" Water Main" have been established to provide full compensation for excavating, dewatering of the water main and additional time required for installation of materials, backfilling, and all necessary appurtenances for proper completion of the water main adjustment. All necessary insulation board, as shown in the standard plates, shall be incidental to the water main adjustment. All applicable piping and bends required for the water main adjustment are paid for under their respective bid items.

**TABLE OF ADJUST 6" WATERMAIN**

Station	L/R	Length (Ft)
6+46	L & R	130
10+67	R	53
14+83	R	19
23+58	R	18
27+63	R	47
35+63	R	20
<b>Total:</b>		<b>287</b>

**TABLE OF ADJUST 16" WATERMAIN**

Station	L/R	Length (Ft)
31+80	R	19
		<b>19</b>

**TABLE OF TEMPORARY WATER MAIN CONNECTION**

Station	Quantity (Each)
14+82.80 - 2.91' R	1
19+34.98 - 2.60' R	1
<b>Total:</b>	<b>2</b>

**TABLE OF ABANDON WATER SERVICE**

Station	to	Station	Quantity (Each)
14+83.26 - 32.46' R		15+37.04 - 38.52' R	1
		<b>Total:</b>	<b>1</b>



FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	ES 2014-003 PCN X03G	8	37

**RECONNECT WATER SERVICE**

The bid item of "Reconnect Water Service" shall include all costs associated with connecting the new water service with the existing water service at the location shown on the plans, including all necessary excavation, fittings, adapters, blocking, bedding and backfilling.

**TABLE OF RECONNECT WATER SERVICE**

Station	Quantity (Each)
19+64.91 - 51.89' L	1
23+87.10 - 75.40' L	1
23+87.13 - 73.40' L	1
32+14.59 - 52.21' L	1
34+14.58 - 48.32' L	1
35+35.87 - 52.28' R	1
36+14.41 - 69.82' L	1
Total:	7

**CONNECT TO EXISTING WATER MAIN**

All costs associated with making the connection to the existing water main, including all labor, excavation, fittings, retainer glands, wrap, bedding and backfill, shall be incidental to the contract unit price per each for "Connect to Existing Water Main".

Some locations may require the contractor to cut and tie to the existing main. In areas where this will disrupt service the contractor shall make the required connection at a time to be designated by the City. This time may be during nighttime hours. The exact time will vary from location to location to accommodate the needs of water users who will experience an outage.

All costs associated with work during this time period shall be incidental to the contract price per each for "Connect to Existing Water Main".

**TABLE OF CONNECT TO EXISTING WATER MAIN**

Station	Quantity (Each)
6+49.61 - 56.39' R	1
6+49.72 - 80.37' L	1
10+71.69 - 71.58' R	1
10+71.92 - 53.80' L	1
14+82.65 - 27.13' L	1
14+83.00 - 41.82' R	1
19+34.52 - 51.87' L	1
19+35.31 - 41.00' R	1
23+57.30 - 75.00' L	1
23+59.43 - 52.40' L	1
27+51.64 - 66.27' L	1
27+66.45 - 43.53' L	1
31+77.87 - 68.00' L	1
31+79.98 - 19.92' R	1
31+80.71 - 38.26' L	1
35+60.99 - 51.80' R	1
35+63.17 - 72.58' L	1
Total:	17

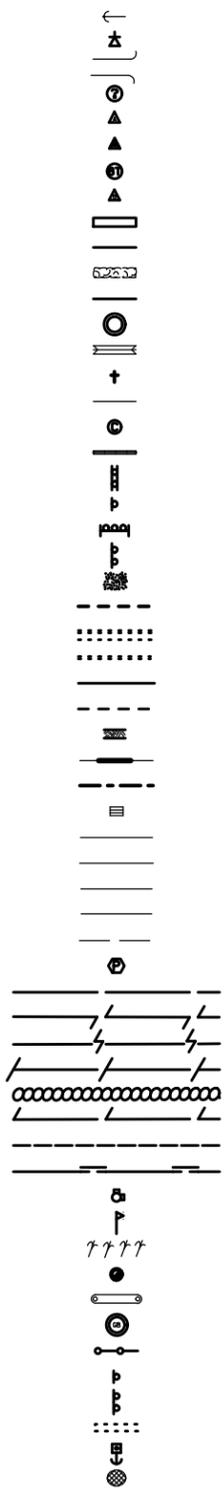


# EXISTING TOPOGRAPHY SYMBOLOGY & LEGEND

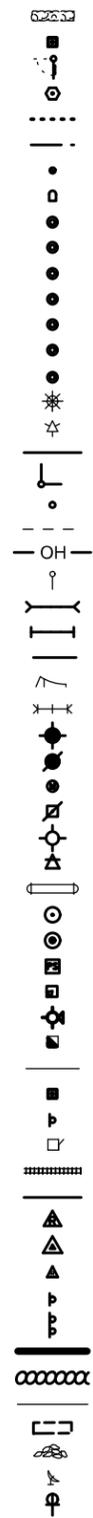
FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	ES 2014-003 PCN X03G	9	37

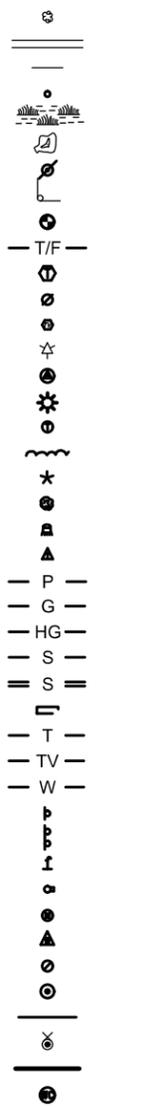
- Anchor
- Antenna
- Approach
- Assumed Corner
- Azimuth Marker
- BBQ Grill/ Fireplace
- Bearing Tree
- Bench Mark
- Box Culvert
- Bridge
- Brush
- Buildings
- Bulk Tank
- Cattle Guard
- Cemetery
- Centerline
- Cistern
- Clothes Line
- Commercial Sign Double Face
- Commercial Sign One Post
- Commercial Sign Overhead
- Commercial Sign Two Post
- Concrete Symbol
- 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
- Elec. Trans./Power Jct. Box
- Fence Barbwire
- Fence Chainlink
- Fence Electric
- Fence Misc.
- Fence Rock
- Fence Snow
- Fence Wood
- Fence Woven
- Fire Hydrant
- Flag Pole
- Flower Bed
- Gas Valve Or Meter
- Gas Pump Island
- Grain Bin
- Guardrail
- Guide Sign One Post
- Guide Sign Two Post
- Gutter
- Guy Pole
- Haystack



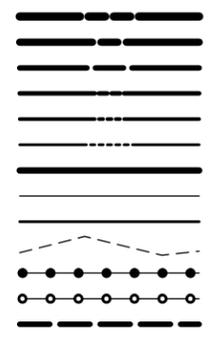
- Hedge
- Highway R.O.W. Marker
- Interstate Close Gate
- Iron Pin
- Irrigation Ditch
- Lake Edge
- Lawn Sprinkler
- Mailbox
- Manhole Electric
- Manhole Gas
- Manhole Misc
- Manhole Sanitary Sewer
- Manhole Storm Sewer
- Manhole Telephone
- Manhole Water
- Merry-Go-Round
- Microwave Radio Tower
- Misc. Line
- Misc. Property Corner
- Misc. Post
- Overhang Or Encroachment
- Overhead Utility Line
- Parking Meter
- 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 R.O.W. Marker
- Railroad Signs
- Railroad Switch
- Railroad Track
- Railroad Trestle
- Rebar
- Rebar With Cap
- Reference Mark
- Regulatory Sign One Post
- Regulatory Sign Two Post
- 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
- Telephone Junction Box
- Telephone Pole
- Television Cable Jct Box
- Television Tower
- Test Wells/Bore Holes
- Traffic Signal
- Trash Barrel
- Tree Belt
- Tree Coniferous
- Tree Deciduous
- Tree Stumps
- Triangulation Station
- Underground Electric Line
- Underground Gas Line
- Underground High Pressure Gas Line
- Underground Sanitary Sewer
- Underground Storm Sewer
- Underground Tank
- Underground Telephone Line
- Underground Television Cable
- Underground Water Line
- Warning Sign One Post
- Warning Sign Two Post
- 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
- R. O. W. Line
- New R. O. W. Line
- Cut and Fill Limits
- Control of Access
- New Control of Access
- Proposed ROW (After Property Disposal)



## PROPOSED SYMBOLOGY & LEGEND

- Air Release Manhole
- Tee
- Cross
- Wye
- Fire Hydrant
- Valve & Box



- 90° Bend
- 45° Bend
- 22.5° Bend
- 11.25° Bend
- Reducer or Increaser
- Sleeve
- Cap



- Water Main
- Sewer Main
- Sewer Manhole



- City Installed Water



# UTILITY PHASING SEQUENCE PHASE 1

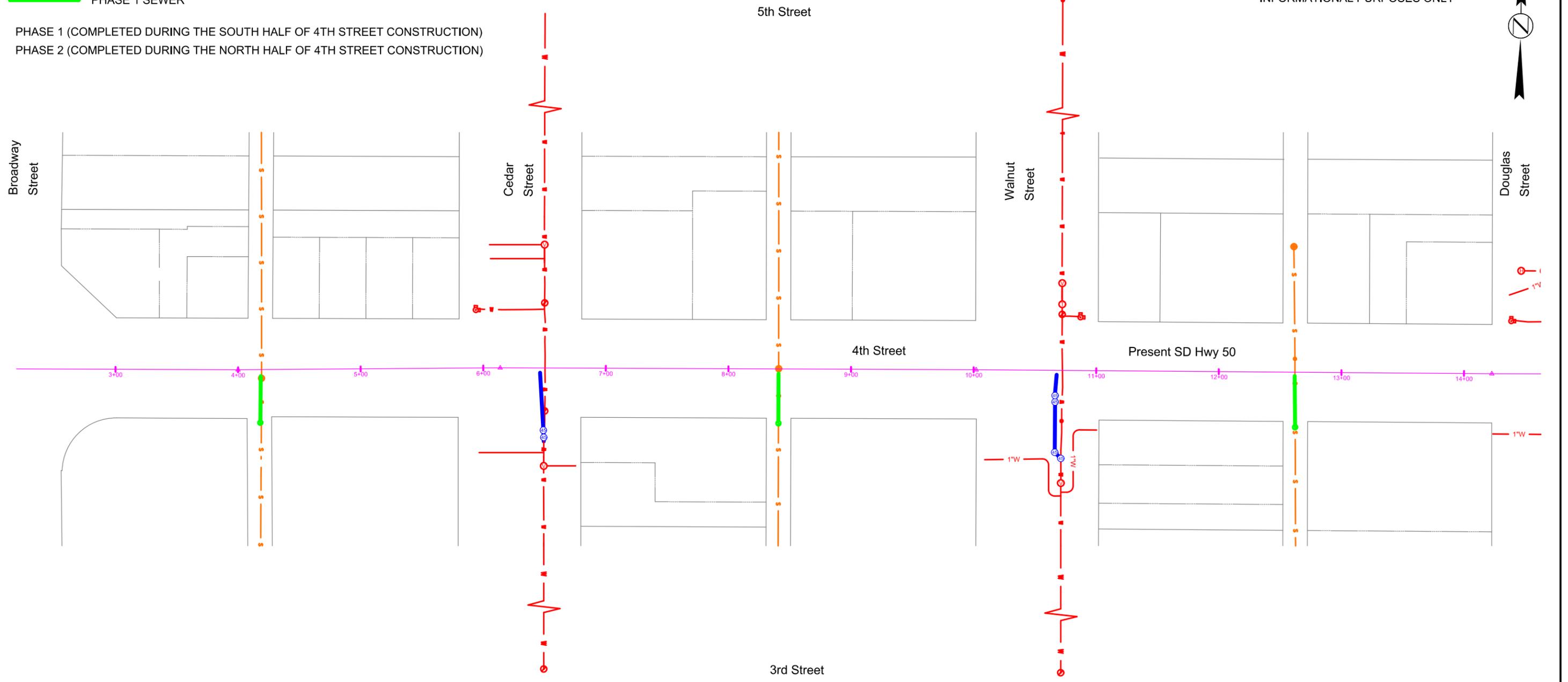
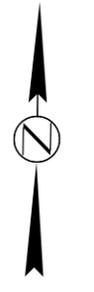
FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	ES 2014-003 PCN X03G	10	37

- LEGEND**
-  EXISTING WATER MAIN
  -  EXISTING SEWER MAIN
  -  PHASE 1 WATER
  -  PHASE 1 SEWER

PHASE 1 (COMPLETED DURING THE SOUTH HALF OF 4TH STREET CONSTRUCTION)  
PHASE 2 (COMPLETED DURING THE NORTH HALF OF 4TH STREET CONSTRUCTION)

NOT TO SCALE:  
PHASING SCHEMATIC PROVIDED FOR  
INFORMATIONAL PURPOSES ONLY



**NOTES:**  
SERVICE LINES SHALL BE FULLY STUBBED OUT, PRESSURE TESTED AND BACTERIA TESTED.  
TEMPORARY HYDRANTS OR CAPS WITH FITTINGS SHALL BE PROVIDED BY THE CONTRACTOR FOR TESTING.



STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	ES 2014-003 PCN X03G	11	37

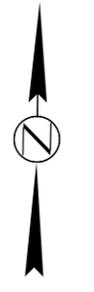
# UTILITY PHASING SEQUENCE

## PHASE 2

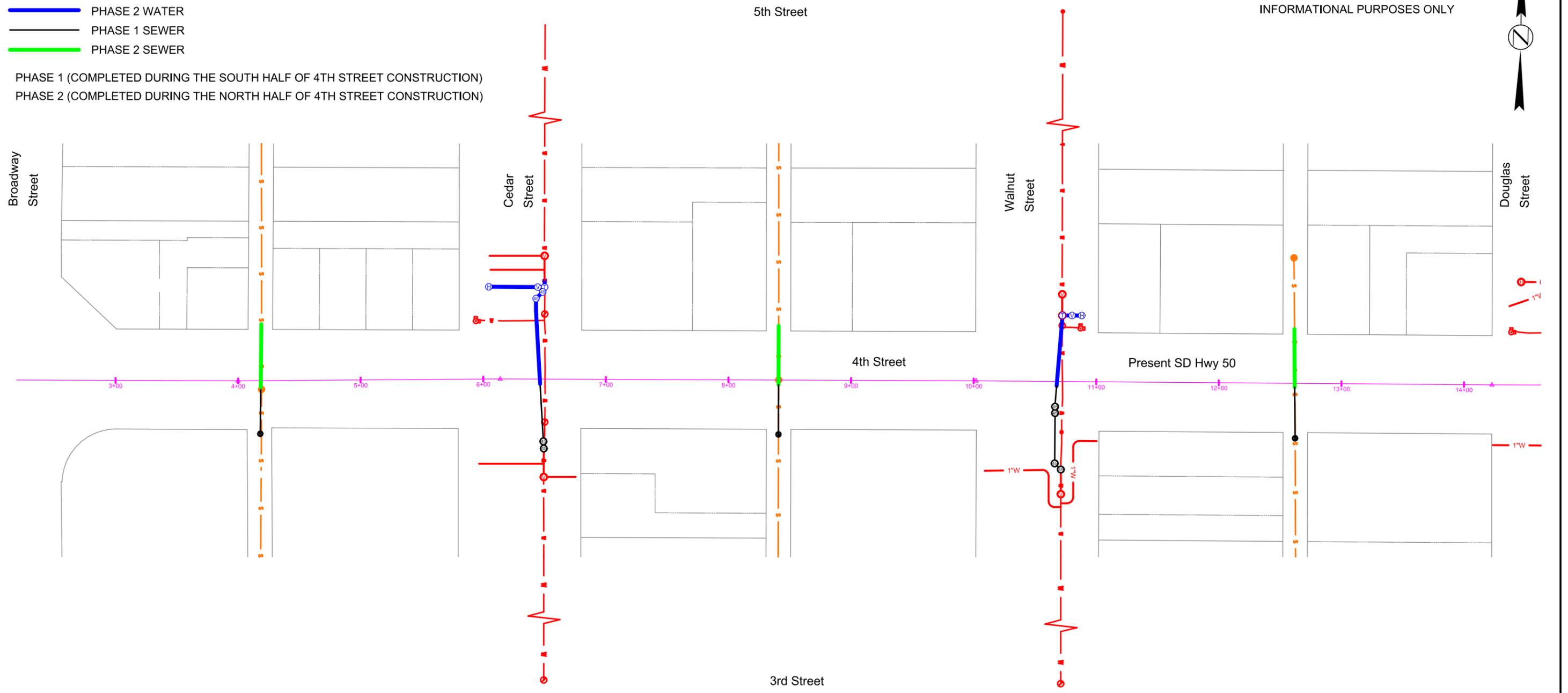
FOR BIDDING PURPOSES ONLY

- LEGEND**
- EXISTING WATER MAIN
  - EXISTING SEWER MAIN
  - PHASE 1 WATER
  - PHASE 2 WATER
  - PHASE 1 SEWER
  - PHASE 2 SEWER

NOT TO SCALE:  
PHASING SCHEMATIC PROVIDED FOR  
INFORMATIONAL PURPOSES ONLY



PHASE 1 (COMPLETED DURING THE SOUTH HALF OF 4TH STREET CONSTRUCTION)  
PHASE 2 (COMPLETED DURING THE NORTH HALF OF 4TH STREET CONSTRUCTION)



**NOTES:**  
SERVICE LINES SHALL BE FULLY STUBBED OUT, PRESSURE TESTED AND BACTERIA TESTED.  
TEMPORARY HYDRANTS OR CAPS WITH FITTINGS SHALL BE PROVIDED BY THE CONTRACTOR FOR TESTING.



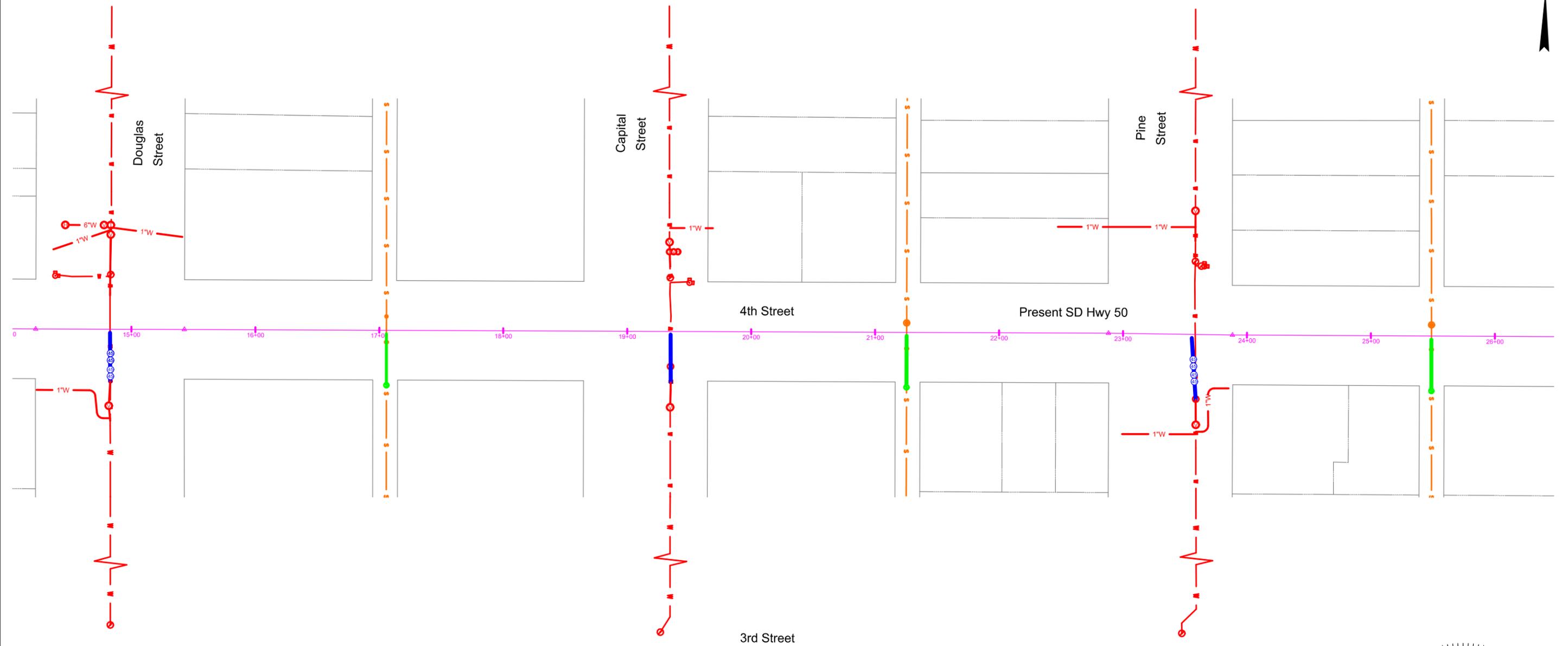
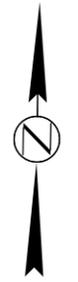
# UTILITY PHASING SEQUENCE PHASE 1

FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	ES 2014-003 PCN X03G	12	37

- LEGEND**
-  EXISTING WATER MAIN
  -  EXISTING SEWER MAIN
  -  PHASE 1 WATER
  -  PHASE 1 SEWER

NOT TO SCALE:  
PHASING SCHEMATIC PROVIDED FOR  
INFORMATIONAL PURPOSES ONLY



PHASE 1 (COMPLETED DURING THE SOUTH HALF OF 4TH STREET CONSTRUCTION)  
PHASE 2 (COMPLETED DURING THE NORTH HALF OF 4TH STREET CONSTRUCTION)

**NOTES:**  
SERVICE LINES SHALL BE FULLY STUBBED OUT, PRESSURE TESTED AND BACTERIA TESTED.  
TEMPORARY HYDRANTS OR CAPS WITH FITTINGS SHALL BE PROVIDED BY THE CONTRACTOR FOR TESTING.



STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	ES 2014-003 PCN X03G	13	37

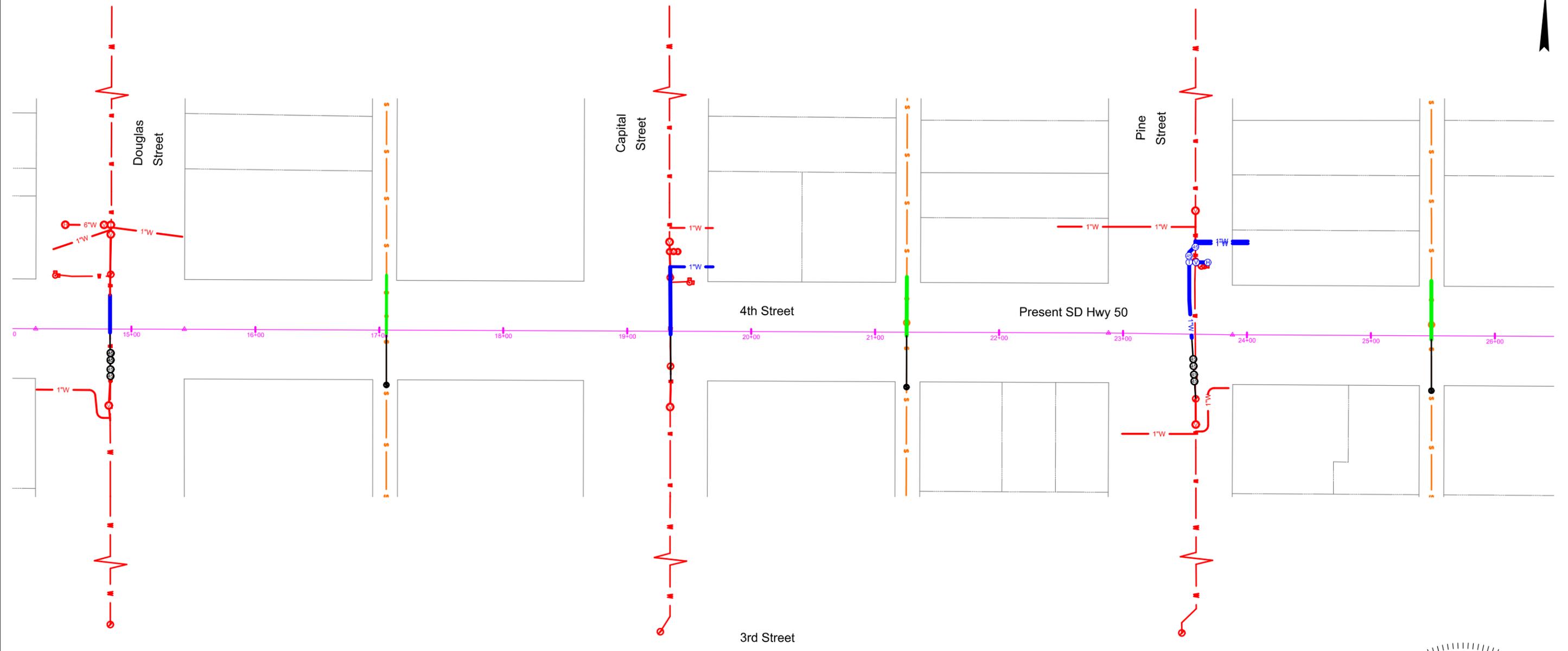
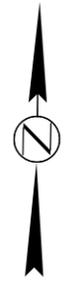
# UTILITY PHASING SEQUENCE

## PHASE 2

FOR BIDDING PURPOSES ONLY

- LEGEND**
- EXISTING WATER MAIN
  - EXISTING SEWER MAIN
  - PHASE 1 WATER
  - PHASE 2 WATER
  - PHASE 1 SEWER
  - PHASE 2 SEWER

NOT TO SCALE:  
PHASING SCHEMATIC PROVIDED FOR  
INFORMATIONAL PURPOSES ONLY



PHASE 1 (COMPLETED DURING THE SOUTH HALF OF 4TH STREET CONSTRUCTION)  
PHASE 2 (COMPLETED DURING THE NORTH HALF OF 4TH STREET CONSTRUCTION)

**NOTES:**  
SERVICE LINES SHALL BE FULLY STUBBED OUT, PRESSURE TESTED AND BACTERIA TESTED.  
TEMPORARY HYDRANTS OR CAPS WITH FITTINGS SHALL BE PROVIDED BY THE CONTRACTOR FOR TESTING.



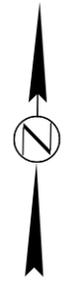
# UTILITY PHASING SEQUENCE PHASE 1

FOR BIDDING PURPOSES ONLY

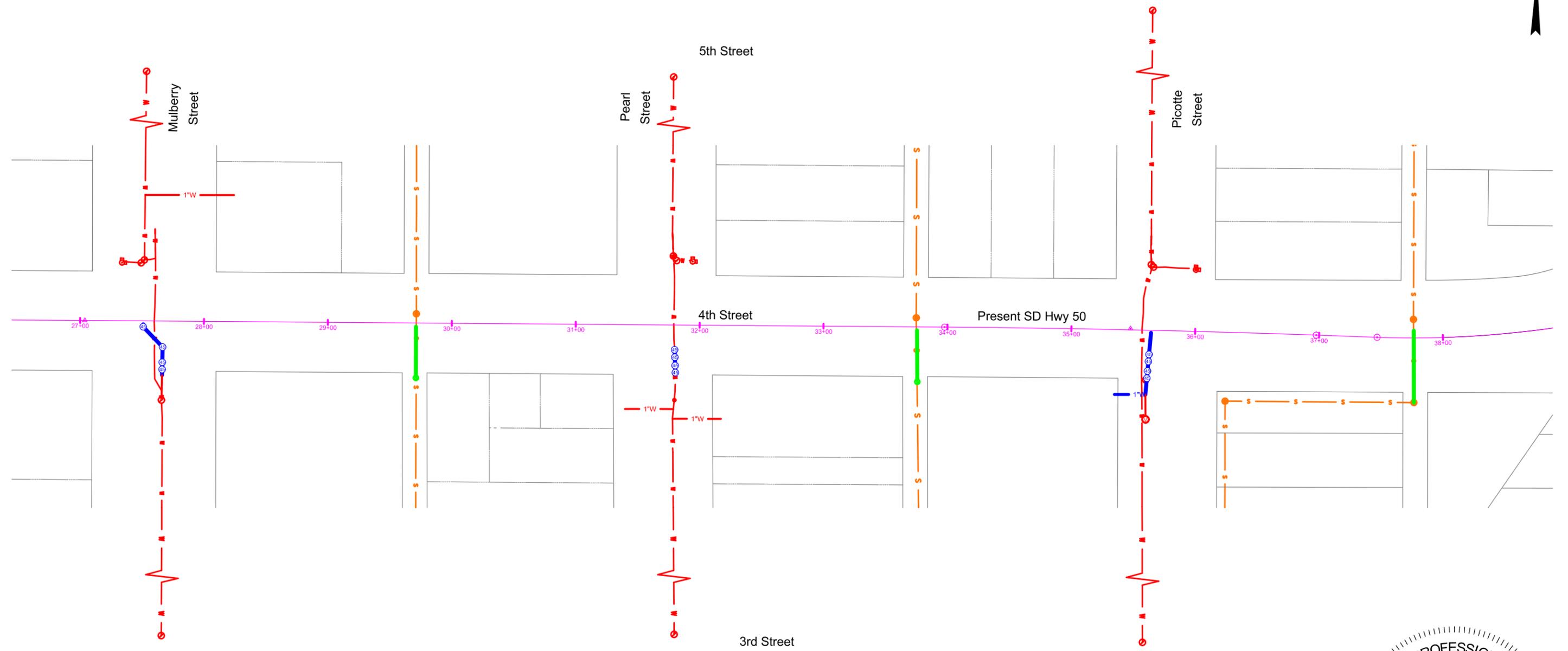
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	ES 2014-003 PCN X03G	14	37

- LEGEND**
-  EXISTING WATER MAIN
  -  EXISTING SEWER MAIN
  -  PHASE 1 WATER
  -  PHASE 1 SEWER

NOT TO SCALE:  
PHASING SCHEMATIC PROVIDED FOR  
INFORMATIONAL PURPOSES ONLY



PHASE 1 (COMPLETED DURING THE SOUTH HALF OF 4TH STREET CONSTRUCTION)  
PHASE 2 (COMPLETED DURING THE NORTH HALF OF 4TH STREET CONSTRUCTION)



**NOTES:**  
SERVICE LINES SHALL BE FULLY STUBBED OUT, PRESSURE TESTED AND BACTERIA TESTED.  
TEMPORARY HYDRANTS OR CAPS WITH FITTINGS SHALL BE PROVIDED BY THE CONTRACTOR FOR TESTING.



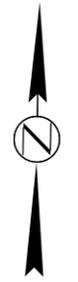
# UTILITY PHASING SEQUENCE PHASE 2

FOR BIDDING PURPOSES ONLY

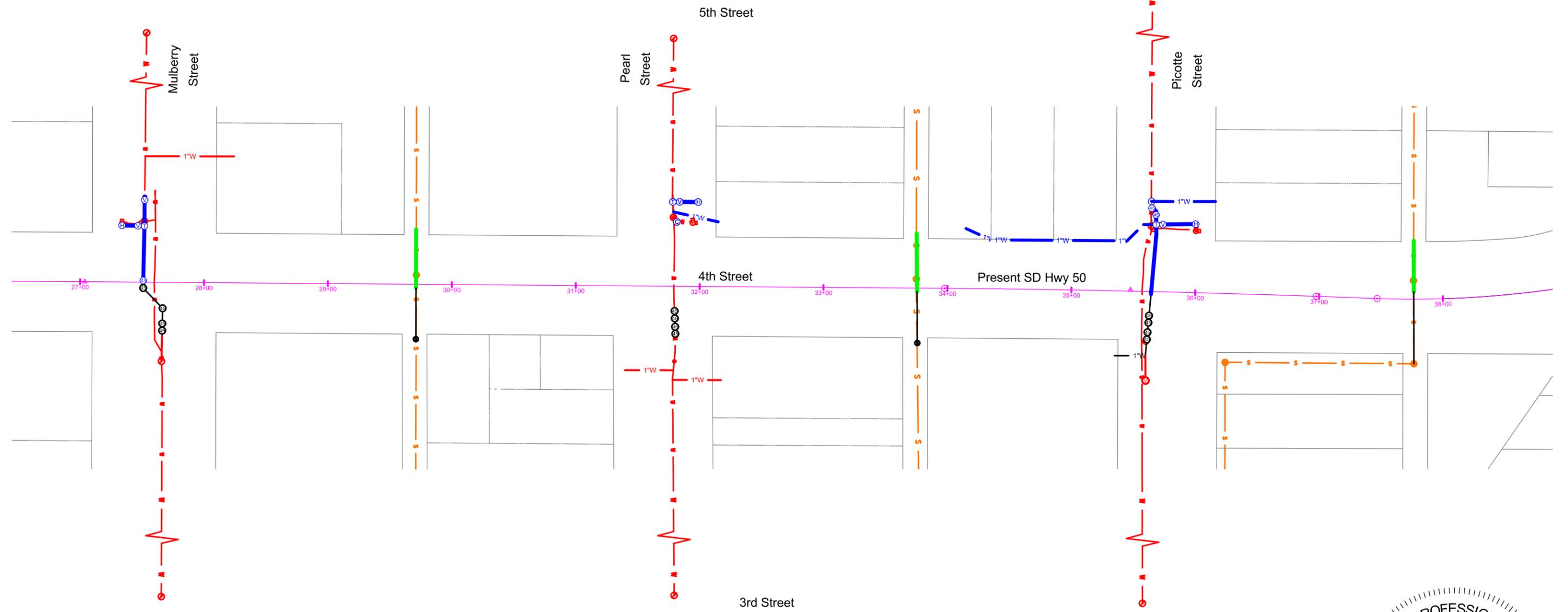
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	ES 2014-003 PCN X03G	15	37

- LEGEND**
- EXISTING WATER MAIN
  - EXISTING SEWER MAIN
  - PHASE 1 WATER
  - PHASE 2 WATER
  - PHASE 1 SEWER
  - PHASE 2 SEWER

NOT TO SCALE:  
PHASING SCHEMATIC PROVIDED FOR  
INFORMATIONAL PURPOSES ONLY



PHASE 1 (COMPLETED DURING THE SOUTH HALF OF 4TH STREET CONSTRUCTION)  
PHASE 2 (COMPLETED DURING THE NORTH HALF OF 4TH STREET CONSTRUCTION)



**NOTES:**  
SERVICE LINES SHALL BE FULLY STUBBED OUT, PRESSURE TESTED AND BACTERIA TESTED.  
TEMPORARY HYDRANTS OR CAPS WITH FITTINGS SHALL BE PROVIDED BY THE CONTRACTOR FOR TESTING.



STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	ES 2014-003 PCN X03G	16	37

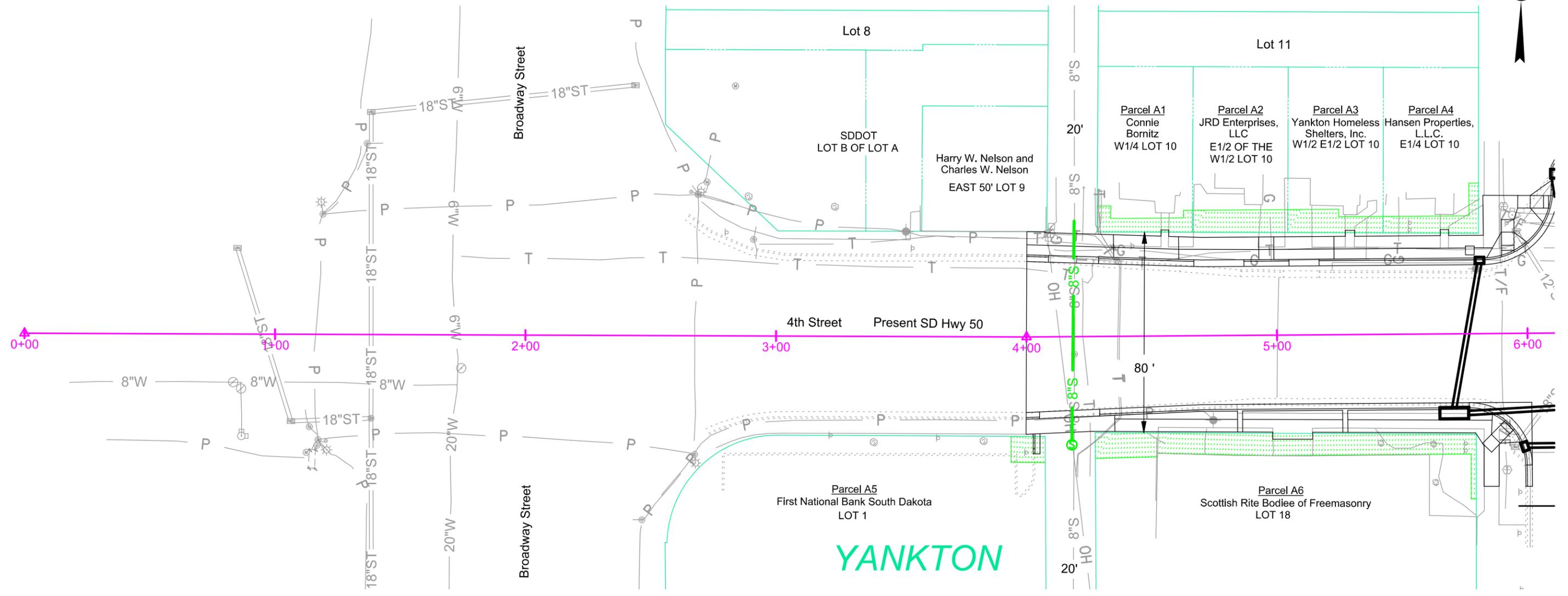
**FOR BIDDING PURPOSES ONLY**

4+17.81 - 43.11' R  
 Install 48" Sanitary Sewer Manhole  
 With Type A Frame & Lid (MH # 1)  
 Rim = 1207.48  
 IE N(8") = 1195.78  
 IE S (8") = 1195.76

Connect to Existing Sewer Main  
 4+17.81 - 43.11' R  
 4+19.35 - 46.06' L

4+17.81 - 43.11' R to 4+19.35 - 46.06' L  
 Install 8" - 90' PVC Sewer Pipe  
 Match Existing Slope  
 (Between Manhole & Existing Pipe)

SEC 18 - T93N - R55W BLOCK 35 TODD'S ADDITION



**YANKTON**

BLOCK 24  
 TODD'S ADDITION  
 SEC 18 - T93N - R55W

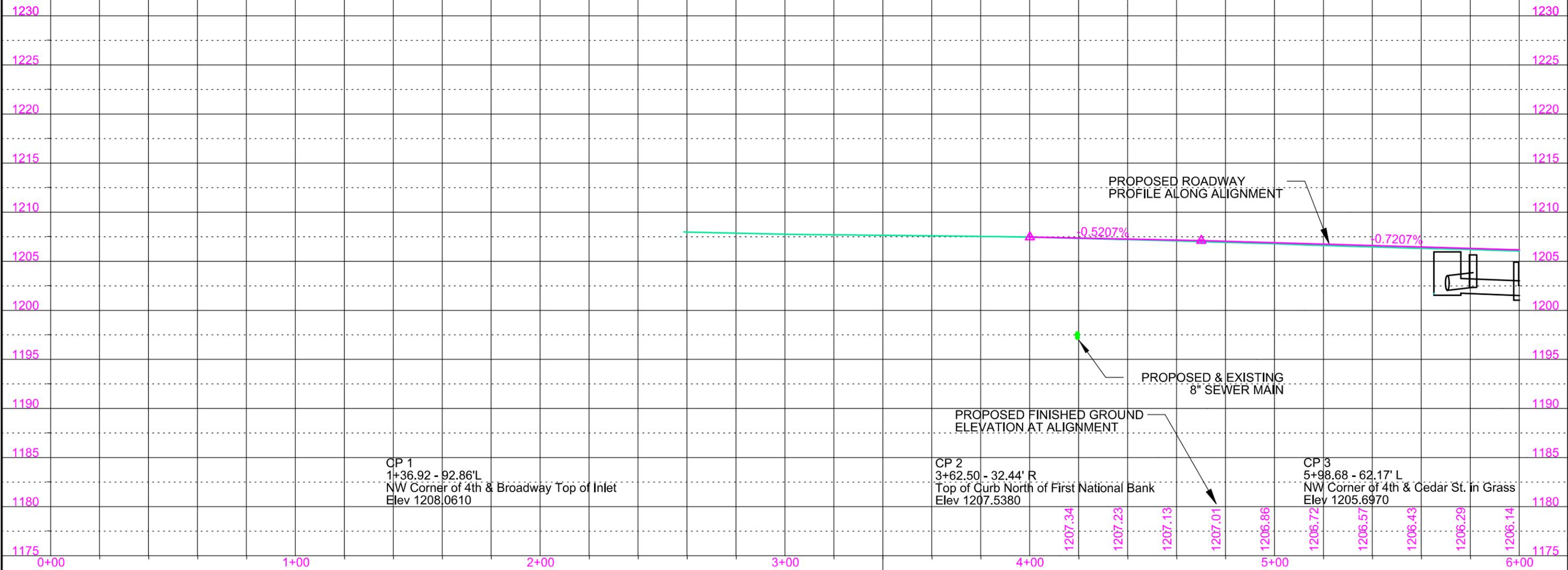
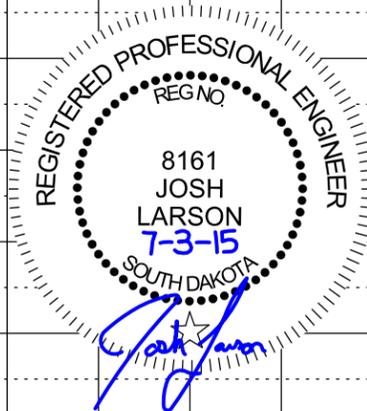
**SEWER REMOVALS:**  
 STA 4+17.81 - 43.11'R TO 4+19.35 - 46.1'L  
 90 LF - REMOVE SEWER MAIN PIPE  
 STA 4+19.11 - 7.0' R  
 1 EA - REMOVE MANHOLE



FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	ES 2014-003 PCN X03G	17	37

NOTE: SEE SDDOT PLAN SET NH 0050(99)381 FOR ALL FINISH GRADE ELEVATIONS AND STORM SEWER INFORMATION. FINISH GRADE AND STORM SEWER INFORMATION SHOWN IN THIS PLAN SET IS FOR WATER MAIN AND SANITARY SEWER REFERENCE PURPOSES ONLY.



**FOR BIDDING PURPOSES ONLY**

Install 6" - PVC Water Main  
 6+49.72 - 80.37' L to 6+49.80 - 74.89' L (6")  
 6+05.09 - 75.05' L to 6+49.80 - 74.89' L (46")  
 6+42.77 - 65.51' L to 6+49.80 - 74.89' L (13")  
 6+42.77 - 65.51' L to 6+49.61 - 56.39' R (126")

Install Standard Fire Hydrant  
 at the following locations:  
 6+05.09 - 75.05' L  
 10+87.83 - 53.85' L

Install Gate Valve with Box  
 Sta 6+44.24 - 74.89' L (6")  
 Sta 10+79.88 - 53.80' L (6")

Install Pipe Bend, 45 Degree  
 Sta 6+42.77 - 65.51' L (6")  
 Sta 6+48.19 - 70.91' L (6")  
 Sta 6+49.25 - 50.57' R (6")  
 Sta 6+49.61 - 56.39' R (6")  
 Sta 10+66.62 - 20.49' R (6")  
 Sta 10+66.62 - 25.64' R (6")  
 Sta 10+66.64 - 66.60' R (6")  
 Sta 10+71.69 - 71.58' R (6")

Connect to Existing Water Main  
 6+49.61 - 56.39' R  
 6+49.72 - 80.37' L

8+40.99 - 44.17' R  
 Install 48" Sanitary Sewer Manhole  
 With Type A Frame & Lid (MH # 2)  
 Rim = 1205.29  
 IE N(8") = 1193.86  
 IE S (8") = 1193.84

8+40.82 - 44.17' L to 8+40.99 - 44.17' R  
 Install 8" - 89' PVC Sewer Pipe  
 Match Existing Slope  
 (Between Manhole & Existing Pipe)

Install Pipe Tee  
 Sta 6+49.80 - 74.89' L (6x6)

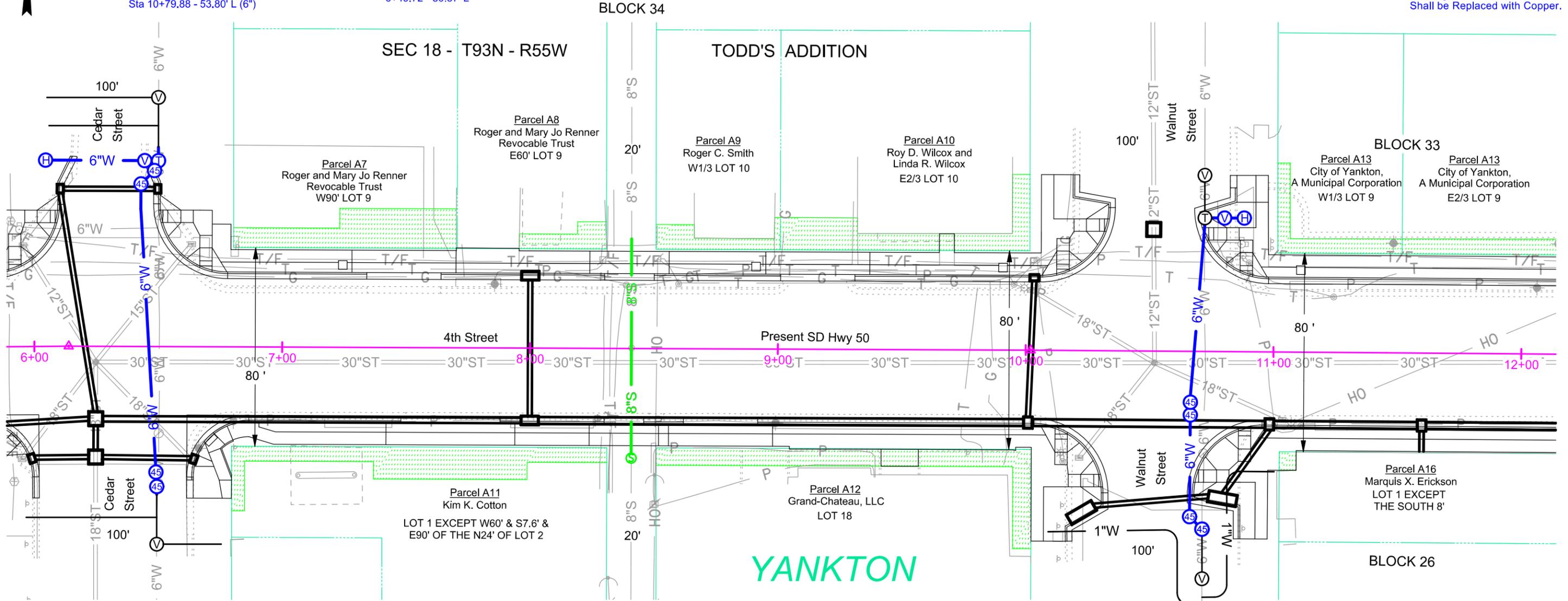
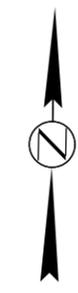
Install 6" Pipe Cap  
 Sta 6+46.39 - 3.86' R  
 Sta 6+54.42 - 3.86' R  
 Sta 10+67.72 - 3.56' R  
 Sta 10+72.55 - 3.56' R

Connect to Existing Sewer Main  
 8+40.82 - 44.17' L  
 8+40.99 - 44.17' R

Install 6" - PVC Water Main  
 10+71.69 - 71.58' L to 10+71.92 - 53.80' L (28")  
 10+71.92 - 53.80' L to 10+87.83 - 53.85' L (16")

Connect to Existing Water Main  
 10+71.69 - 71.58' R  
 10+71.92 - 53.80' L

**NOTE:**  
 Existing Lead Water Services  
 Shall be Replaced with Copper.



**WATER REMOVALS:**  
 STA 5+94.26 - 47.2'L TO 6+49.72 - 47.9'L  
 55 LF - REMOVE WATER MAIN PIPE

STA 6+49.72 - 80.4'L TO 6+49.60 - 59.6' R  
 140 LF - REMOVE WATER MAIN PIPE

STA 6+49.94 - 53.0'L  
 1 EA - REMOVE GATE VALVE

STA 6+50.29 - 34.9'R  
 1 EA - REMOVE GATE VALVE

STA 5+94.26 - 47.2'L  
 1 EA - REMOVE HYDRANT

TODD'S ADDITION  
 SEC 18 - T93N - R55W  
 BLOCK 25

**SEWER REMOVALS:**  
 STA 8+40.82 - 44.2'L TO 8+40.99 - 44.2'R  
 89 LF - REMOVE SEWER MAIN PIPE

STA 8+41.00 - 0.2' L  
 1 EA - REMOVE MANHOLE

**WATER REMOVALS:**  
 STA 10+71.94 - 44.1'L TO 10+86.82 - 43.3'L  
 15 LF - REMOVE WATER MAIN PIPE

STA 10+71.94 - 53.8'L TO 10+71.69 - 71.6'R  
 126 LF - REMOVE WATER MAIN PIPE

STA 10+71.91 - 45.6'L  
 1 EA - REMOVE GATE VALVE

STA 10+72.04 - 41.1'R  
 1 EA - REMOVE GATE VALVE

STA 10+86.82 - 43.3'L  
 1 EA - REMOVE HYDRANT

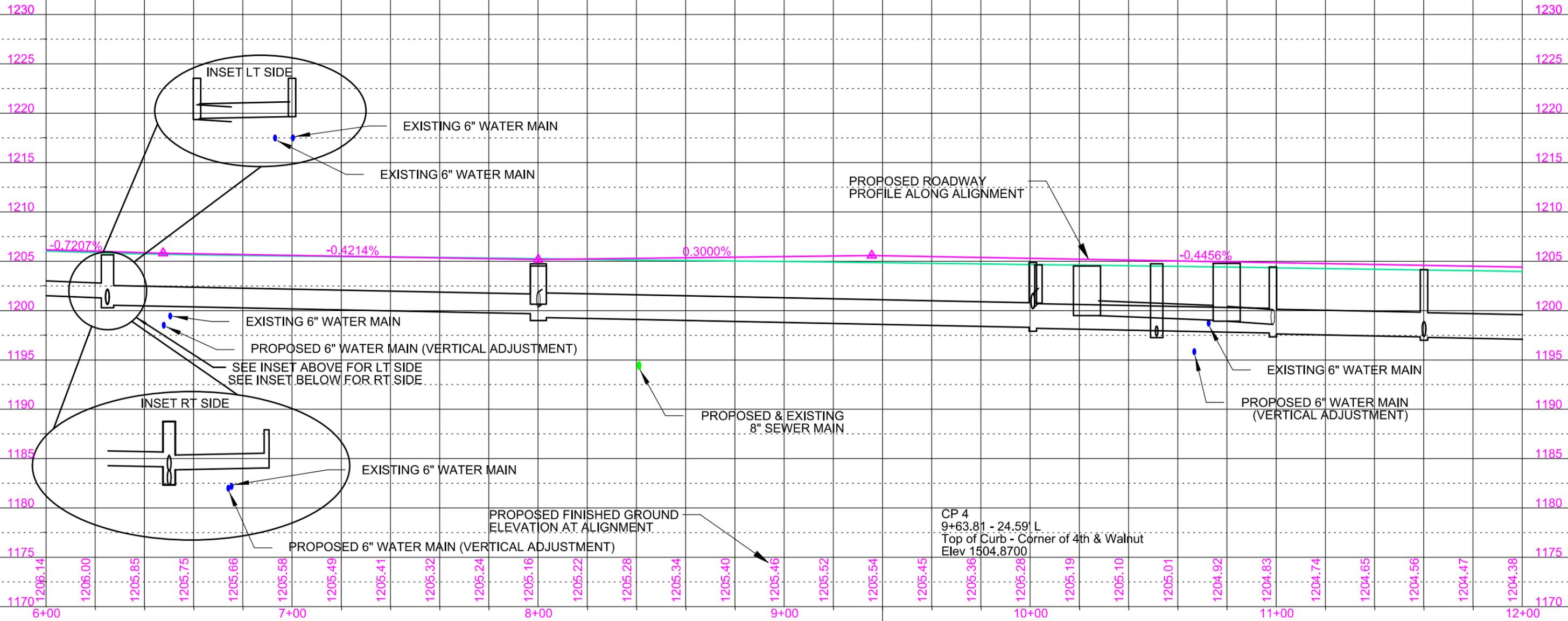
**YANKTON**



FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT ES 2014-003 PCN X03G	SHEET 19	TOTAL SHEETS 37
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NOTE: SEE SDDOT PLAN SET NH 0050(99)381 FOR ALL FINISH GRADE ELEVATIONS AND STORM SEWER INFORMATION. FINISH GRADE AND STORM SEWER INFORMATION SHOWN IN THIS PLAN SET IS FOR WATER MAIN AND SANITARY SEWER REFERENCE PURPOSES ONLY.



12+62.54 - 44.67' R  
 Install 48" Sanitary Sewer Manhole  
 With Type A Casting (MH # 3)  
 Rim = 1204.37  
 IE N(8") = 1189.55  
 IE S(8") = 1189.53

Connect to Existing Sewer Main  
 12+61.31 - 44.17' L  
 12+62.54 - 44.67' R

Install 6" - PVC Water Main  
 14+82.65 - 27.13' L to 14+83.00 - 41.82' R (69")  
 Connect to Existing Water Main  
 14+82.65 - 27.13' L  
 14+83.00 - 41.82' R

Install Pipe Bend, 45 Degree  
 Sta 14+83.24 - 37.88' R (6")  
 Sta 14+83.26 - 32.46' R (6")  
 Sta 14+83.28 - 25.05' R (6")  
 Sta 14+83.30 - 19.36' R (6")

**FOR BIDDING PURPOSES ONLY**

17+05.62 - 44.17' L  
 Install 48" Sanitary Sewer Manhole  
 With Type A Frame & Lid (MH # 4)  
 Rim = 1203.67  
 IE N(8") = 1180.85  
 IE S(8") = 1180.85

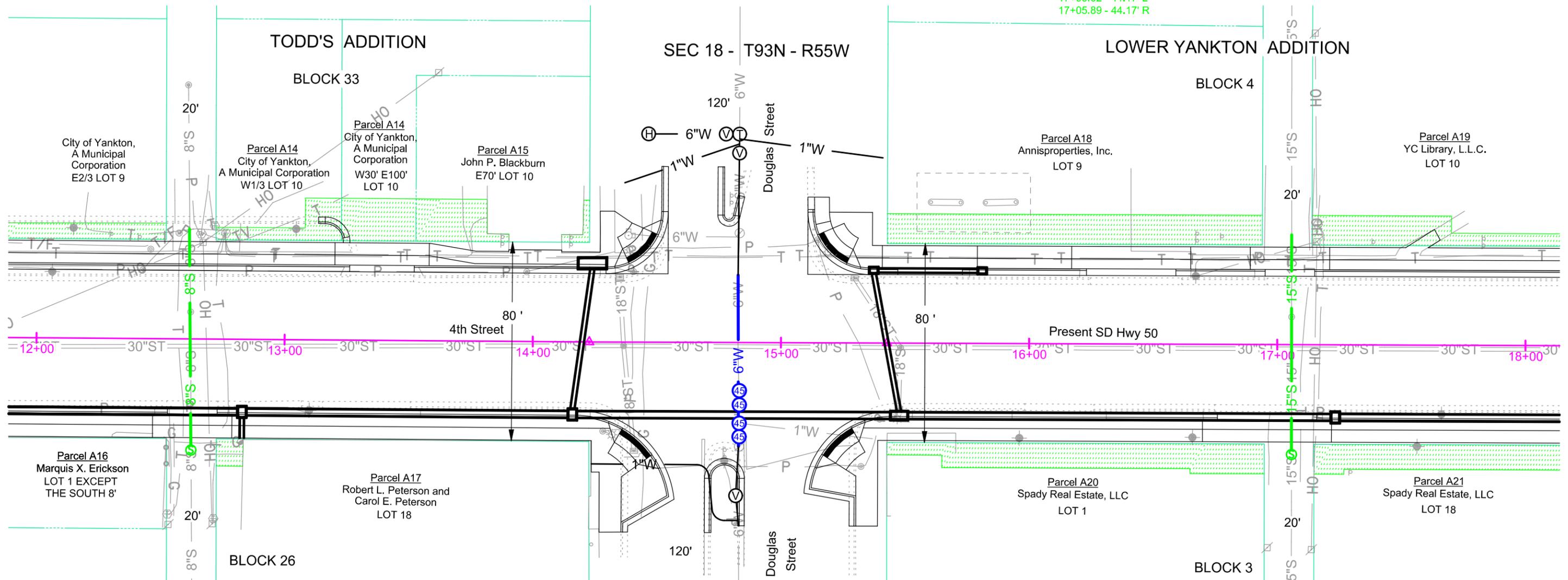
17+05.62 - 44.17' L to 17+05.89 - 44.17' R  
 Install 15" - 89' PVC Sewer Pipe  
 Match Existing Slope  
 (Between Manhole & Existing Pipe)

Connect to Existing Sewer Main  
 17+05.62 - 44.17' L  
 17+05.89 - 44.17' R

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	ES 2014-003 PCN X03G	20	37

**NOTE:**  
 Existing Lead Water Services  
 Shall be Replaced with Copper.

# YANKTON



**SEWER REMOVALS:**  
 STA 12+61.31 - 44.2'L TO 12+62.54 - 44.7'R  
 89 LF - REMOVE SEWER MAIN PIPE  
  
 STA 12+62.03 - 10.9' L  
 1 EA - REMOVE MANHOLE

**WATER REMOVALS:**  
 STA 14+38.43 - 42.9'L TO 14+83.12 - 42.4'L  
 45 LF - REMOVE WATER MAIN PIPE  
  
 STA 14+82.65 - 27.1'L TO 14+83.00 - 41.8'R  
 69 LF - REMOVE WATER MAIN PIPE  
  
 STA 14+83.28 - 41.9'R  
 1 EA - REMOVE GATE VALVE  
  
 STA 14+38.43 - 42.9'L  
 1 EA - REMOVE HYDRANT  
  
 STA 14+83.26 - 32.5'R TO 15+37.04 - 38.5'R  
 ABANDON EXISTING WATER SERVICE

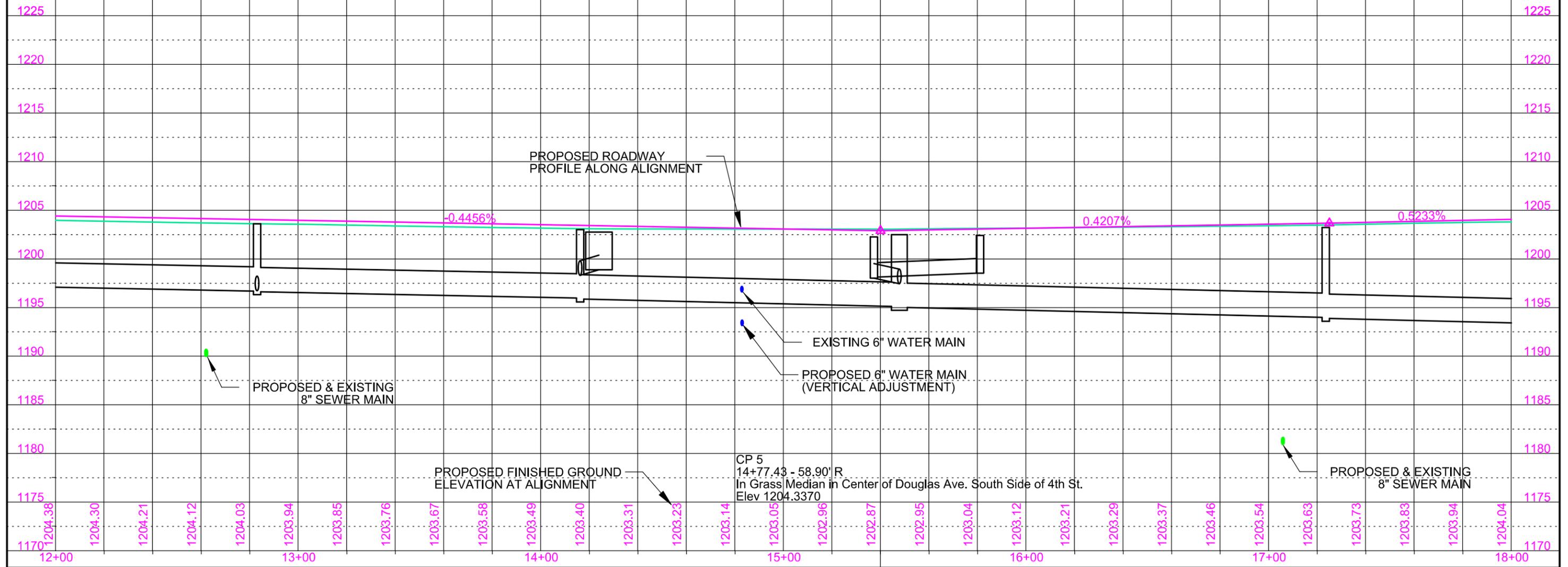
**SEWER REMOVALS:**  
 STA 17+05.62 - 44.2'L TO 17+05.89 - 44.2'R  
 89 LF - REMOVE SEWER MAIN PIPE  
  
 STA 17+05.73 - 11.2' L  
 1 EA - REMOVE MANHOLE



FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	ES 2014-003 PCN X03G	21	37

NOTE: SEE SDDOT PLAN SET NH 0050(99)381 FOR ALL FINISH GRADE ELEVATIONS AND STORM SEWER INFORMATION. FINISH GRADE AND STORM SEWER INFORMATION SHOWN IN THIS PLAN SET IS FOR WATER MAIN AND SANITARY SEWER REFERENCE PURPOSES ONLY.



CP 5  
14+77.43 - 58.90' R  
In Grass Median in Center of Douglas Ave. South Side of 4th St.  
Elev 1204.3370

**FOR BIDDING PURPOSES ONLY**

**NOTE:**

The contractor shall verify the existing 6" water depth at the following crossing locations.  
 Crossing Locations:  
 19+35.21 - 29.17' R  
 23+57.48 - 63.00' L

Install 6" - PVC Water Main  
 19+34.52 - 51.87' L to 19+35.31 - 41.00' R (93')

Install 6" Pipe Cap  
 Sta 19+34.87 - 2.60' R  
 Sta 19+34.98 - 2.60' R

Connect to Existing Water Main  
 19+34.52 - 51.87' L  
 19+35.31 - 41.00' R

Install - 1" Water Service  
 19+34.52 - 51.87' L to 19+64.91 - 51.89' L (Each)

1" Curb Stop with Box  
 19+64.91 - 51.89' L

1" Corporation Stop with Tapping Saddle  
 19+34.52 - 51.87' L

Reconnect Water Service  
 19+64.91 - 51.89' L

21+25.49 - 44.17' R  
 Install 48" Sanitary Sewer Manhole  
 With Type A Frame & Lid (MH # 5)  
 Rim = 1200.89  
 IE N(8") = 1187.87  
 IE S(8") = 1187.85

21+25.40 - 44.51' L to 21+25.49 - 44.17' R  
 Install 8" - 89' PVC Sewer Pipe  
 Match Existing Slope  
 (Between Manhole & Existing Pipe)

Connect to Existing Sewer Main  
 21+25.40 - 44.51' L  
 21+25.49 - 44.17' R

Install 6" - PVC Water Main  
 23+52.43 - 65.92' L to 23+57.30 - 75.00' L (12')  
 23+52.43 - 65.92' L to 23+52.56 - 58.00' L (8')  
 23+52.56 - 58.00' L to 23+67.48 - 58.00' L (15')  
 23+52.56 - 58.00' L to 23+59.43 - 52.40' L (111')

Install Standard Fire Hydrant  
 at the following locations:  
 23+67.48 - 58.00' L

Install Gate Valve with Box  
 Sta 23+58.01 - 57.97' L (6")

Connect to Existing Water Main  
 23+57.30 - 75.00' L  
 23+59.43 - 52.40' L

Install Pipe Tee  
 Sta 23+52.56 - 58.00' L (6x6)

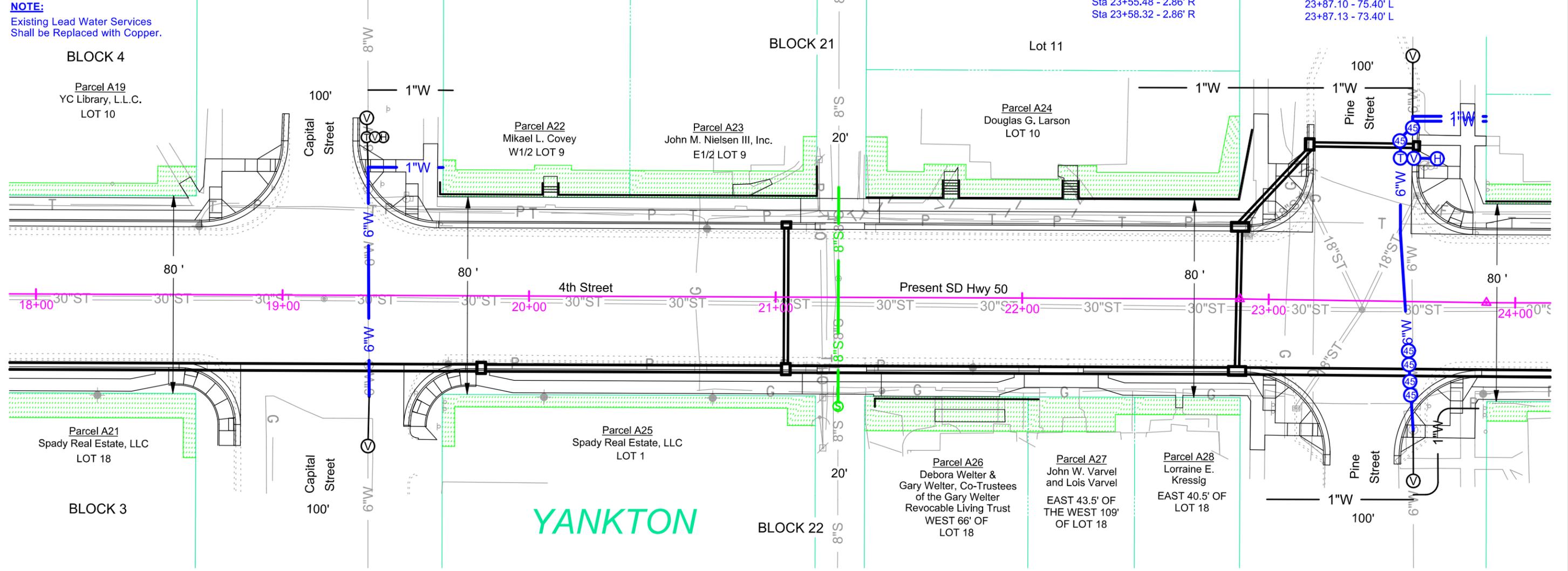
Install Pipe Bend, 45 Degree  
 Sta 23+52.43 - 65.92' L (6")  
 Sta 23+57.35 - 71.00' L (6")  
 Sta 23+57.00 - 19.99' R (6")  
 Sta 23+57.29 - 25.58' R (6")  
 Sta 23+57.74 - 32.42' R (6")  
 Sta 23+58.16 - 37.88' R (6")

Install - 1" Water Service  
 23+57.30 - 75.00' L to 23+87.10 - 75.40' L (Each)  
 23+57.32 - 73.00' L to 23+87.13 - 73.40' L (Each)

1" Curb Stop with Box  
 23+87.10 - 75.40' L  
 23+87.13 - 73.40' L

1" Corporation Stop with Tapping Saddle  
 23+57.30 - 75.00' L  
 23+57.32 - 73.00' L

Reconnect Water Service  
 23+87.10 - 75.40' L  
 23+87.13 - 73.40' L



**NOTE:**  
 Existing Lead Water Services  
 Shall be Replaced with Copper.

**BLOCK 4**

Parcel A19  
 YC Library, L.L.C.  
 LOT 10

Capital Street  
 100'

**BLOCK 21**

Lot 11

Pine Street  
 100'

Parcel A22  
 Mikael L. Covey  
 W1/2 LOT 9

Parcel A23  
 John M. Nielsen III, Inc.  
 E1/2 LOT 9

Parcel A24  
 Douglas G. Larson  
 LOT 10

**4th Street**

**Present SD Hwy 50**

**BLOCK 3**

Parcel A21  
 Spady Real Estate, LLC  
 LOT 18

Capital Street  
 100'

Parcel A25  
 Spady Real Estate, LLC  
 LOT 1

**BLOCK 22**

Parcel A26  
 Debora Welter &  
 Gary Welter, Co-Trustees  
 of the Gary Welter  
 Revocable Living Trust  
 WEST 66' OF  
 LOT 18

Parcel A27  
 John W. Varvel  
 and Lois Varvel  
 EAST 43.5' OF  
 THE WEST 109'  
 OF LOT 18

Parcel A28  
 Lorraine E.  
 Kressig  
 EAST 40.5' OF  
 LOT 18

Pine Street  
 100'

**YANKTON**

**WATER REMOVALS:**

- STA 19+34.52 - 51.9'L TO 19+35.31 - 41.0'R  
93 LF - REMOVE WATER MAIN PIPE
- STA 19+34.57 - 39.4'L TO 19+50.11 - 39.2'L  
16 LF - REMOVE WATER MAIN PIPE
- STA 19+34.57 - 43.2'L  
1 EA - REMOVE GATE VALVE
- STA 19+35.11 - 28.2'R  
1 EA - REMOVE GATE VALVE
- STA 19+50.11 - 39.2'L  
1 EA - REMOVE HYDRANT

**SEWER REMOVALS:**

- STA 21+25.40 - 44.5'L TO 21+25.49 - 44.2'R  
89 LF - REMOVE SEWER MAIN PIPE
- STA 21+25.45 - 7.6' L  
1 EA - REMOVE MANHOLE

**WATER REMOVALS:**

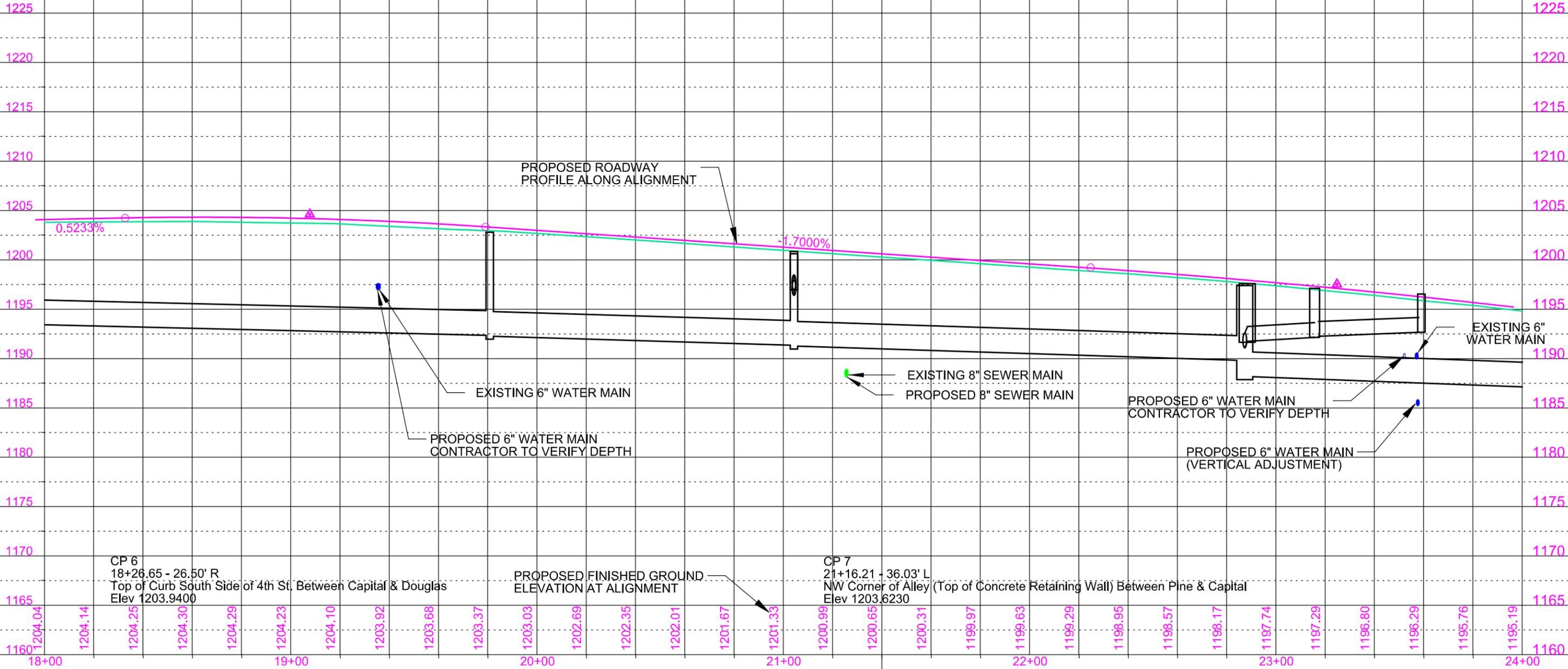
- STA 23+57.30 - 75.0'L TO 23+59.43 - 52.4'R  
128 LF - REMOVE WATER MAIN PIPE
- STA 23+57.48 - 55.2'L TO 23+64.87 - 55.0'L  
8 LF - REMOVE WATER MAIN PIPE
- STA 23+59.43 - 51.9'R  
1 EA - REMOVE GATE VALVE
- STA 23+62.43 - 55.1'L  
1 EA - REMOVE GATE VALVE
- STA 23+64.87 - 55.0'L  
1 EA - REMOVE HYDRANT



FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT ES 2014-003 PCN X03G	SHEET 23	TOTAL SHEETS 37
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NOTE: SEE SDDOT PLAN SET NH 0050(99)381 FOR ALL FINISH GRADE ELEVATIONS AND STORM SEWER INFORMATION. FINISH GRADE AND STORM SEWER INFORMATION SHOWN IN THIS PLAN SET IS FOR WATER MAIN AND SANITARY SEWER REFERENCE PURPOSES ONLY.



**FOR BIDDING PURPOSES ONLY**

**NOTE:**  
The contractor shall verify the existing 6" water depth at the following crossing locations.  
  
Crossing Locations:  
27+51.60 - 50.41' L

**NOTE:**  
Existing Lead Water Services Shall be Replaced with Copper.

25+49.01 - 44.17' R  
Install 48" Sanitary Sewer Manhole With Type A Frame & Lid (MH # 6)  
Rim = 1190.80  
IE N(8") = 1180.91  
IE S (8") = 1180.89

25+48.60 - 44.17' L to 25+49.01 - 44.17' R  
Install 8" - 89' PVC Sewer Pipe  
Match Existing Slope  
(Between Manhole & Existing Pipe)

Connect to Existing Sewer Main  
25+48.60 - 44.17' L  
25+49.01 - 44.17' R

Install 6" - PVC Water Main  
27+33.47 - 45.57' L to 27+51.58 - 45.34' L (19')  
27+51.58 - 45.34' L to 27+51.64 - 66.27' L (21')  
27+51.58 - 45.34' L to 27+66.74 - 20.94' R (73')  
27+66.45 - 43.53' R to 27+66.74 - 20.94' R (23')

Install Standard Fire Hydrant at the following locations:  
27+33.47 - 45.57' L

Install Gate Valve with Box  
Sta 27+46.31 - 45.36' L (6")  
Sta 27+51.64 - 66.27' L (6")

Connect to Existing Water Main  
27+51.64 - 66.27' L  
27+66.45 - 43.53' L

Install Pipe Bend, 45 Degree  
Sta 27+50.94 - 4.73' R (6")  
Sta 27+51.02 - 1.27' L (6")  
Sta 27+66.51 - 38.92' R (6")  
Sta 27+66.58 - 33.20' R (6")  
Sta 27+66.74 - 20.94' R (6")

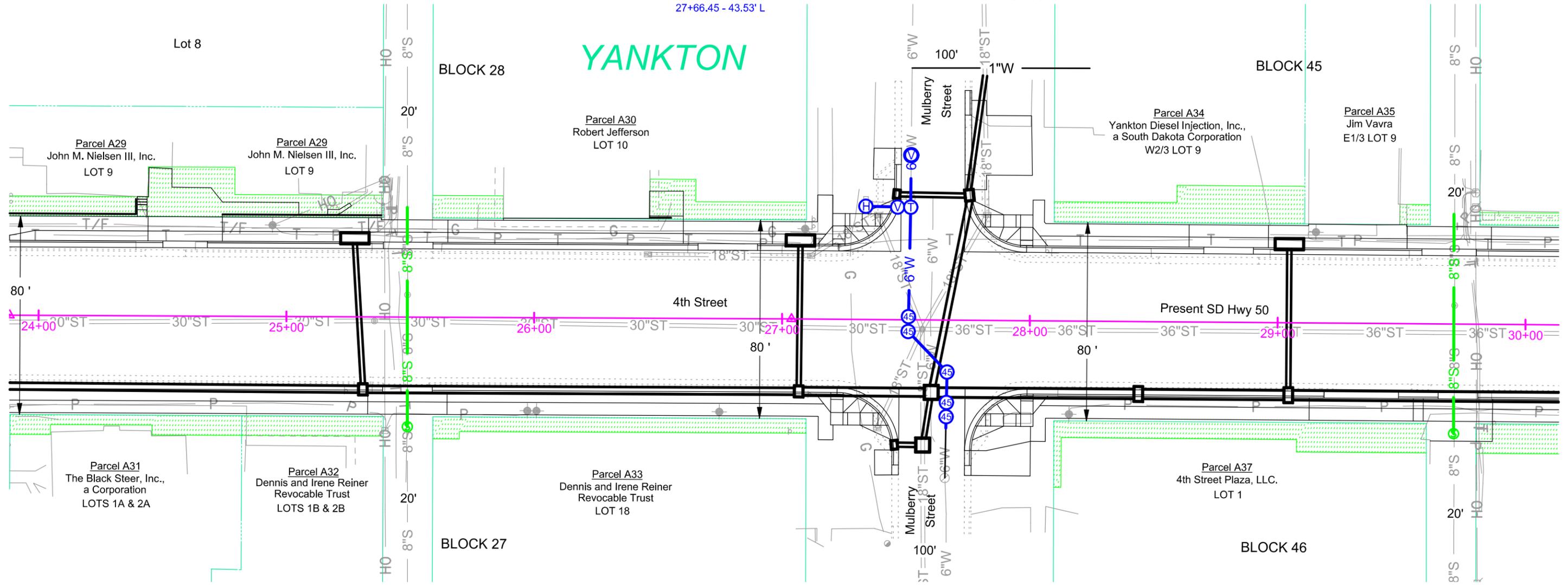
Install Pipe Tee  
Sta 27+51.58 - 45.34' L (6x6)

Install 6" Pipe Cap  
Sta 27+50.97 - 2.77' R  
Sta 27+59.93 - 2.77' R

Connect to Existing Sewer Main  
29+70.85 - 44.17' L  
29+71.33 - 44.17' R

29+71.33 - 44.17' R  
Install 48" Sanitary Sewer Manhole With Type A Frame & Lid (MH # 7)  
Rim = 1188.29  
IE N(8") = 1177.73  
IE S (8") = 1177.71

29+70.85 - 44.17' L to 29+71.33 - 44.17' R  
Install 8" - 89' PVC Sewer Pipe  
Match Existing Slope  
(Between Manhole & Existing Pipe)



**LOWER YANKTON ADDITION  
SEC 18 - T93N - R55W**

**SEWER REMOVALS:**  
STA 25+48.60 - 44.2' L TO 25+49.01 - 44.2' R  
89 LF - REMOVE SEWER MAIN PIPE  
  
STA 25+48.85 - 8.9' L  
1 EA - REMOVE MANHOLE

**WATER REMOVALS:**  
STA 27+33.47 - 45.6' L TO 27+51.59 - 49.2' L  
19 LF - REMOVE WATER MAIN PIPE  
  
STA 27+51.64 - 66.3' L TO 27+66.20 - 63.5' R  
143 LF - REMOVE WATER MAIN PIPE

**WATER REMOVALS:**  
STA 27+48.94 - 46.7' L  
1 EA - REMOVE GATE VALVE  
  
STA 27+51.59 - 49.2' L  
1 EA - REMOVE GATE VALVE  
  
STA 27+33.47 - 45.6' L  
1 EA - REMOVE HYDRANT

**SEWER REMOVALS:**  
STA 29+70.85 - 44.2' L TO 29+71.33 - 44.2' R  
89 LF - REMOVE SEWER MAIN PIPE  
  
STA 29+71.34 - 7.5' L  
1 EA - REMOVE MANHOLE





**FOR BIDDING PURPOSES ONLY**

**NOTE:**  
The contractor shall verify the existing water depth at the following crossing locations.

**Crossing Locations:**  
31+78.52 - 63.50' L (16")  
31+80.35 - 29.17' R (16")  
31+80.42 - 54.64' R (16")  
35+67.08 - 58.95' L (6")  
35+74.19 - 54.31' L (6")

Install 6" - PVC Water Main  
31+77.87 - 68.00' L to 31+98.33 - 68.00' L (21')

**NOTE:**  
Existing Lead Water Services Shall be Replaced with Copper.

Install Gate Valve with Box  
Sta 31+83.37 - 67.99' L (6")  
Connect to Existing Water Main  
31+77.87 - 68.00' L  
31+79.98 - 19.92' R  
31+80.71 - 38.26' L

Install - 1" Water Service  
31+78.54 - 59.88' L to 32+14.59 - 52.21' L (Each)

Install 16" - PVC Water Main  
31+79.98 - 19.92' R to 31+80.71 - 38.26' R (19')

1" Curb Stop with Box  
32+14.59 - 52.21' L

1" Corporation Stop with Tapping Saddle  
31+78.54 - 59.88' L

Reconnect Water Service  
32+14.59 - 52.21' L

Install Standard Fire Hydrant at the following locations:  
31+98.33 - 68.00' L

Install Pipe Bend, 45 Degree  
Sta 31+79.98 - 19.92' R (16")  
Sta 31+80.22 - 25.89' R (16")  
Sta 31+80.48 - 32.60' R (16")  
Sta 31+80.71 - 38.26' R (16")

Install Pipe Tee  
Sta 31+77.87 - 68.00' L (6x6)

Install 6" Pipe Cap  
Sta 31+81.17 - 51.91' L

Connect to Existing Sewer Main  
33+74.88 - 44.17' L  
33+76.00 - 44.17' R

33+76.00 - 44.17' R  
Install 48" Sanitary Sewer Manhole With Type A Frame & Lid (MH # 8)  
Rim = 1187.19  
IE N(8") = 1175.98  
IE S(8") = 1175.97

33+74.88 - 44.17' L to 33+76.00 - 44.17' R  
Install 8" - 89' PVC Sewer Pipe  
Match Existing Slope  
(Between Manhole & Existing Pipe)

Install 6" Water Main  
35+63.17 - 72.58' L to 35+67.25 - 54.07' L (21")  
35+67.25 - 54.07' L to 35+60.99 - 51.80' R (107")  
35+67.25 - 54.07' L to 35+98.92 - 55.23' L (32')

Install Standard Fire Hydrant at the following locations:  
35+98.92 - 55.23' L

Install Gate Valve with Box  
Sta 35+63.11 - 68.33' L (6")  
Sta 35+72.65 - 54.20' L (6")

Connect to Existing Water Main  
35+60.99 - 51.80' R  
35+63.17 - 72.58' L

Install - 1" Water Service  
34+14.58 - 48.32' L to 35+67.25 - 54.07' L (Each)  
35+35.87 - 52.28' R to 35+60.99 - 51.80' R (Each)  
35+63.11 - 68.33' L to 36+14.41 - 69.82' L (Each)

Install Pipe Bend, 45 Degree  
Sta 35+61.87 - 38.62' R (6")  
Sta 35+62.26 - 32.84' R (6")  
Sta 35+62.78 - 25.09' R (6")  
Sta 35+63.16 - 19.44' R (6")  
Sta 35+63.11 - 68.33' L (6")  
Sta 35+66.88 - 64.79' L (6")

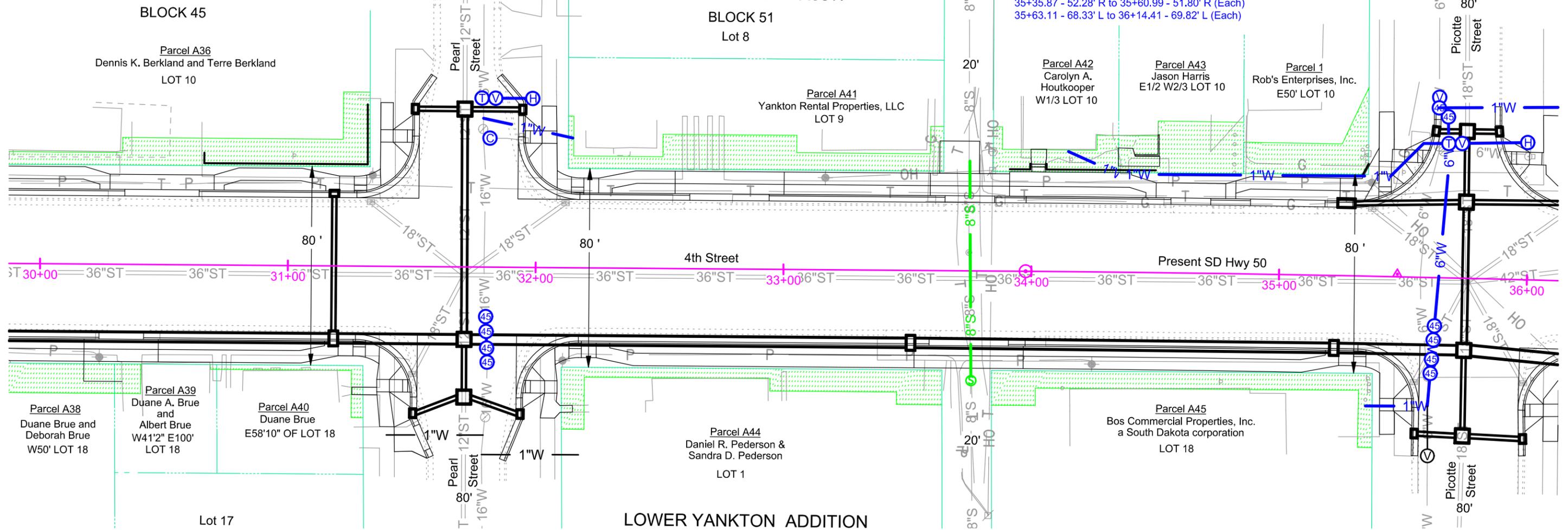
Install 6" Pipe Cap  
Sta 35+57.11 - 2.04' R  
Sta 35+64.32 - 2.04' R

Install Pipe Tee  
Sta 35+67.25 - 54.07' L (6x6)

1" Curb Stop with Box  
34+14.58 - 48.32' L  
35+35.87 - 52.28' R  
36+14.41 - 69.82' L

1" Corporation Stop with Tapping Saddle  
35+67.25 - 54.07' L  
35+60.99 - 51.80' R  
35+63.11 - 68.33' L

Reconnect Water Service  
34+14.58 - 48.32' L  
35+35.87 - 52.28' R  
36+14.41 - 69.82' L



LOWER YANKTON ADDITION  
SEC 18 - T93N - R55W

LOWER YANKTON ADDITION  
SEC 18 - T93N - R55W

BLOCK 50

**YANKTON**

**WATER REMOVALS:**  
STA 31+79.98 - 19.9'R TO 31+80.71 - 38.3'R  
19 LF - REMOVE WATER MAIN PIPE  
  
STA 31+81.17 - 51.9'L  
1 EA - REMOVE GATE VALVE  
  
STA 31+81.17 - 51.9'L TO 31+94.00 - 51.2'L  
13 LF - REMOVE WATER MAIN PIPE  
  
STA 31+94.00 - 51.2'L  
1 EA - REMOVE HYDRANT

**SEWER REMOVALS:**  
STA 33+74.88 - 44.2'L TO 33+76.00 - 44.2'R  
89 LF - REMOVE SEWER MAIN PIPE

STA 33+74.79 - 7.4' L  
1 EA - REMOVE MANHOLE

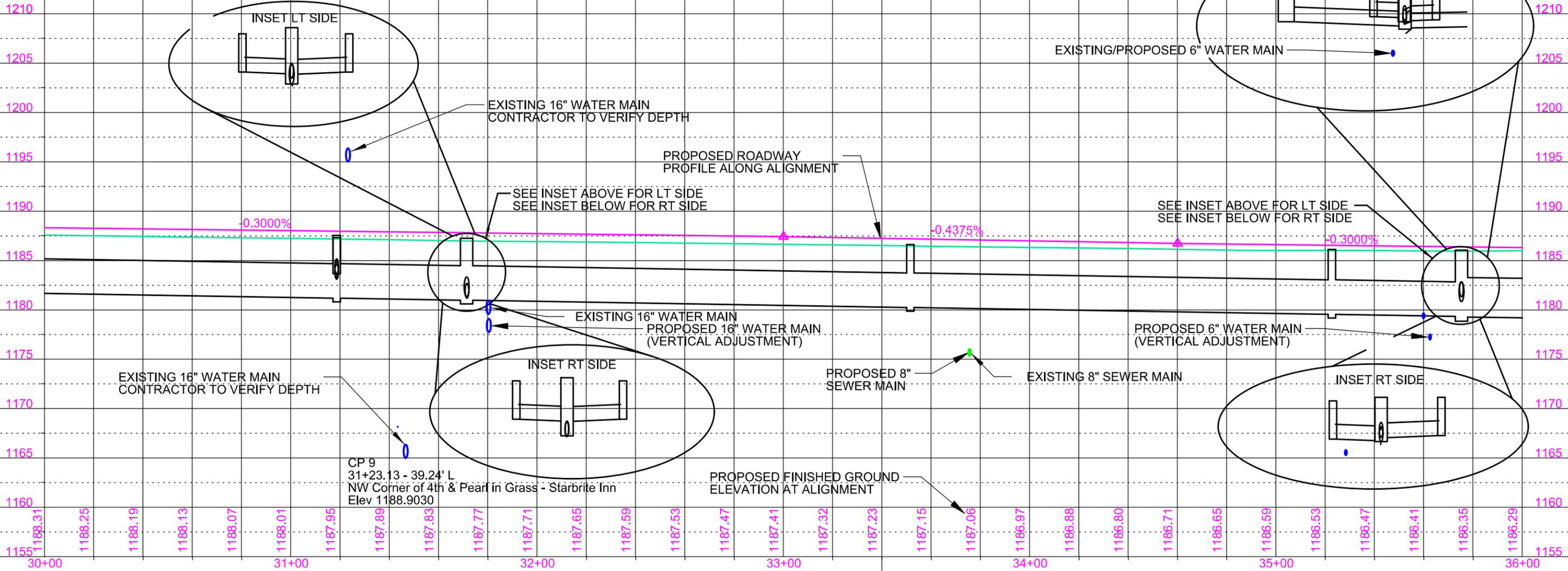
**WATER REMOVALS:**  
STA 35+60.99 - 51.8'R TO 35+63.17 - 72.6'L  
126 LF - REMOVE WATER MAIN PIPE  
  
STA 35+63.51 - 50.8'L TO 35+99.30 - 49.6'L  
36 LF - REMOVE WATER MAIN PIPE  
  
STA 35+99.31 - 49.6'L  
1 EA - REMOVE HYDRANT  
  
STA 35+60.94 - 40.0'R  
1 EA - REMOVE GATE VALVE  
  
STA 35+63.35 - 52.8'L  
1 EA - REMOVE GATE VALVE  
  
STA 35+65.24 - 50.8'L  
1 EA - REMOVE GATE VALVE



FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT ES 2014-003 PCN X03G	SHEET 27	TOTAL SHEETS 37
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NOTE: SEE SDDOT PLAN SET NH 0050(99)381 FOR ALL FINISH GRADE ELEVATIONS AND STORM SEWER INFORMATION. FINISH GRADE AND STORM SEWER INFORMATION SHOWN IN THIS PLAN SET IS FOR WATER MAIN AND SANITARY SEWER REFERENCE PURPOSES ONLY.



FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT ES 2014-003 PCN X03G	SHEET 28	TOTAL SHEETS 37
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37+76.57 - 47.05' L to 37+76.51 - 52.04' R  
 Install 8" - 100' PVC Sewer Pipe  
 Match Existing Slope  
 (Between Existing Manhole & Existing Pipe)

Connect to Existing Sewer Main  
 37+76.57 - 47.05' L

Connect to Existing Manhole  
 37+76.51 - 52.04' R

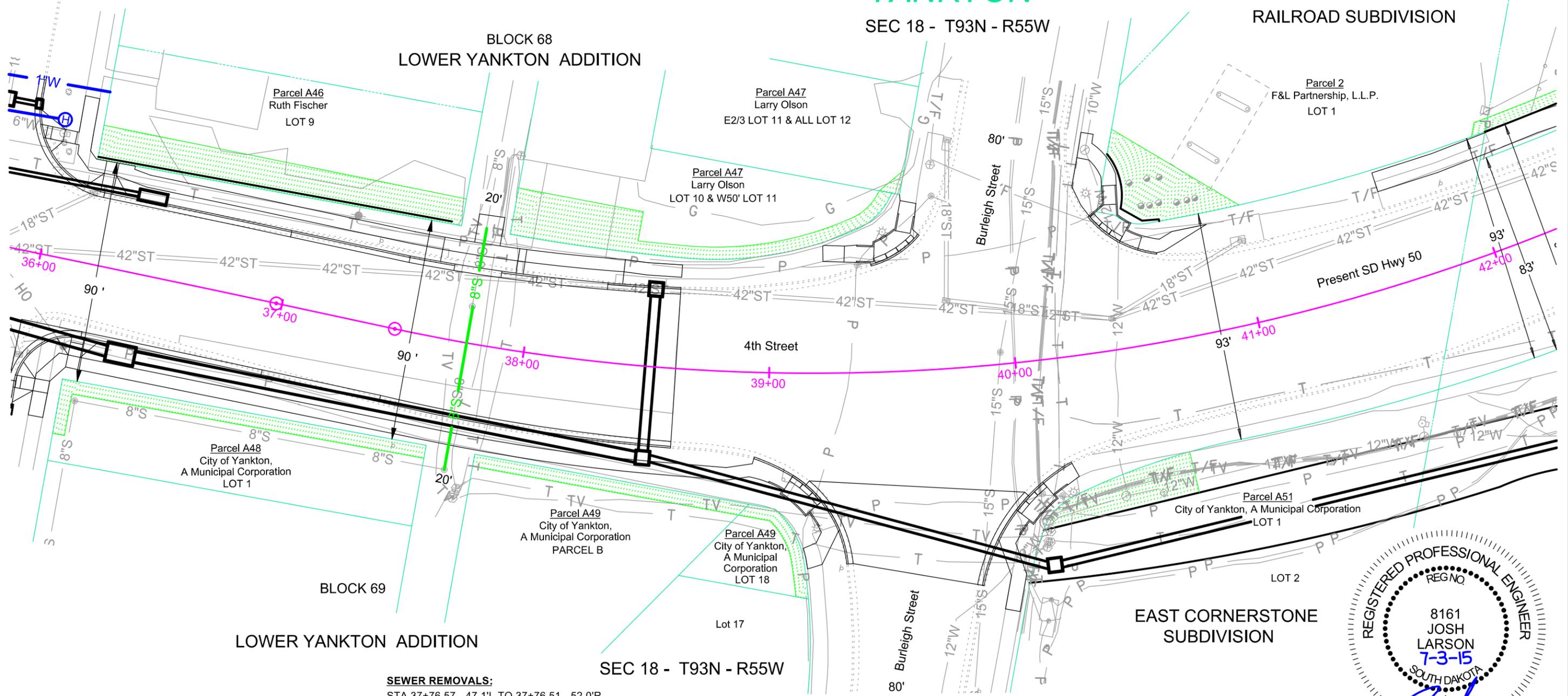


# YANKTON

SEC 18 - T93N - R55W

RAILROAD SUBDIVISION

BLOCK 68  
 LOWER YANKTON ADDITION



BLOCK 69  
 LOWER YANKTON ADDITION

SEC 18 - T93N - R55W

EAST CORNERSTONE  
 SUBDIVISION

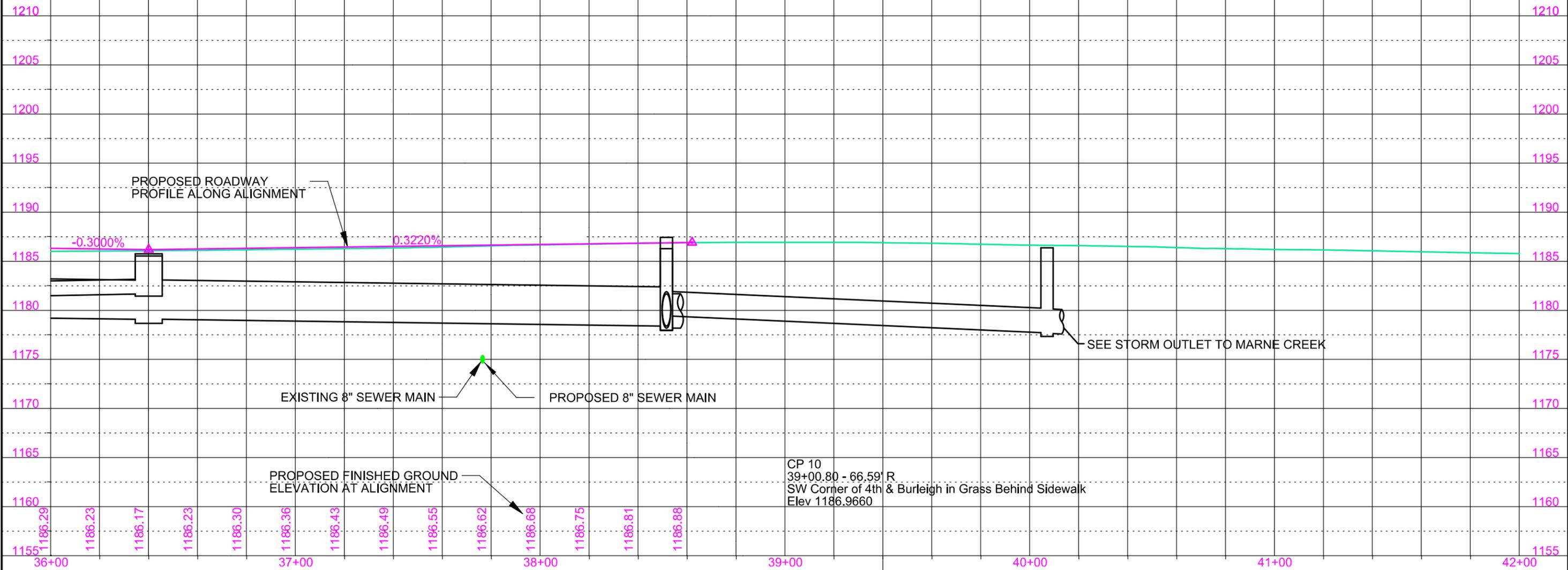
**SEWER REMOVALS:**  
 STA 37+76.57 - 47.1'L TO 37+76.51 - 52.0'R  
 100 LF - REMOVE SEWER MAIN PIPE  
 STA 37+76.24 - 14.9' L  
 1 EA - REMOVE MANHOLE



FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	ES 2014-003 PCN X03G	29	37

NOTE: SEE SDDOT PLAN SET NH 0050(99)381 FOR ALL FINISH GRADE ELEVATIONS AND STORM SEWER INFORMATION. FINISH GRADE AND STORM SEWER INFORMATION SHOWN IN THIS PLAN SET IS FOR WATER MAIN AND SANITARY SEWER REFERENCE PURPOSES ONLY.

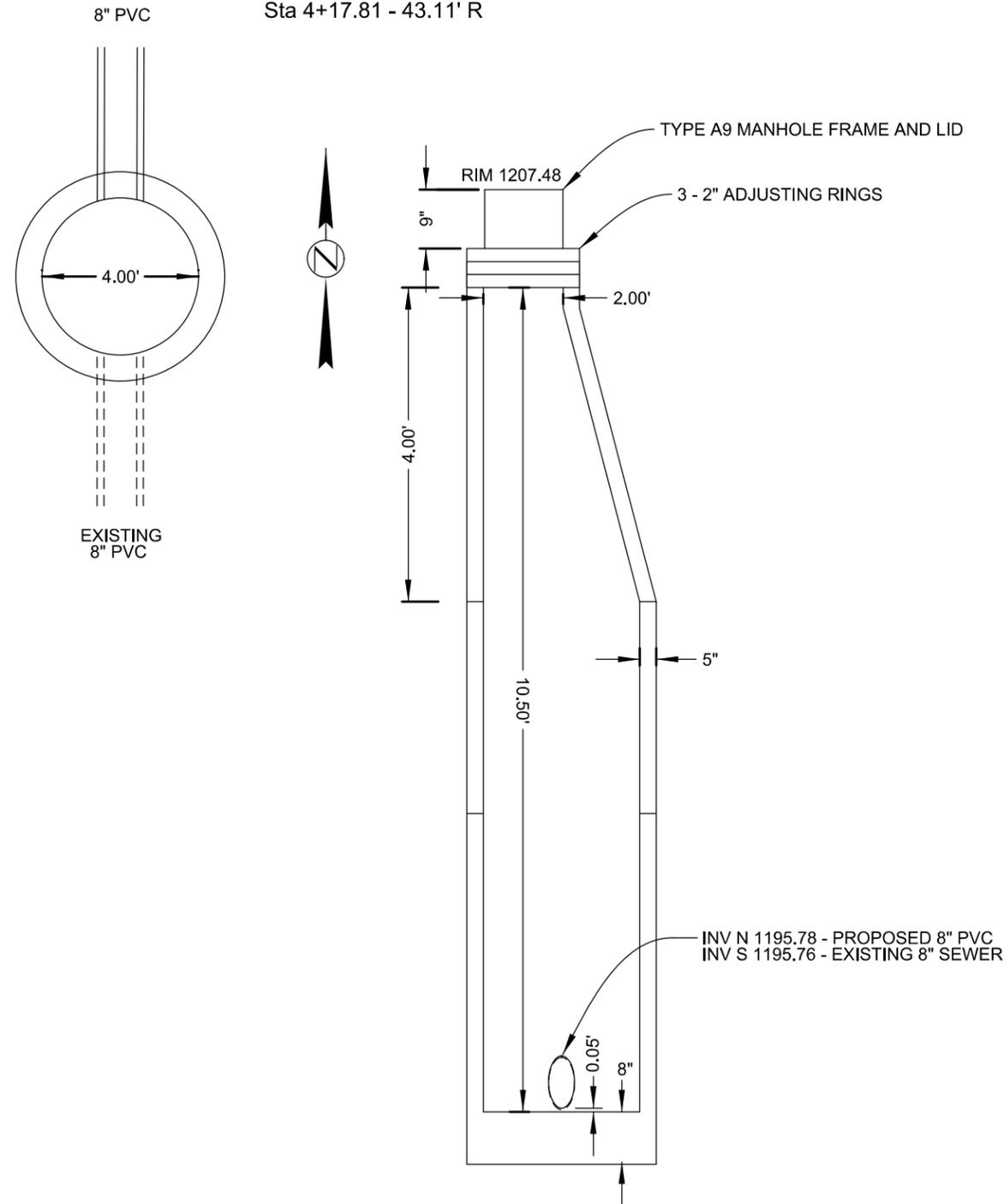


FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT ES 2014-003 PCN X03G	SHEET 30	TOTAL SHEETS 37
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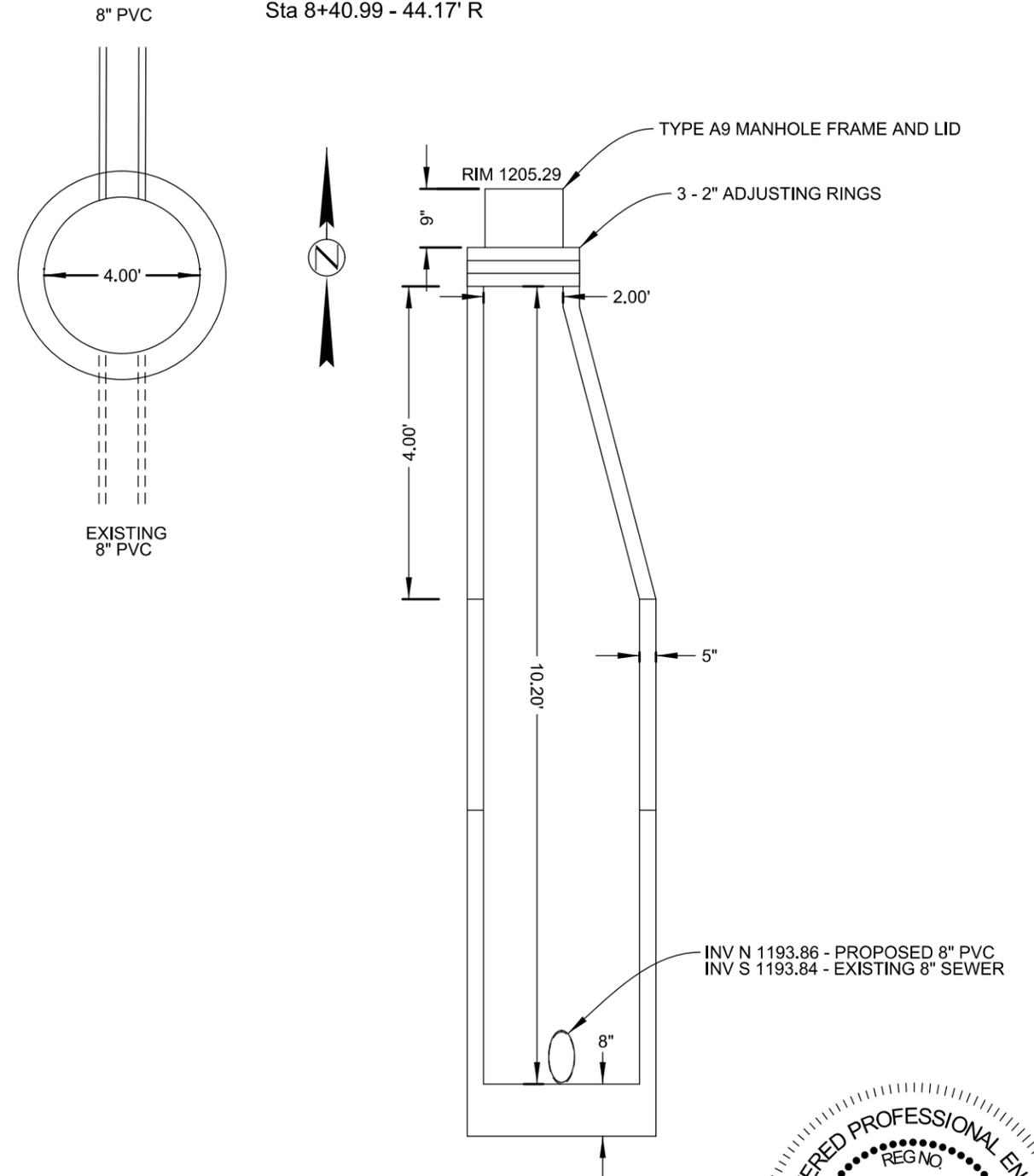
### SANITARY SEWER MANHOLE #1

Sta 4+17.81 - 43.11' R



### SANITARY SEWER MANHOLE #2

Sta 8+40.99 - 44.17' R



- NOTES:
- MANHOLES SHALL BE ORDERED WITH THE INVERTS PREFORMED AND WITHOUT PREFORMED FLOW LINES.
  - NEW SEWER PIPE SHALL CONNECT TO MANHOLES WITH BOOTS.
  - EXISTING SEWER PIPE CONNECTION SHALL BE GROUTED TO THE NEW MANHOLES.
  - THE MANHOLE FLOORS SHALL BE POURED AFTER THE PIPES ARE LAYED. (SEE MANHOLE BENCH AND INVERT DETAIL)
  - EXTERNAL JOINT SEALS SHALL BE INSTALLED ON ALL JOINTS (INCIDENTAL TO MANHOLE)
  - MANHOLE SHALL HAVE EXTERNAL FRAME SEAL INSTALLED (EXTERNAL MANHOLE SEAL)

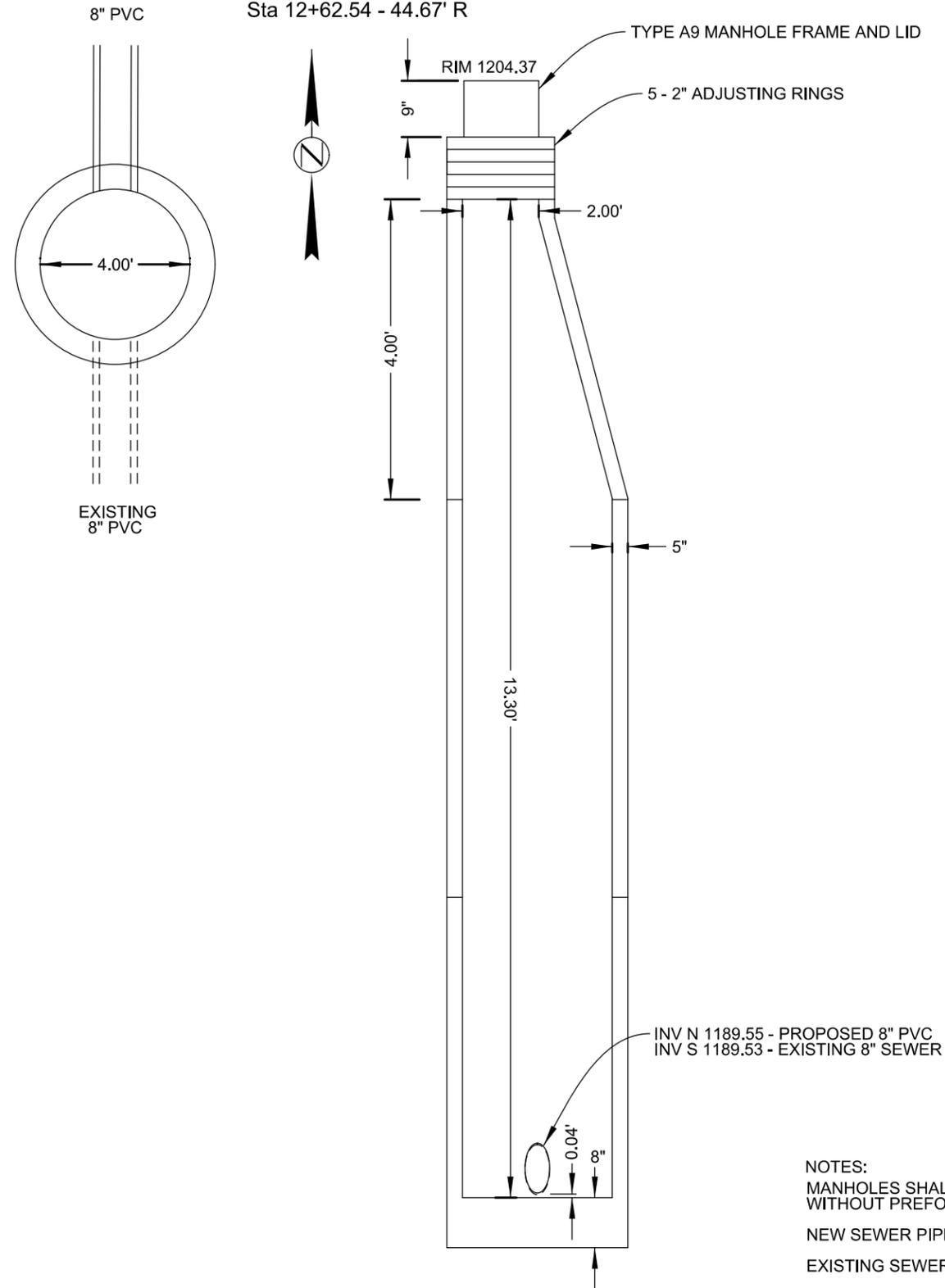


FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	ES 2014-003 PCN X03G	31	37

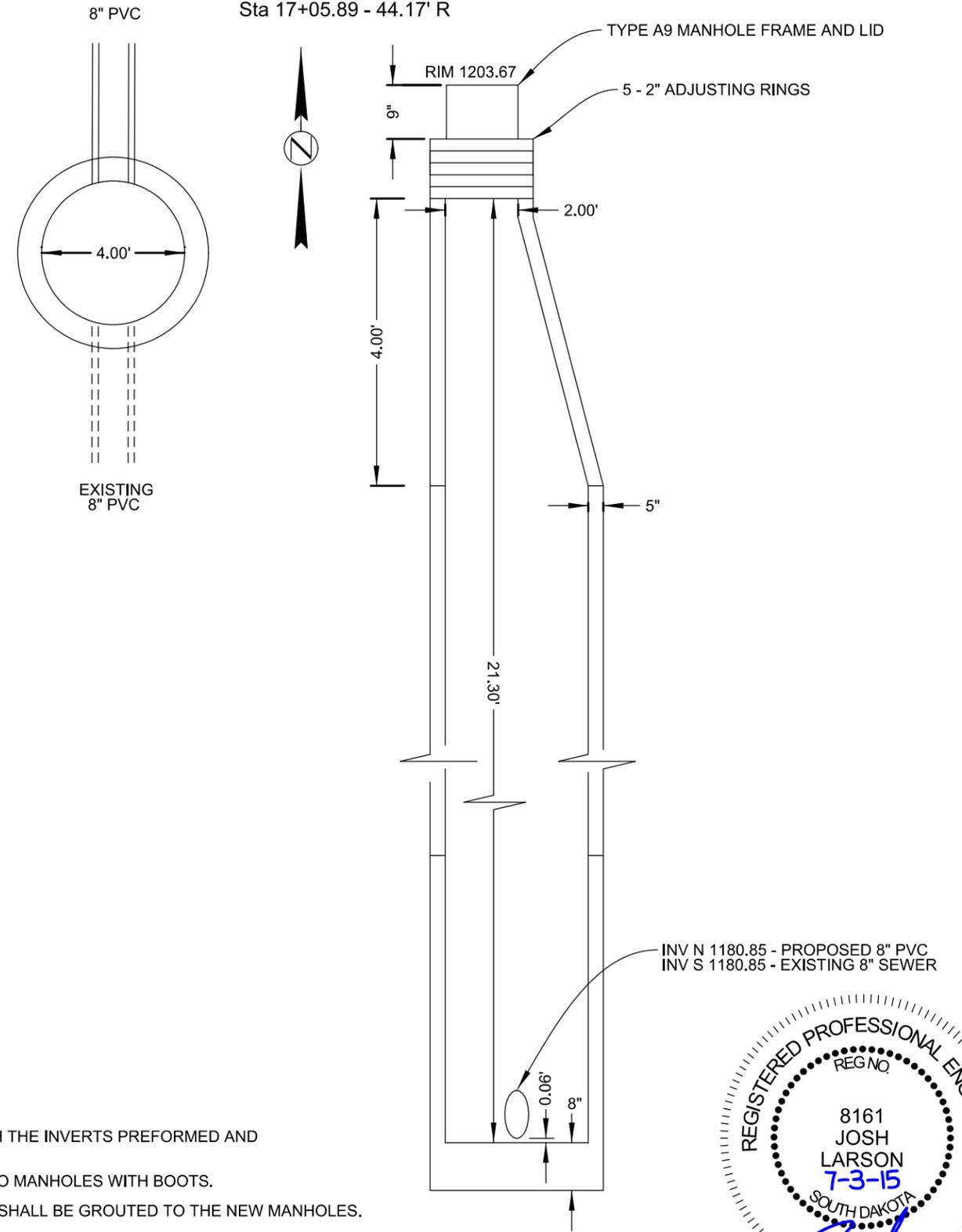
### SANITARY SEWER MANHOLE #3

Sta 12+62.54 - 44.67' R



### SANITARY SEWER MANHOLE #4

Sta 17+05.89 - 44.17' R



- NOTES:
- MANHOLES SHALL BE ORDERED WITH THE INVERTS PREFORMED AND WITHOUT PREFORMED FLOW LINES.
  - NEW SEWER PIPE SHALL CONNECT TO MANHOLES WITH BOOTS.
  - EXISTING SEWER PIPE CONNECTION SHALL BE GROUTED TO THE NEW MANHOLES.
  - THE MANHOLE FLOORS SHALL BE POURED AFTER THE PIPES ARE LAYED. (SEE MANHOLE BENCH AND INVERT DETAIL)
  - EXTERNAL JOINT SEALS SHALL BE INSTALLED ON ALL JOINTS (INCIDENTAL TO MANHOLE)
  - MANHOLE SHALL HAVE EXTERNAL FRAME SEAL INSTALLED (EXTERNAL MANHOLE SEAL)

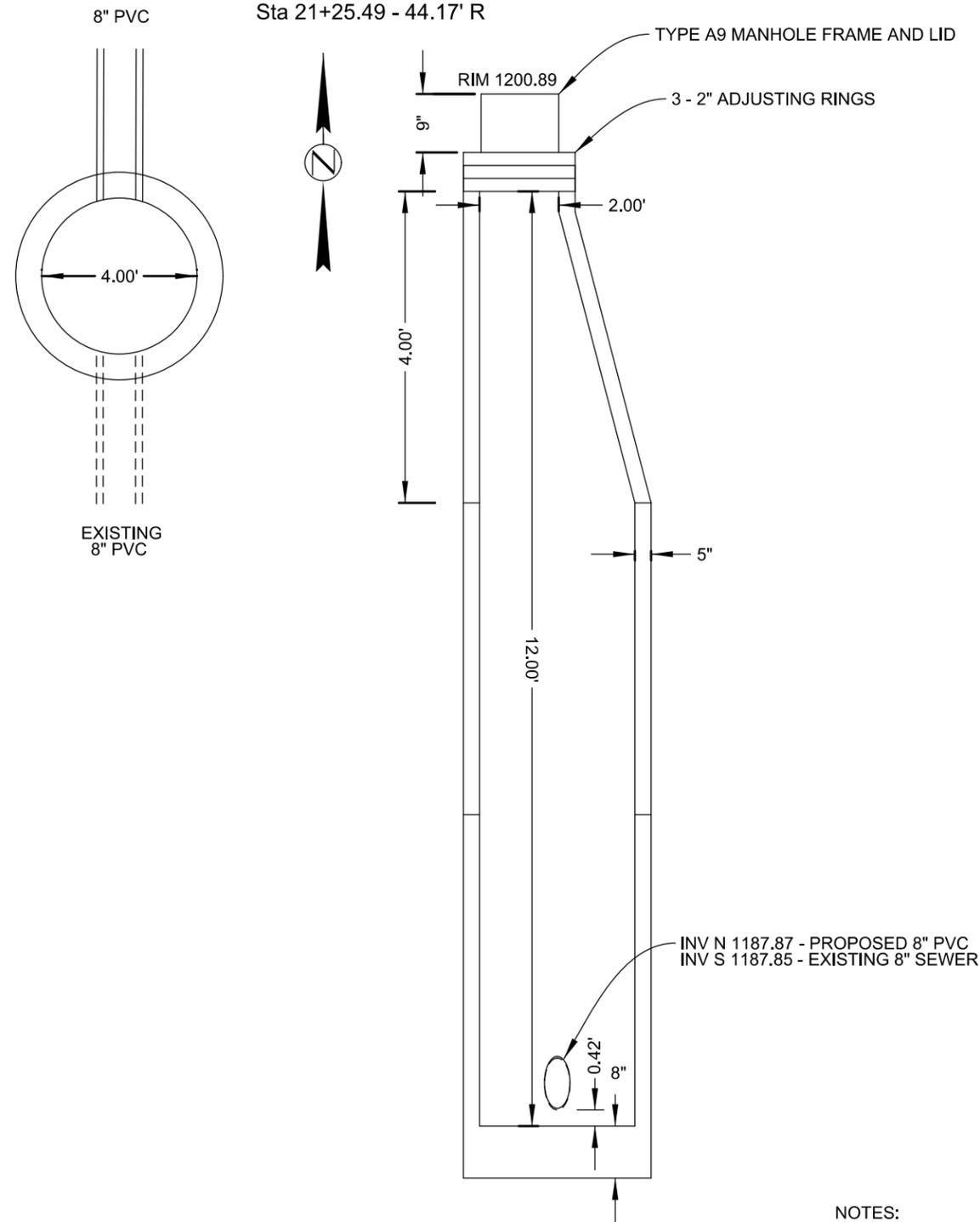


FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	ES 2014-003 PCN X03G	32	37

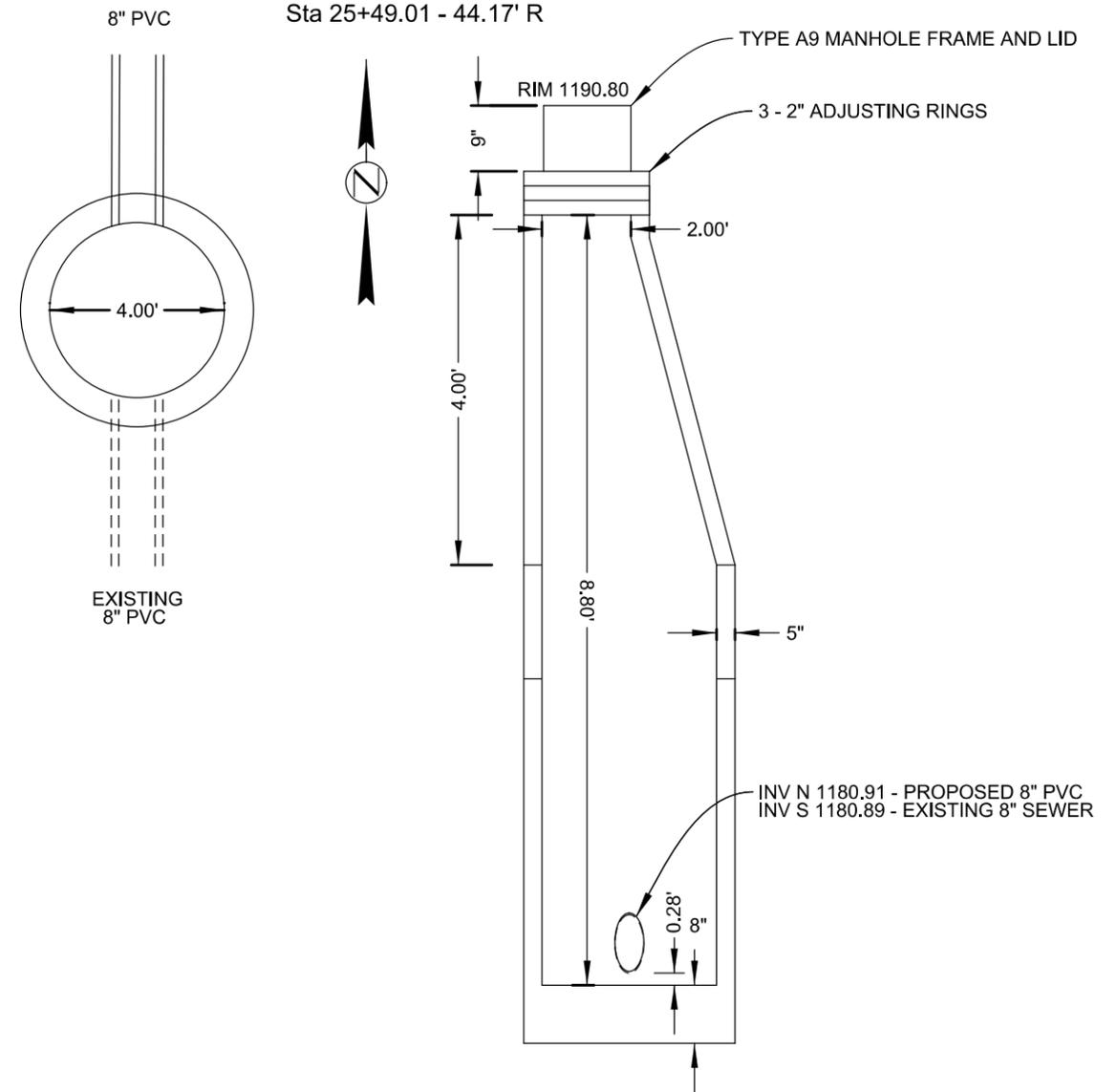
### SANITARY SEWER MANHOLE #5

Sta 21+25.49 - 44.17' R



### SANITARY SEWER MANHOLE #6

Sta 25+49.01 - 44.17' R



- NOTES:
- MANHOLES SHALL BE ORDERED WITH THE INVERTS PREFORMED AND WITHOUT PREFORMED FLOW LINES.
  - NEW SEWER PIPE SHALL CONNECT TO MANHOLES WITH BOOTS.
  - EXISTING SEWER PIPE CONNECTION SHALL BE GROUTED TO THE NEW MANHOLES.
  - THE MANHOLE FLOORS SHALL BE POURED AFTER THE PIPES ARE LAYED. (SEE MANHOLE BENCH AND INVERT DETAIL)
  - EXTERNAL JOINT SEALS SHALL BE INSTALLED ON ALL JOINTS (INCIDENTAL TO MANHOLE)
  - MANHOLE SHALL HAVE EXTERNAL FRAME SEAL INSTALLED (EXTERNAL MANHOLE SEAL)

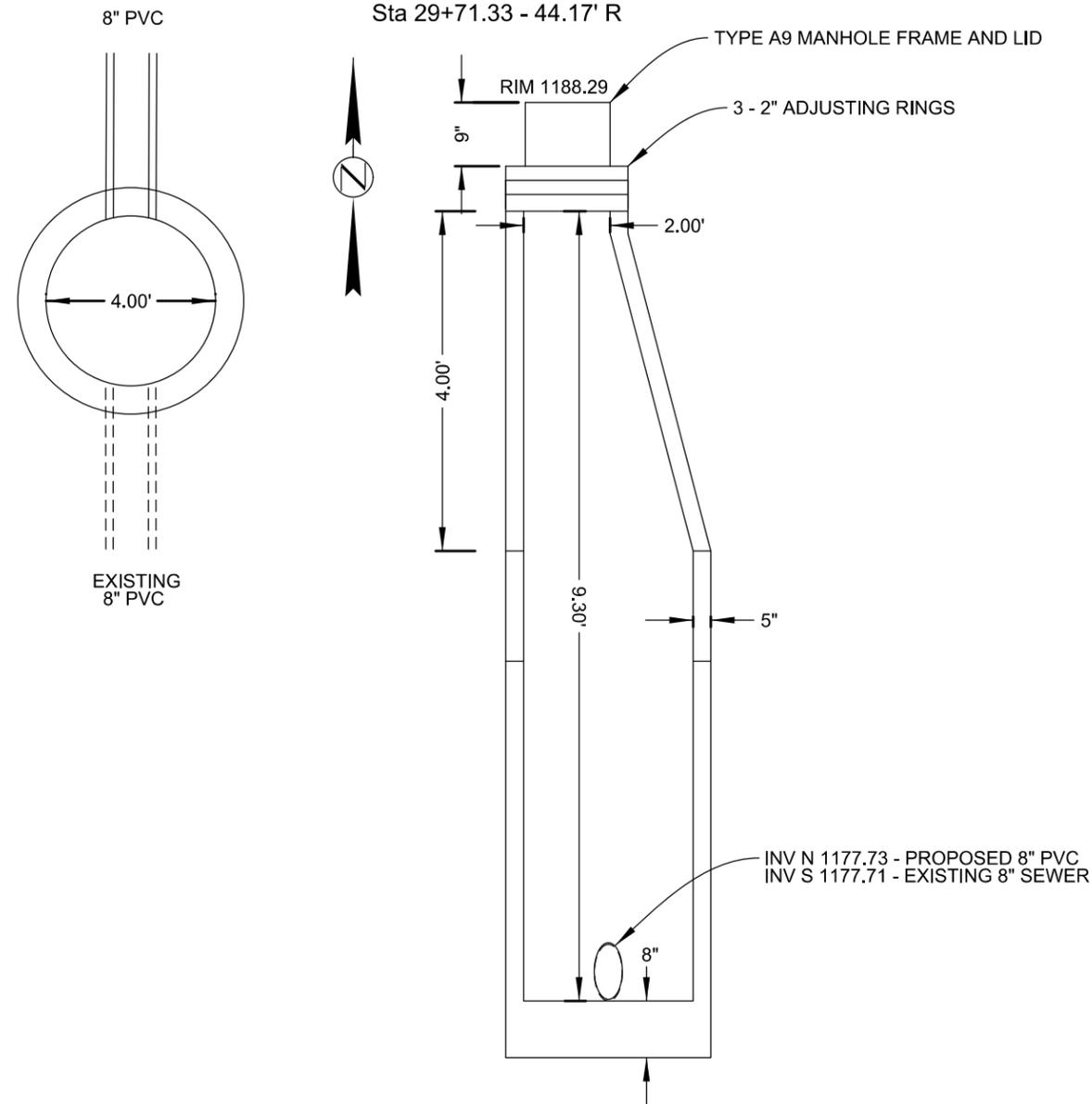


FOR BIDDING PURPOSES ONLY

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	ES 2014-003 PCN X03G	33	37

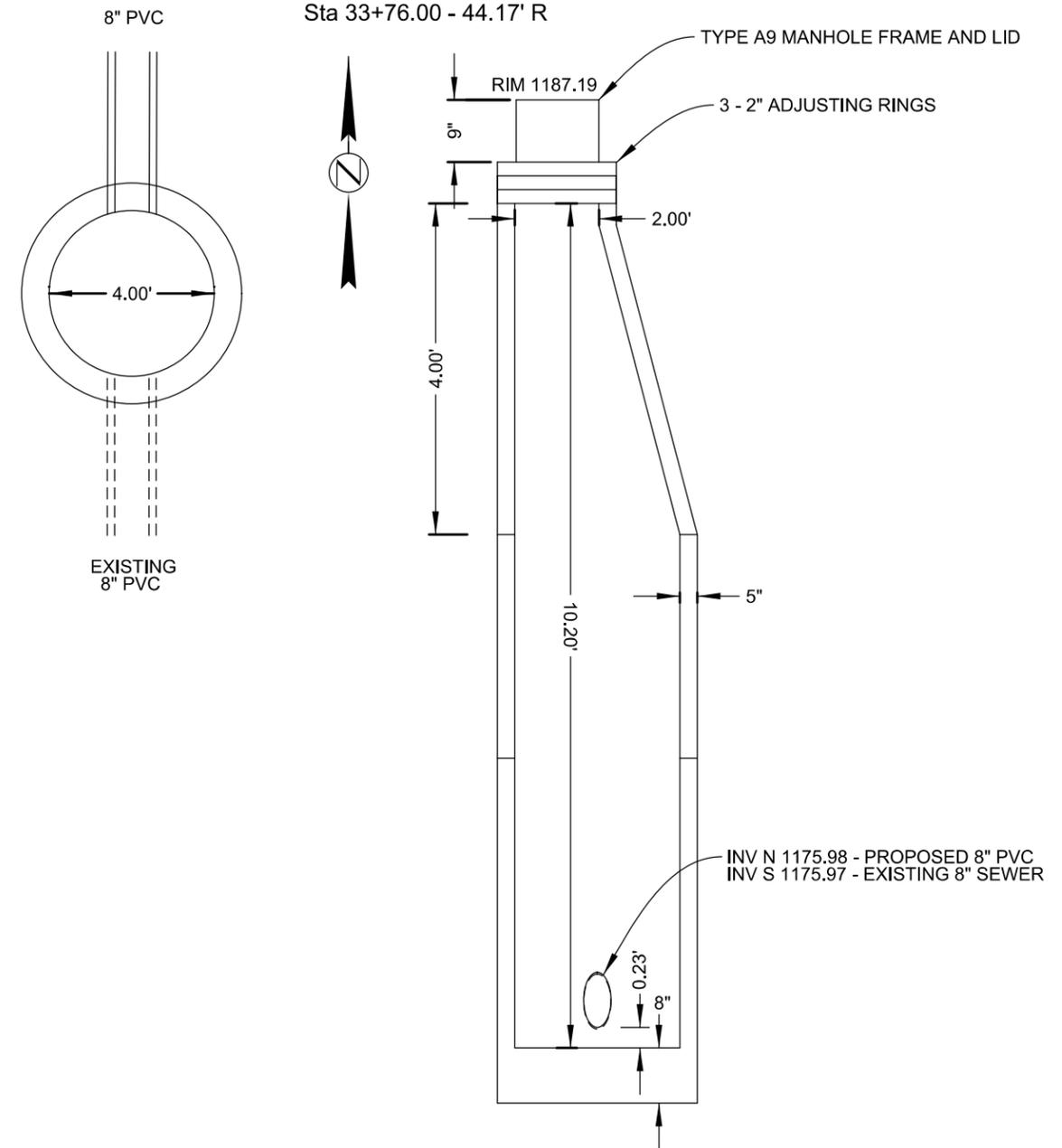
### SANITARY SEWER MANHOLE #7

Sta 29+71.33 - 44.17' R



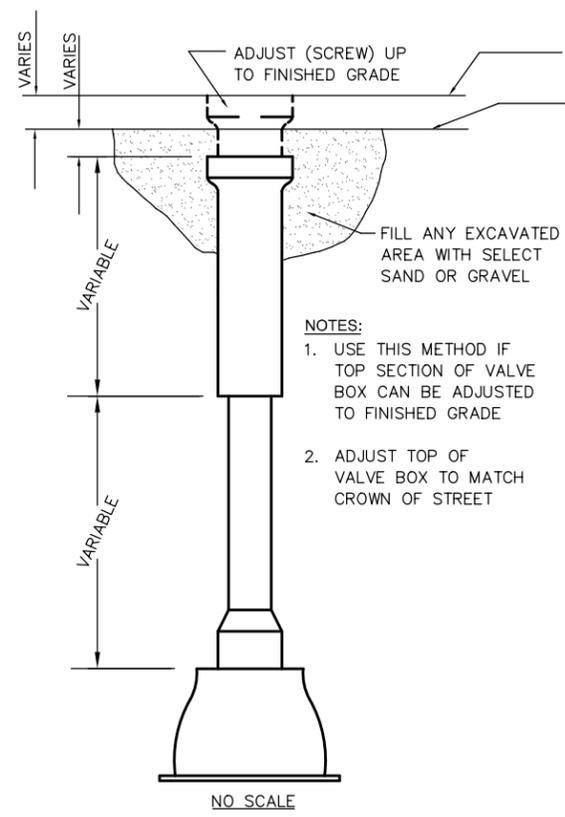
### SANITARY SEWER MANHOLE #8

Sta 33+76.00 - 44.17' R



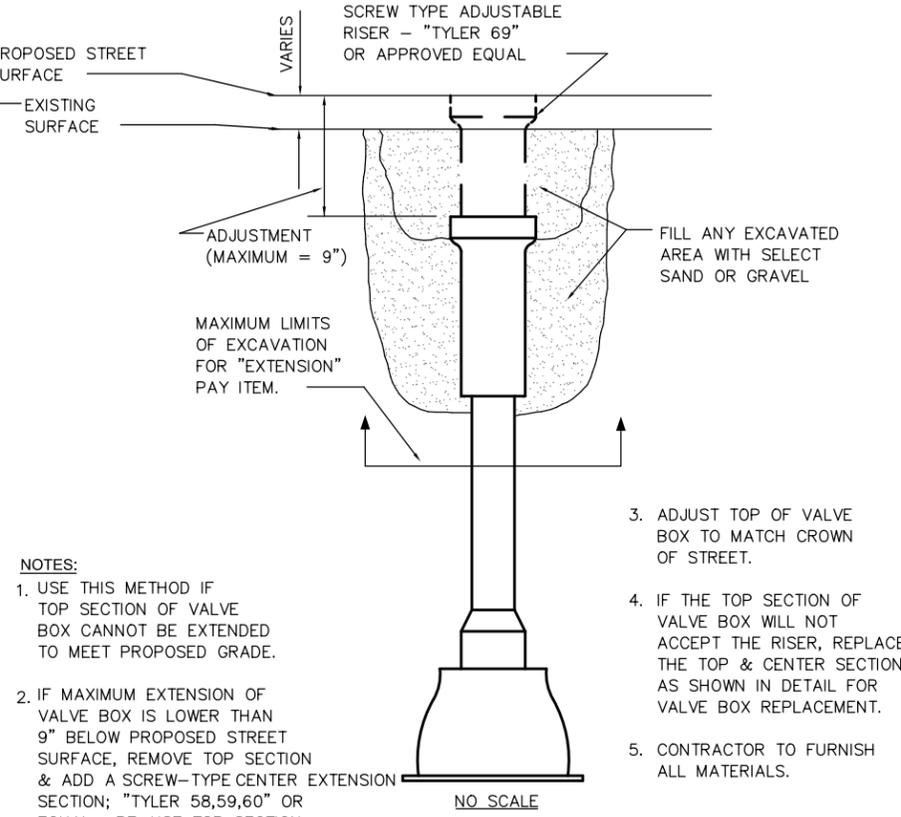
- NOTES:
- MANHOLES SHALL BE ORDERED WITH THE INVERTS PREFORMED AND WITHOUT PREFORMED FLOW LINES.
  - NEW SEWER PIPE SHALL CONNECT TO MANHOLES WITH BOOTS.
  - EXISTING SEWER PIPE CONNECTION SHALL BE GROUTED TO THE NEW MANHOLES.
  - THE MANHOLE FLOORS SHALL BE POURED AFTER THE PIPES ARE LAYED. (SEE MANHOLE BENCH AND INVERT DETAIL)
  - EXTERNAL JOINT SEALS SHALL BE INSTALLED ON ALL JOINTS (INCIDENTAL TO MANHOLE)
  - MANHOLE SHALL HAVE EXTERNAL FRAME SEAL INSTALLED (EXTERNAL MANHOLE SEAL)





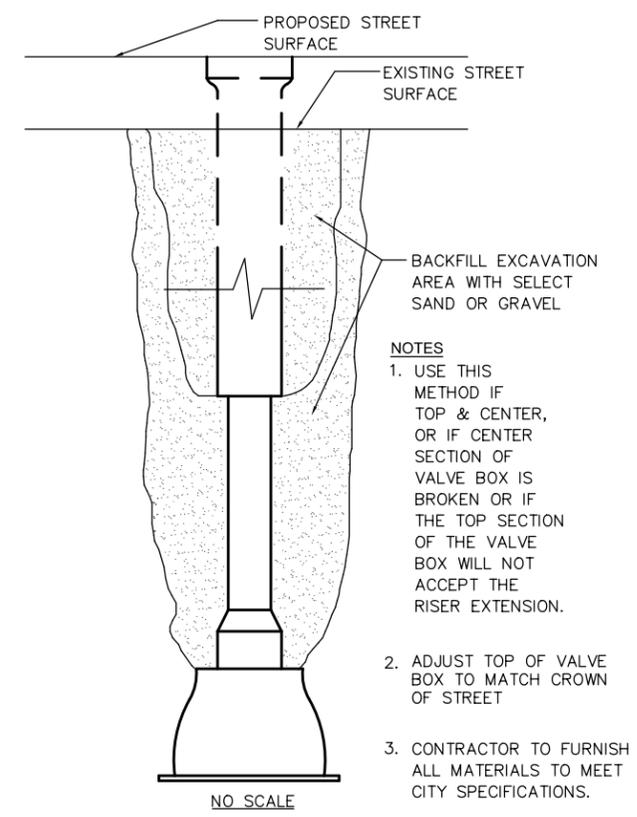
- NOTES:**
1. USE THIS METHOD IF TOP SECTION OF VALVE BOX CAN BE ADJUSTED TO FINISHED GRADE
  2. ADJUST TOP OF VALVE BOX TO MATCH CROWN OF STREET

VALVE BOX ADJUSTMENT



- NOTES:**
1. USE THIS METHOD IF TOP SECTION OF VALVE BOX CANNOT BE EXTENDED TO MEET PROPOSED GRADE.
  2. IF MAXIMUM EXTENSION OF VALVE BOX IS LOWER THAN 9" BELOW PROPOSED STREET SURFACE, REMOVE TOP SECTION & ADD A SCREW-TYPE CENTER EXTENSION; "TYLER 58,59,60" OR EQUAL. RE-USE TOP SECTION.
  3. ADJUST TOP OF VALVE BOX TO MATCH CROWN OF STREET.
  4. IF THE TOP SECTION OF VALVE BOX WILL NOT ACCEPT THE RISER, REPLACE THE TOP & CENTER SECTION AS SHOWN IN DETAIL FOR VALVE BOX REPLACEMENT.
  5. CONTRACTOR TO FURNISH ALL MATERIALS.

VALVE BOX EXTENSION  
(OR REPLACEMENT OF TOP SECTION)

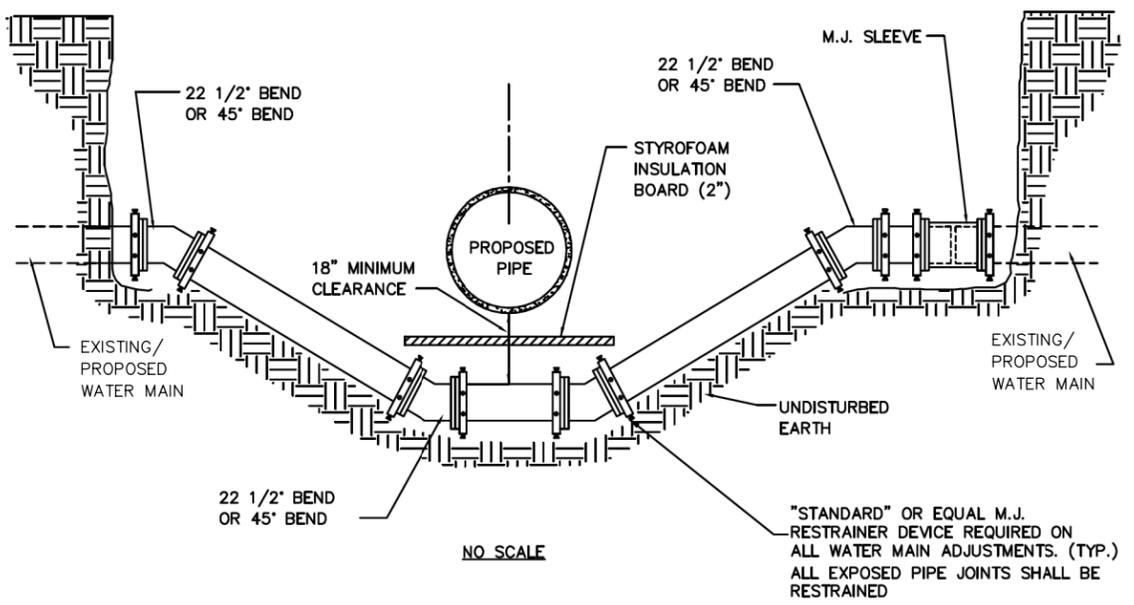


- NOTES:**
1. USE THIS METHOD IF TOP & CENTER, OR IF CENTER SECTION OF VALVE BOX IS BROKEN OR IF THE TOP SECTION OF THE VALVE BOX WILL NOT ACCEPT THE RISER EXTENSION.
  2. ADJUST TOP OF VALVE BOX TO MATCH CROWN OF STREET
  3. CONTRACTOR TO FURNISH ALL MATERIALS TO MEET CITY SPECIFICATIONS.

VALVE BOX INSTALLATION

VALVE BOX ADJUSTMENT / REPLACEMENT

WATER MAIN ADJUSTMENT

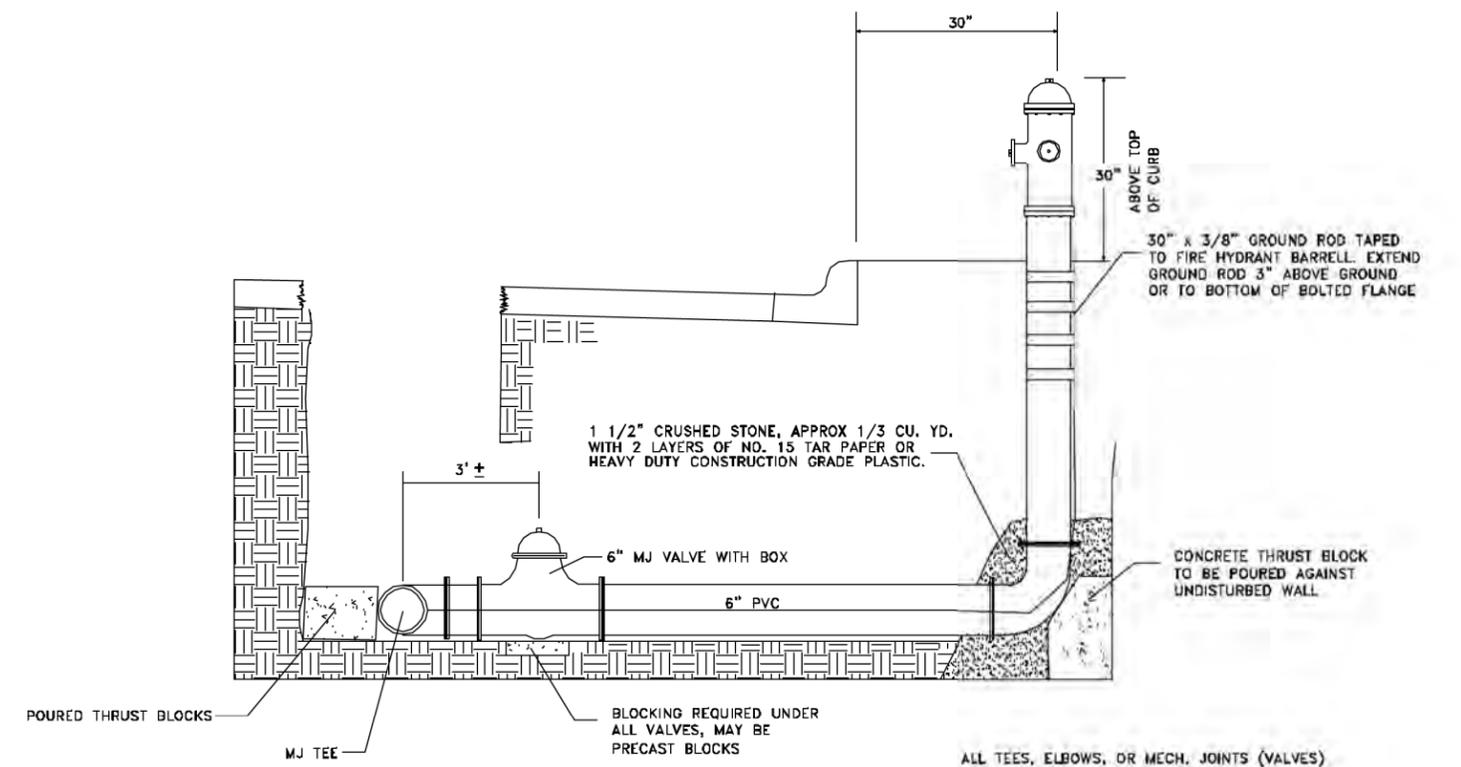


NO SCALE

"STANDARD" OR EQUAL M.J. RESTRAINER DEVICE REQUIRED ON ALL WATER MAIN ADJUSTMENTS. (TYP.) ALL EXPOSED PIPE JOINTS SHALL BE RESTRAINED

**NOTE:**  
THE PIPE, FITTINGS AND RESTRAINER DEVICES SHALL BE BID AS SEPARATE ITEMS FROM THE WATER MAIN ADJUSTMENT.

HYDRANT CONNECTION

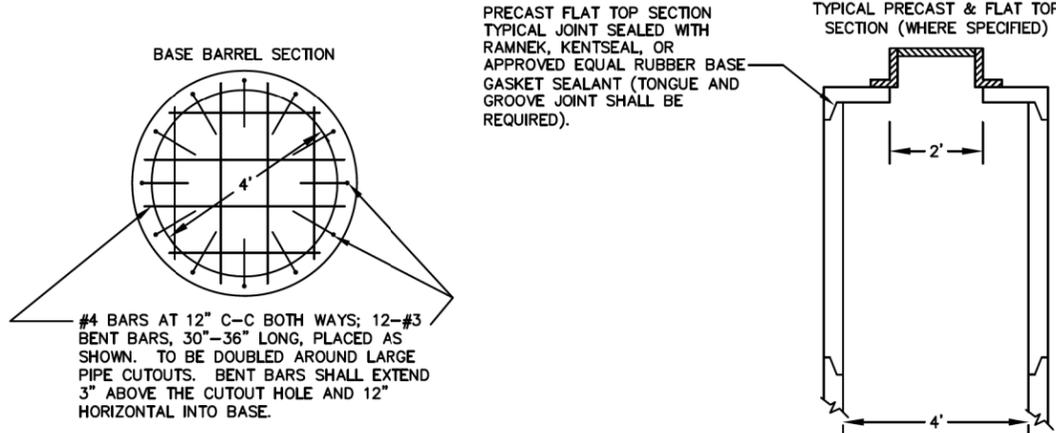
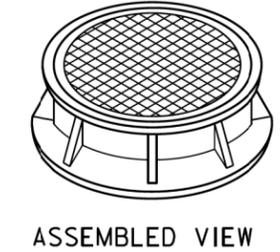
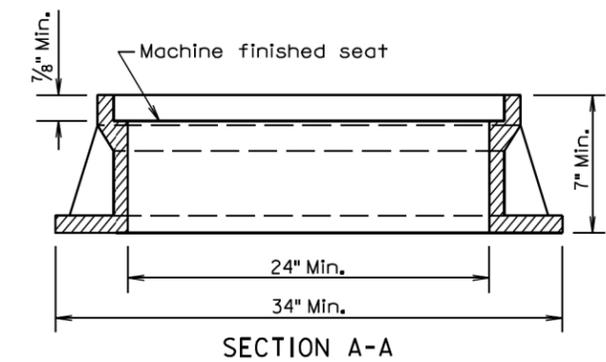
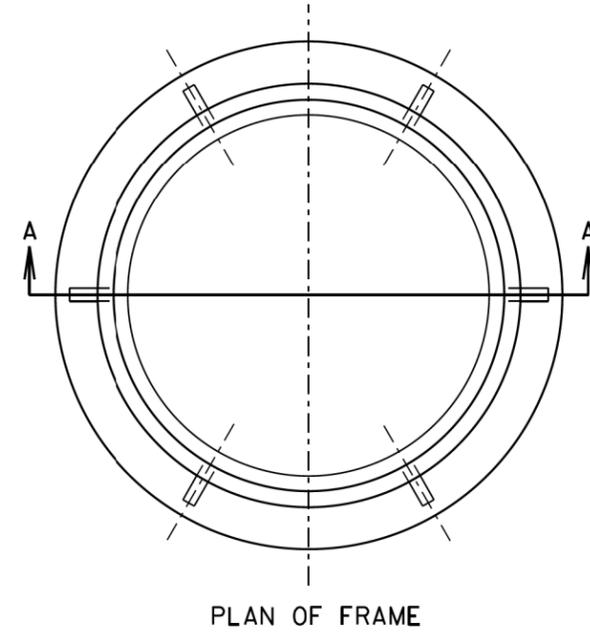
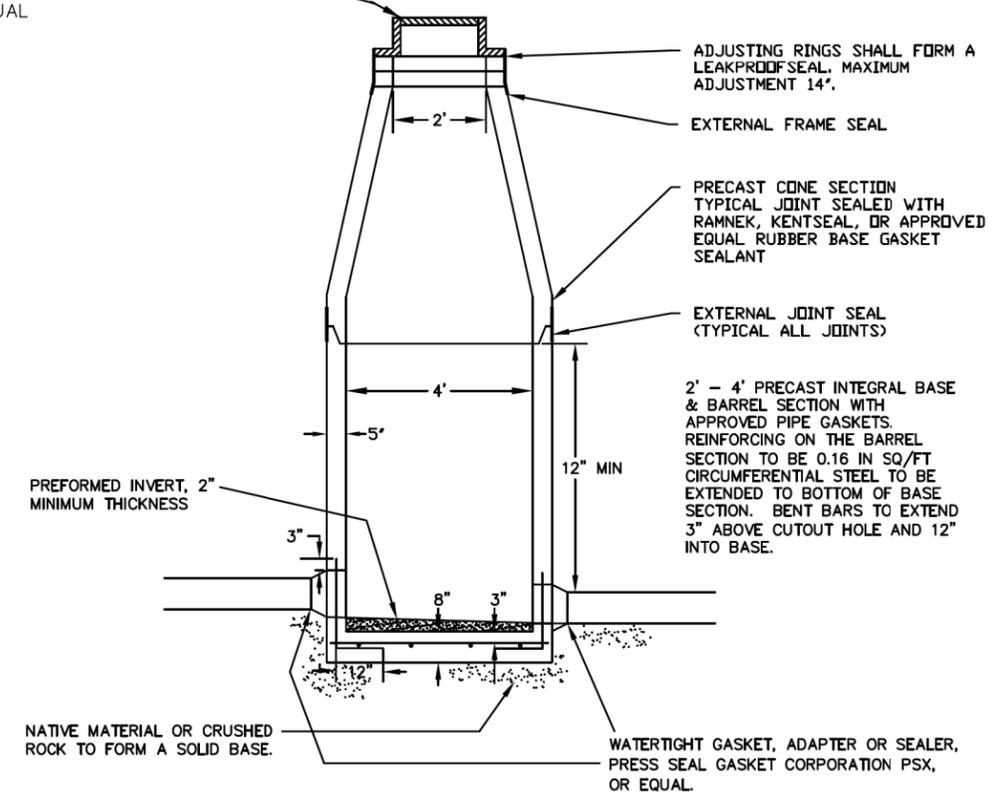


ALL TEES, ELBOWS, OR MECH. JOINTS (VALVES) SHALL BE WRAPPED IN TAR PAPER OR PLASTIC DO NOT COVER WEEP HOLES WITH WRAP OR ANY CONCRETE. MEGALUGS SHALL BE USED ON ALL FITTINGS EXCEPT 90° ELBOW TO HYDRANT.

**SANITARY SEWER MANHOLE**

**TYPE A MANHOLE FRAME AND LID**

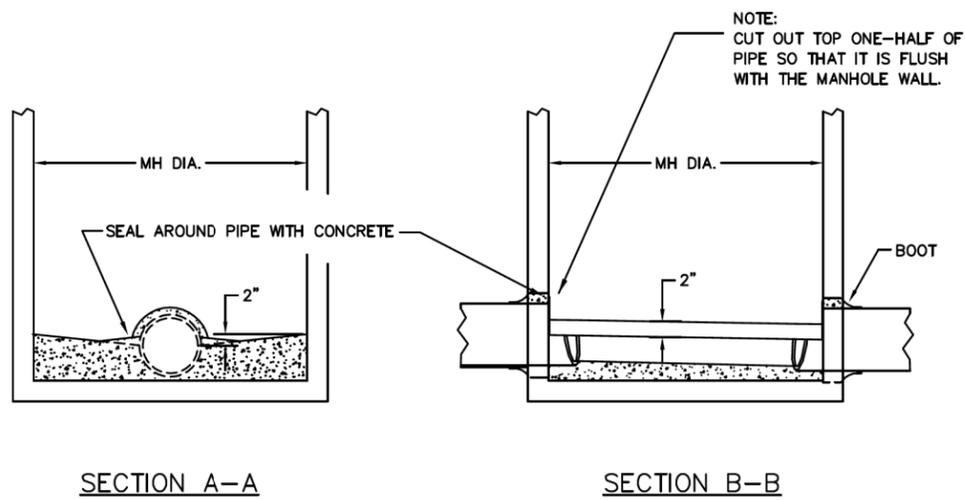
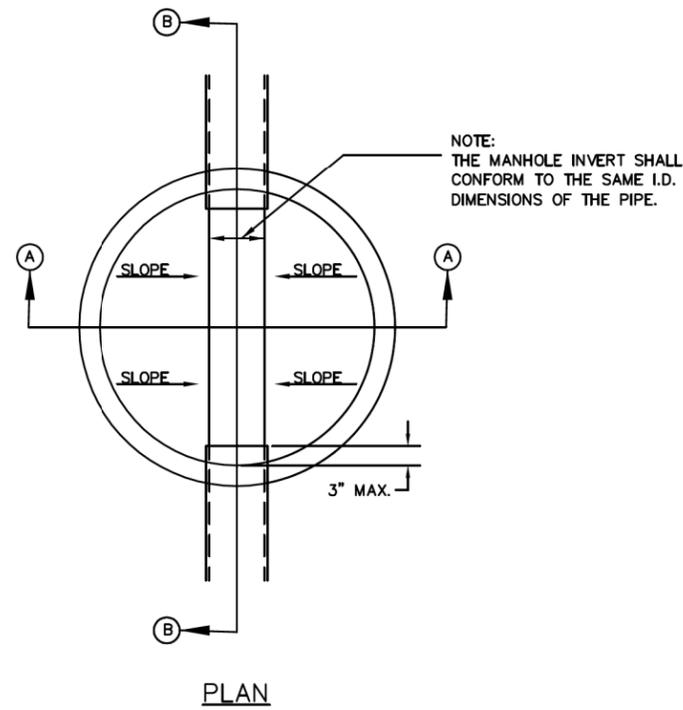
MANHOLE FRAME AND LID TO BE TYPE A9  
SUCH AS NEENAH R-1733-B OR ENGINEER  
APPROVED EQUAL



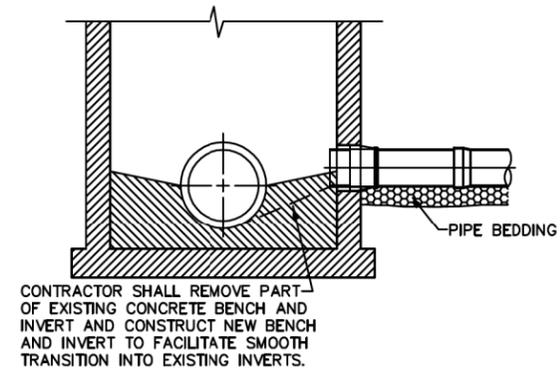
**GENERAL NOTE:**  
Geometric pattern on top of lid other than that shown shall be approved by the Engineer.

TYPE	HEIGHT	MIN. WEIGHT
A7	7"	400Lbs.
A8	8"	440Lbs.
A9	9"	470Lbs.
A10	10"	480Lbs.

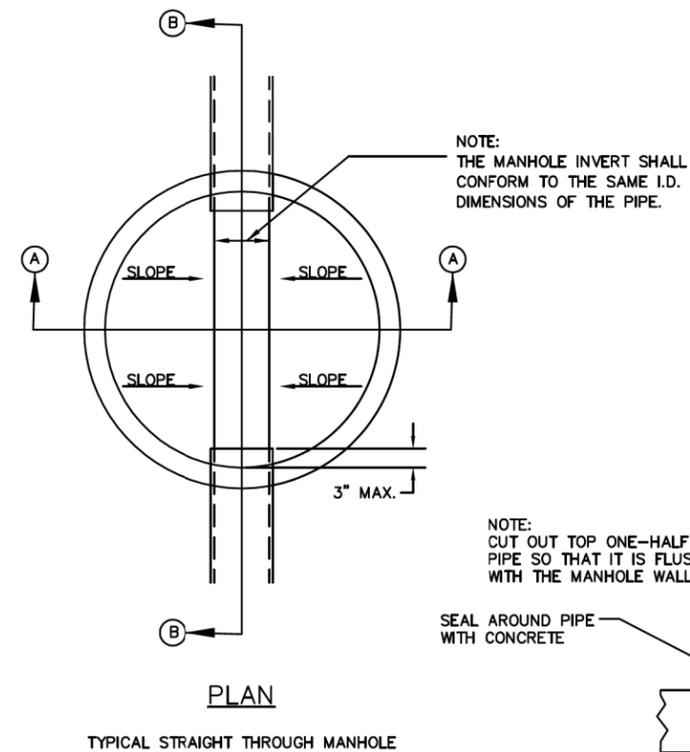
MANHOLE BENCH AND INVERT DETAIL



SECTION

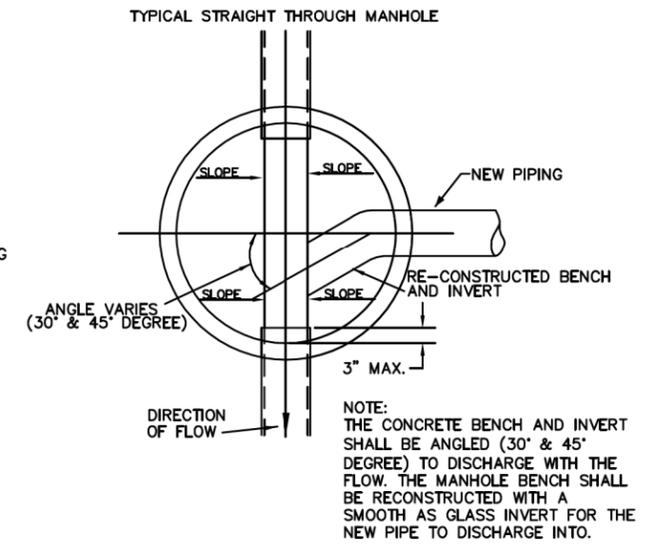


CONNECTION DETAIL

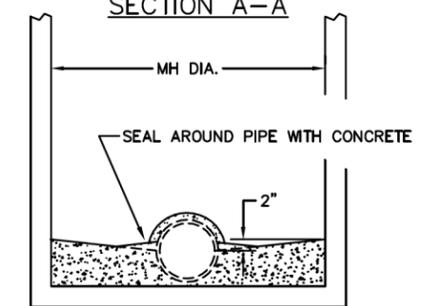


MANHOLE BENCH AND INVERT DETAIL

PLAN



SECTION A-A



SECTION B-B

